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Research Across Boundaries:
Introduction to the First Part of the Special Issue

Markus Molz¹ & Mark G. Edwards²

In the coming century, there will be an urgent need for scholars who go beyond the isolated facts; who make connections across the disciplines; and who begin to discover a more coherent view of knowledge and a more integrated, more authentic view of life. (Boyer, 1994, p. 118)

Background and Foreground

In the context of an unprecedented proliferation of research specializations and the pressing problem-solving needs in society, Ernest Boyer and other scholars, have emphasized the special role for research that connects knowledge and that spans boundaries. This scholarship of integration complements traditional modes of specialization of knowledge. Major advances in boundary spanning research across the seams of separate paradigms, disciplines, cultures and contexts have been made in many places in recent years. Multi-paradigm and multi-method research, translation research movements, trans- and meta-disciplinary approaches, as well as cross-cultural or cross-sector participatory projects are emerging in and across many fields of research. It is no accident that these developments are surfacing at this juncture in planetary evolution.

Down through the ages, each generation of humanity has faced its own challenges, its own demons, and its own possibilities for expanding the possibilities. Sometimes the challenges are accepted, the will, the heart and the hands are tested, and life deepens and expands. Sometimes the challenges are rejected and avoided, our demons get the better of us, we turn in on ourselves.

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and the possibilities afforded by human birth close down. Whatever our choices have been in the past, humanity has moved on. But something new presents itself in these current days. We are living in an unprecedented historical epoch, the *Anthropocene* (Steffen et al, 2011).

The human has irrevocably changed the planet. The impact of our actions are coming back to haunt us and our children. The challenges are now global, local and everything in between, they are with us now and they stretch out into the distant intergenerational future, they include the whole Earth system and every living thing that travels with her, they involve every aspect of the countless bio-social systems that network across her surface and which course through the intersubjective experience of every plant and animal. The possibilities for responding to the planetary challenges, and the implication of those responses, are extreme and they stretch out between a vision for and acceptance of a profound deepening of planetary potentials and a life-destroying, fear-laden rejection of the realities that demand our attention.

Science, the humanities, religion, art, the storehouses of cultural and indigenous knowledge, the world of lived practice and life experience will all generate their own contributions to meeting or avoiding the local, regional and global challenges that beset us. Many possibilities exist in considering these options but, whatever path we choose as individuals or as a single global family, never before have the global stakes been so high, never before has the need for planet-wide decision-making, for big-picture explanations and solutions been so pressing. Never before has human society, as a single entity, been required to develop a coherent global approach to dealing with the challenges that now confront it.

And it is no coincidence that the unfolding planetary challenge should also be accompanied by the emergence of global forms of knowing and of accessing knowledge. In no previous times has so much knowledge been intentionally produced, stored and disseminated, has there been such an extensive body of expertise in so many distinct research specializations. It is only now, in these last few years, that the products of so many knowledge traditions, institutions of learning, independent scholars, research collectives and commercial research sources from so many regions, cultures and historical periods have become accessible to so many people across the globe. The web and depth of knowledge is vast and it is available. But what sense can and will we make of it all? Down which pathways will all this knowledge lead us?

It is no coincidence that in these critical times of a global anthropogenic cocktail of crises, we are also immersed in an ocean of experience, of data, information and knowledge. Do we have the wisdom to not only develop shared knowledge from this ocean of information but also to make shared sense of it? And are we able to make use of the bigger pictures we gain from boundary-crossing experience and reflection to engage in large-scale and long-term coordinated action? This is needed to enable a dignified life for the many throughout the Great Transition (Raskin et al, 2002; Spratt et al, 2010). Under complex and volatile conditions boundary-crossing competence is also considered more and more important as a complement for domain-specific expertise (see e.g. Engeström, Engeström & Kärkkäinen, 1997, Horlick-Jones & Sime, 2004).

Responding to the need for shared sense making, there is a widespread and growing call today for building connections across disciplines, paradigms, cultures, and worldviews (see for instance Dussel, 2009; Giri, 2002, as well as Nelson and Raman in this issue). And indeed, in recent years various advances have been made in boundary-crossing research that facilitates (re)connections
between theory and practice, facts and values, history and future, sciences and humanities, the knowledge traditions of East and West, North and South. Gasper (2004) says that

we should recognize and promote a complex intellectual 'eco-system' with multiple legitimate types of life-form, sub-system, and of interaction of ideas, inquirers and users (p. 310) ... an eco-system within which many species and hybrids co-exist and interact ... A complex eco-system requires a complex system of concepts and models to describe and understand it. ... Interaction requires mutually accessible and acceptable intellectual frameworks. (p. 327)

In navigating through the hazards of the Great Transition we need conceptual visions with the requisite complexity and scope. Towards this end the Luxembourg Symposium was organized.

**The Luxembourg Symposium**

The international symposium “Research across Boundaries – Advances in Theory-building” was held at the University of Luxembourg in June of 2010. It brought together, for the first time, many leading boundary spanning and meta-level researchers from more than 15 countries across all continents and as many different research areas. In what became a set of truly global dialogues, the participants presented and commented an astounding array of contemporary integrative frameworks, as well as inter- and transdisciplinary reviews and research practices across various fields of inquiry of high relevance for the future.

This special issue brings together the contributions of many of the scholars and visionaries that participated in the symposium, plus a couple of complementary papers of resonating researchers who couldn’t make it to the event itself but were keen to make a contribution nevertheless. Our invitation was to deliver summary accounts of sustained boundary-crossing research and (meta)theory-building, often of a lifetime, to colleagues rooted in other research domains. The contributors were called to make the essentials of their sophisticated views, or more focused parts thereof, accessible to the interested public and to provide extended bibliographies for those attracted to explore the original sources of their work. Our guiding idea was to encourage boundary-crossing, on a meta-level, between mature boundary-crossing approaches that, somehow paradoxically, did not yet, or barely, come in touch with each other. The scientific committee of the symposium and its helpers volunteered to identify and invite these boundary-crossing scholars and to facilitate their meta-boundary-crossing dialogues and polylogues.

As a result, the Luxembourg symposium saw contributions offered that stemmed from quantum theoretical inspirations to cybernetics and complexity approaches, from action theory to semiotics and integrative meta-theorizing. The philosophical underpinnings included meta-paradigms like transdisciplinarity, integral theory, critical realism, relational contextualism, global ethics, as well as participatory and emancipatory worldviews. Issues of boundary-crossing research paradigms and communities, of sense-making tools and theory families, institutional barriers and opportunities were all intimately considered. The symposium provided an opportunity for these and other issues to be discussed in the context of uncovering convergences
and divergences, of proposing novel angles on integrative sense-making and on some of the failures and successes of past attempts at boundary-crossing research.

This special issue presents reworked papers prepared for the symposium. By reworked we mean that all the papers here have undergone a process of review and reappraisal. The dialogical approach that was undergirding the symposium and the process thereafter presented authors with multiple opportunities for gathering feedback and comment. Subsequent to this, papers also underwent a peer review process and authors had an opportunity to re-edit and improve their contributions. This special issue is the result of that extensive process. Given the number of contributions, it will be published in two parts. The first part is now available. The second part will follow soon. Let us now give an overview of the contents of the first part.

**Themes and Seams**

The special issue starts with some reflections on the Research across Boundaries Symposium from Jonathan Reams and Helmut Reich who, along with us (Markus Molz and Mark Edwards), where members of the scientific committee for the event. Reams and Reich describe the process by which the symposium was developed and structured as well as some of the outcomes that it generated. They comment in particular on the proposal for a University for the Future and the need for higher education and research institutions specifically redesigned and refocused in such a way that they become catalysts of sustainable and dignified pathways through the challenges of the Great Transition. We would like to add that the originally intended follow-up symposium is now scheduled for fall 2013 precisely with a focus on Transformative Higher Education. It is also noteworthy that the Critical Realism & Integral Theory Symposium in fall 2011 in California resulted from the first time encounter between Roy Bhaskar and Sean Esbjörn-Hargens at the Research across Boundaries Symposium.

The papers that are based on the symposium keynote speeches of Ruben Nelson and Varadaraja V. Raman, complemented by Ananta Kumar Giri, emphasize the point that learning, thinking and acting in an integrated manner is necessary in order to respond to the transformation times we live in. To do this we need to, as Nelson says, “cooperate with our evolution.” There is drama to this story - a drama of scope and scale of the problems, of immense confusion, the drama of awakening. Nelson believes there are signs that conscious evolution (Bárány, 2000; Eisler, 1998) is possible and is in fact underway. From the scientific domain there are signs that boundary crossing research will contribute to the development of a “new human-centered ‘meta-science’”. Such a science will play a crucial role in the coming decades.

Raman highlights the “extraordinary diversity” of human learning and knowledge and reviews different kinds of boundaries that integrative approaches have to bridge: between academic disciplines, between different cultures, religions and ethical frameworks, but also between science and society and science and spirituality. Each of these bounded perspectives has enriched the world in some way. But one-sidedness, bias and conflict has also been part of this story. Diversity offers the potential for innovative insights but also at times creates discord, fear or
ghettoization. The diversity of knowledge and wisdom traditions is becoming more apparent as we move towards the globalization of communication and information. Raman points out that we are not just dealing with “interactions between cultures, but with the interpenetration and interpretations and misinterpretations of cultures.” How might these encounters aid the emergence of consciousness and enhancement of creativity rather than create aggression and retraction. One starting point is to widen our horizons on what knowledge may be important for living with diversity. Harking back to S. P. Snow’s celebrated lecture on “The Two Cultures,” Raman calls for a closer collaboration between science and the humanities, between the worlds of technology and art, and learning and practice. The challenge, Raman argues, is not one of a limited interdisciplinary education but of respectful appreciation “of the fruits of the creative efforts in all disciplines, and to try to be sympathetic to the deepest concerns of those who are not of our particular group.”

Boundary crossing capabilities are essential for the emergence of planetary civilizations that are open and inquisitive rather than closed and fearful. Giri continues along the lines of learning across boundaries and invites to intentionally and actively weave global “networks of agape and creativity.” He emphasizes that ultimately “planetary realizations” don’t arise from cold intelligence or bounded expertise but from heartfelt encounters of humans touching each other respectfully in multiple dimensions of their being. In contrast to the expert, the hierarchical leader, or the ivory tower scholar, Giri foregrounds a deep identity that we can all share with each other regardless our background, the identity of “students of life and friends of the world.” Based on this shared identity loving and caring encounters of co-creation are possible that have the capacity to “overflow” and create new institutions or transform existing institutions. The other way round, Giri says, leaders of existing institutions can do much good when they create open spaces in the midst of their stable organizational structures that can host “planetary conversations” and support the boundary-crossing networks emerging from them. He indicates that this is how a “new enlightenment” can be sparked that is “simultaneously rational and spiritual, individual as well as collective.”

After these broad introductory perspectives, the contributions of Gary Hampson and Nick Maxwell approach the tensions between atomistic and holistic worldviews from historical, philosophical and institutional perspectives. Hampson provides contours of a possible “genealogy and topology of Western integrative thinking.” Historically, science and technology coalescing or originating in the West deployed their world-transforming power by emancipating from religious dogma and developing sophisticated empirical and analytical methodologies. Their undeniable success created a dominance of atomistic thinking which, on the other hand, is often considered as one of the root causes for the contemporary grand challenges. Hampson highlights that throughout Western history there were also always holistic currents and sets out to present a macro-historical lineage of integrative story telling. Using the overarching concepts of “creativity, intuition, love, organicism, and spiritual philosophy,” Hampson takes us on a journey through the syncretisms and integral weavings of “Hermetism, Neoplatonism, Renaisssancism, German Humanism and Reconstructive Postmodernism.” This condensed genealogical reading of boundary-crossing, integrative impulses in the Western history of ideas helps us to contextualize current efforts in these directions.

Maxwell squarely lays part of the responsibility for both the generation and the fragmented responses to the contemporary challenges on institutionalized science and its technological
He devoted his lifetime work to show that global crises have arisen because of the power of science and technology to change physical, biological and social systems while operating on the basis of an institutionalized divide between science and society. But Maxwell doesn’t stop with analyzing the situation. He also makes proposals for institutional transformation so that universities become places of wisdom; a crucial mission that goes beyond the accumulation and exploitation of fragmented knowledge. Maxwell argues that universities, researchers and scientific institutions require “a kind of inquiry rationally devoted to helping humanity make progress towards as good a world as possible.” For this he coins and substantiates the notion of “wisdom inquiry” and contrasts it with “knowledge inquiry” which is the wanting dominant mode of academic work. Despite the lack of institutional response to Maxwell’s thoroughly argued programmatic, many researchers are beginning to understand that a broader vision is needed to solve real world problems and that a substantial institutional redesign and ethical leadership is required to focus science prioritarily on the building of a better world.

The papers of Ananta Giri and Mike King, each in its own way but with complementary foci, look at possibilities and limits of boundary-crossing and integration. In their boundary-crossing scope both authors go beyond the range of scientific disciplines and advance proposals that take into account spiritual perspectives. Giri tackles the paradox of difference and integration in “life, self, culture, society and the world.” On the one hand he is aware that diversity needs to be welcomed and that the historical model of enforced integration “based upon annihilation of differences” can’t and shouldn’t be prolonged into the 21st century. On the other hand, he also sees the dangers of differences being valorized to the level of disconnection and separation in the wake of extreme relativists and communitarian positions. Rather, as Giri states, “differences also have threads of connections among them—they also seek to be part of a respectful and dignified emergent wholeness.” Giri is turning this paradox of difference and integration into a generative new ethic and practice of “differential integration” that requires “practices of weakening of entrenched identities and differences through cultivation of non-identities and non-differences.” Giri sees this as a “new art of integration which is not totalitarian and oppressive but rather seeks to help us realize our connectedness and potentiality.” It is an existential endeavor because it requires of us “weak and gentle integration” where integration starts with the recognition of our “weakness and vulnerability.” It also involves artistic sensibilities of “creativity and nurturance” and the ethical requirements for integrative justice, i.e. honoring of the marginalized and the weak.

King basically takes up the same paradox as Giri but with a focus on the sprawling of human knowledge and knowledge domains. King takes a principled and independent stance to problematize knowledge integration, in contrast to many other authors who take this need for granted. He states that “Schrödinger, Ricoeur and Wilber are poles apart in their respective worldviews, but share the idea of an all-embracing knowledge, the welding together of all that is known, the unification of human discourse.” King does not only expose in detail why this is not feasible but also why it is not even desirable. For him, the motivation for the unification of knowledge is misplaced. He claims that the appropriate realm for the “search for union” is mysticism, not science. Regards knowledge domains, King does not prone an anything goes approach, though. He recognizes that they can be organized hierarchically, at least partly, and that they have connections which he coins “isthmuses”. However, King’s “isthmus theory does not provide for the unification of all knowledge domains, but examines kinships or contiguities between domains that remain far more separate than connected.” Into his line of arguments King
weaves a reflection on “outsider scholarship” of the type practiced by “Koestler, Schumacher and Pirsig.” He presents these examples to show that we sometimes must look to the periphery, to the outsider and to the independent scholar to gain the most radical and often most clear-sighted boundary-crossing insights.

Jennifer Gidley and Mark Edwards each introduce new meta-level approaches. The question guiding Gidley’s contribution is “What are the leading-edge discourses that identify new paradigms of thinking and how can they be articulated and meta-cohered?” Gidley initiates the new field of “global knowledge futures” by relating streams of postformal studies, integral studies, planetary studies and futures studies to each other. She works at the “creative margins of these boundary-crossing fields, and seeking out and identifying the territory beyond them where they begin to touch each other.” Using the concept of “imaginaries that cohere” Gidley sets out a new vision for future studies as a field of creativity, imagination, dialogue and collaboration, on the way deconstructing the pervasive ideological discourse on the global knowledge economy and providing a typology of positivist and post-positivist futures approaches. Imagining the future necessarily involves all disciplines and all the potential connections that might exist between them. Hence, futures studies is already an integrative clearing in which all knowledge discourses can enter into dialogue. Gidley offers an intriguing vision of the next stage of its development.

Edwards’ also wants to consciously call out and name the emerging boundary-spanning forms of social science research. With his proposal for an “integral meta-studies,” Edwards provides a platform for the institutional recognition of integrative research. The theme, pointed out by Fritjof Capra several decades ago, of a critical turning point, once again appears here. We have the option of acting “globally to establish a sustainable and sustaining network of world societies or be ensnared, for the foreseeable long-term future, in a regressive cycle of ever-deepening global crises.” Integrative forms of meta-level sense-making will be needed for the positive arc of planetary development to occur. Edwards proposes a general schema for “situating this meta-level science” in which multiple branches of meta-level research activities are pursued. He encourages now “a more overt description and institutionalization of meta-level perspectives and practices.” This proposal is not for some new framework or metatheory but for the overt identification of a new arena of research, a meta-level social science that can study, critique and improve our big pictures, dominant practices, grand ideas and the ideologies that derive from them.

The contributions by Julie Thompson Klein and Irena Ateljevic take a different approach to the question of how to discuss and present boundary-crossing approaches. Rather than proposing a meta-layer that creates “meta-coherence,” as Gidley would say, they are discussing the specifics of a group of existing boundary-crossing research paradigms and discourses. This includes their differences, complementarities and interfaces. Klein’s paper helps clarify our understanding of the various streams of transdisciplinarity, a boundary crossing research movement that started some 40 years ago while particularly gaining momentum in recent years. Even though it the label is widely shared and identified with, the transdisciplinary movement is not unified and has a variety of expressions in different countries and research fields. Accordingly, Klein goes into the detail of the nomenclature for transdisciplinary forms of boundary-crossing research approaches. She looks at the clusters of keywords associated with transdisciplinarity. She finds there to be no one central definition and so there are several clusters of terms that are associated with transdisciplinarity. These clusters depend on such things as “differing philosophical outlooks,
contexts of practice, and views of the socio-political function of science and the educational system”. Her findings identify a “structured plurality of definitions” of transdisciplinarity which is not characterized by absolute divisions but by linked relationships. Together, these themes provide a “structure to the diversity of activities associated with transdisciplinarity.”

Ateljevic’s review of “transmodernity” as an umbrella term refers to the kind of appreciative interest that Raman encourages. Moving across such fields as critical economics, philosophy, postcolonial studies, social anthropology, psychology, and social activism, Ateljevic lays out a program for an integrated “transmodern” approach to a scholarship of hope and caring. This perspective comes from Ateljevic notion of “the synchronized phenomenon of emerging higher collective consciousness” as expressed in the “transmodernity paradigm” of Ghisi, the “transmodern philosophy of liberation” of Dussel (see forthcoming second part of the special issue), the “reflective/ living-systems paradigm” of Elgin, the “partnership model of caring economics” of Eisler, the “relational global consciousness of biosphere politics” of Rifkin, the “love ethics” of hooks and the “circularity paradigm of interdependence” of Steinem. Ateljevic wants to relate these disparate, emerging views to each other. She seeks to provide a coordinating language that connects these signs of an emerging paradigm shift that might well constitute “the new renaissance” of human history.

Several researchers have developed highly integrative metatheories and metamethodologies capable of locating and connecting an array of middle-range theories and models in or across research fields and disciplines in a big picture view. Søren Brier with his cybersemiotics and Bill Torbert with his developmental action inquiry (DAI) are two examples of the huge contributions that leading scholars can make to metatheory and metapractice. Søren Brier, imbued by decades of philosophy of science teaching and research, offers cybersemiotics as his candidate for an overarching framework for integrating other views and, moreover, for creating sound foundations for research in general. He builds this approach out of an integration of the physical, biological, socio-cultural and phenomenological sciences in his model of the “cybersemiotic star”. Relying on many different philosophers and scholars, particularly Charles Sanders Peirce and Niklas Luhmann, but also the medieval scholastic realist Duns Scotus, Brier describes his cybersemiotic framework, where “sign processes become the ground reality, on which our conceptions of ourselves, action, meaning and the world are built.” He exposes, furthermore, how different kinds and levels of semiotic and proto-semiotic processes arise evolutionarily in nature, culture and consciousness, how they come together in human beings and their communications, and how cybersemiotics helps to get this big picture.

The eminent organization and leadership theorist, researcher and practitioner Bill Torbert provides a detailed description and assessment of his collaborative developmental action inquiry (CDAI) “meta-paradigmatic approach to social science and social action.” In what he declared to be the last academic journal article he intends to publish in his prolific career, Torbert describes how multiple research paradigms and their associated methodologies are integrated within CDAI. Because it includes “first person consciousness development approaches, “second person, transformational, mutuality-seeking inquiry,” and third person objectivity seeking investigatory techniques, CDAI is not only a formal science but a general method for transformative inquiry and action. It considers and connects individual, organizational and social scientific development. Torbert introduces both objective and subjective data as to the efficacy and validity of CDAI and makes a strong point for the power of the action turn in integrative approaches.
The next two contributions practice boundary-crossing by reviewing a specific interdisciplinary research field while adding their own mark. Michael Kimmel reviews relevant streams from various originally mostly unconnected subdisciplines of different disciplines (such as cognitive linguistics, cognitive anthropology and cognitive psychology) that are in the process of merging more and more into an interdisciplinary field that is focusing on “the arc from the body to culture”. Kimmel makes evident how the body (through kinesthetic schemas), the mind (through concepts and metaphors) and culture (through ideologies and worldviews but also through artifacts and the built environment) interact and influence each other in complex ways without a single causal point of departure. It is easy to forget the role of embodiment when engaging in the flights of abstraction. Michael Kimmel reminds us of the role of the body and of metaphorical mapping in the formation of concepts and conceptual frameworks. His paper reviews approaches to the grounding of ideas in bodily experience. Drawing on the groundbreaking work of Lakoff and Johnson, among many others, Kimmel explains which role kinesthetic and bodily templates play in higher order cognitions (including the frameworks discussed in this special issue), and the other way round, how cultural categories are becoming inscribed in our bodies. Kimmel thoroughly reviews different explanations of this complex dialectical process and how, taken together, they can account for certain empirical cases that none of them alone can explain. He presents an artful blend of theoretical review and anthropological examples that also assesses the state of the art of this field and the open questions that need to be tackled to bring it to its next stage.

Rick Szostak takes an original boundary-crossing stance across cultures and disciplines, as well as between science and public policy in regard to the key issue of “human progress.” His paper outlines “a holistic understanding of human progress (its nature, its history, and its future prospects)”. Against cultural relativists and zeitgeist pessimists, he believes that there is a way to capture what most people would accept as desirable development, to trace back in history where how much progress actually occurred, and to make recommendations how to make progress in the time to come in areas in which we have been stagnating or falling back. Szostak’s paper deals with the idea of progress-regress from a new analytical perspective. He views the notion of progress as requiring the integration of ethical, historical, and social scientific analysis in ways that can influence policy-making. This integrative challenge, Szostak argues, can be met through the application of recent developments in interdisciplinary analysis.

The last two contributions of the first part of the special issue revolve around enriching existing interdisciplinary research fields and instigating their further development through boundary-crossing metatheoretical perspectives that were not part of the discourses in these fields before. Both fields featured here are of key relevance in the Great Transition: urban planning and consumer studies. The contribution from Christoph Woiwode is extremely important for its focus on applying boundary crossing research to the topic of urban planning and sustainability. Woiwode is critically appraising a major report of the German Advisory Council for Global Change introducing the important notions of transformation research/education versus transformative research/education. In relation to this, Woiwode moves across a broad series of issues, from spirituality, indigenous knowledge, to social transformation, and from climate change, values change to practical challenges of urban planning. He is using integral theory and transdisciplinarity as a means of developing meaning and cohesion across these vastly different knowledge domains that come together in urban planning. Transdisciplinarity (see Klein’s contribution in this issue) offers an important boundary crossing perspective in that it not only
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aims to connect scientific knowledge across different disciplines but also to translate that research into something that helps communities to address the very real problems that they face and the opportunities that might also be present. In developing sustaining visions for the future, the need for transdisciplinarity in the planning of cities and in the designing of urban environments will be crucial for achieving any level of authentic sustainability. Woiwode says urban planning and development are “at the center of the climate change adaptation and mitigation debate” and that this creates “an opportunity for hitherto largely neglected integral approaches to gain more importance in mainstream urban planning practice and theory.” Woiwode makes a strong case that transdisciplinarity, through its collaborative and participative methods, offers the kind of integrative and boundary crossing perspective that produce practical research that is relevant to the needs of communities across the world.

Sue McGregor also sets out to introduce transdisciplinary perspectives to perhaps the most crucial research field in the coming age of make or break sustainability: consumer studies. McGregor points out that over-consumption is impacting hugely on poorer members of the global community and that it is affecting the very basis for sustainable life systems. As she puts it, “we have consumed, produced and de-legislated ourselves into a human condition and ecological polycrisis.” McGregor makes the case for a transdisciplinary turn where consumption issues encapsulate not only the “symptomatic issues” of modern consumer society but with “human and ecological problems that manifest and mask themselves as symptoms of ill thought out consumption and greedy corporate behavior.” This turn does not only imply a boundary-crossing beyond the disciplines traditionally involved in consumer studies, but also a boundary-crossing between science and civil society, government and business, in terms of co-developing research conducted for transformative impact. Woiwode’s and McGregor’s examples remind us that any field can and should take advantage of being studied from and empowered through integral and transdisciplinary perspectives.

Openings and Endings

Through the contributions assembled in the first part of this special issue we could already see that there are a number of different and complementary ways to practice and review boundary-crossing research as highlighted in the introduction to each couple of papers. Regarding these different approaches the inherent paradox of the whole thing is striking. Boundaries are ephemeral and real, abstract and completely concrete (as any tour of a conventional university will confirm), they are institutionally ingrained while also being often quite arbitrary. We need boundaries to become who we are and to develop some knowledge at all, and we are also inherently boundless boundary-crossers (Unger, 2007). A lot of boundary work is going on (Gieryn, 1999; Horlick-Jones & Sime, 2004) because the mixed nature of knowledge and social boundaries excludes some communities while empowering others. The opportunity for rearrangement and crossing over boundaries may never be greater than it is currently. But it is simultaneously true that knowledge boundaries, the boundaries of what is “scientific”, and disciplinary boundaries within academic research have never been so grimly reinforced and institutionally upheld as at this time.

The papers here address both ends of this issue. From both within and without, institutional boundaries are being reinforced but also questioned. The imperatives of a world that does not
respect human made boundaries also often break into the plans of mice and men. But it is also true that the boundaries we create and cross have the power to destabilize entire planetary systems, physical, biological and social. We will need to develop methods for managing the lines of responsibility and knowledge that we create. The task before us is no less than planetary stewardship (Steffen et al, 2011) and the role of integrative studies in that management process drawing on well-developed boundary-crossing capabilities will be significant. The articles offered here contribute to that task, as will those featuring in the second part of this special issue in which we will also discuss more the inherent limits of integrative research endeavors and which complements they require to contribute to actual transformation work.

References

Impressions from the Luxemburg Symposium
Research Across Boundaries

Jonathan Reams¹ and K. Helmut Reich²

Introduction

These reflections were captured soon after the symposium Research Across Boundaries with the aim of providing some first-hand reflections to contextualize the articles found in this special issue. The objective of the symposium was to foster “boundary-crossing research that facilitates (re)connections between theory and practice, facts and values, history and future, sciences and humanities, East and West etc.” As members of the scientific committee, we had been involved in supporting Markus Molz with the planning of the event and knew the many challenges faced in attempting to weave together a coherent program for such a range of contributions. From many months of work, re-work and last minute adjustments to solve the inevitable difficulties that came up for some presenters, we worked out the following program:

1. Three keynotes, two on the opening evening and one the following morning.
2. Dialogues in 24 parallel session papers over two days divided into four themes focusing on:
   a. integrative conceptual frameworks,
   b. their critical appraisal,
   c. the connection between matter and mind, culture and consciousness, and
   d. aspects of the historical societal transformation from modernity to transmodernity.
3. A musical interlude provided by Miha Pogacnik.
4. A Knowledge Café (KC) where presenters, observers, attendees and volunteers all engaged in sharing the insights from their participation in the above sessions, this organized around 12 questions (listed below) distilled by the organizers from the questions that emerged from each of the parallel sessions the night before the KC.
5. Open Space Sessions where participants self-organized around actions they felt motivated to pursue from their experience of the symposium.

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² Helmut Reich, Doctoral degrees in physics, engineering and psychology of religion, Professor emeritus, Senior Research Fellow emeritus, Institute of Educational Sciences, Fribourg University / Switzerland, Former researcher at CERN, International Advisory Board Member of the Institute for Integral Studies, Author of “Developing the Horizons of the Mind: Relational and Contextual Reasoning and the Resolution of Cognitive Conflict” (Cambridge University Press, 2002), and many other publications on cognitive and religious development.
6. A final plenary session where closure was brought about through some dense reporting out of the Open Space sessions and rounds of gratitude expressions for the volunteers, organizers, and presenters.

You can find the full program and related materials here: http://dica-lab.org/rab

The present authors functioned as facilitators of sessions 2c and 2d (listed above) respectively, and participated as attendees in 1, 3, 4 and 6. Thus our observations are partial. A mitigating circumstance is that sessions 2c and 2d in a way represented two major tendencies of the symposium: a strictly fact-related, scientific problem-solving approach on the one hand and a stimulation of an emerging higher collective consciousness, leading notably to better communication, societal transformation, participatory democracy, and egalitarian cosmopolitism on the other.

Reflections

The reaction of the participants to the keynote lectures was generally favourable in that they set the broad scope and context of the work being undertaken in the symposium as well as presenting some examples of the kind of work necessary to accomplish the aims set out and certain traps to be avoided.

Regarding the parallel sessions, a major innovation of the symposium was that the papers were not presented by the authors themselves, but by the author of another paper in that specific session. This was one mode of boundary crossing in praxis. After some clarification of this novel approach, (almost) all the authors of sessions 2c and 2d were able to play by that proposal. The result was impressive. Not only had the presenters gone deeply into the 'foreign' paper they presented, but not infrequently they also made valuable proposals for its improvement. In fact, they often managed to reframe the work of their fellow panellists in such a way that new insights emerged for the papers’ authors.

In addition, the dialogues brought to light some difficulties such as how to fit the lengthy time scales for complex interdisciplinary research into the time structure of Ph.D. programs, as well as funding such research. They also at times brought about heated engagement as to assumptions about orientations regarding core issues, which were quite illuminating.

3 Whereas we are satisfied with the symposium as a whole, there is one undertaking that regrettably did not work out. We indicate it here briefly so that others hopefully may do better. Full-time observers had agreed to cover all sessions, and to present the results of their observations at the final plenary session as well as in the special journal edition devoted to the symposium. Unfortunately, for various reasons, these results were not acceptable for publication. As we know now, the role of a participant-observer at such a gathering requires many competences to be present in one person. Specifically, in spite of a captivating dialogue going on between the participants-only, observers need to maintain a certain (emotional) distance so that their attention is not diverted away from capturing and calmly analyzing even paradoxical or contradictory statements.

4 See articles from Nelson and Raman in this issue.
Looking at the subject matter of the presentations in session 2c, hopes for easier boundary crossing were raised notably by (a) Thomas and Brigitte Görnitz with their hypothetical notion of *protyposis*, condensed quantum information – posited as the grounding of both matter/energy and human consciousness, and these two therefore having the same ontological status – as well as by (b) Nancey Murphy’s *nonreductive physicalism* integrating science, theology and philosophy of mind. The central argument of (b) is that humans need to be understood as composite neural systems, whose immense neural complexity is enmeshed in an immensely complex cultural environment, and as having much downward control of their own functioning. In a nutshell this is *whole-part constraint*. An illustrative example of such a constraint would be the chances of being dealt an ace from a 52-card deck. If it were a question of playing a lonely game with say, 13 cards, the statistical expectation would be one ace (context-*free* constraint). However, if four players are involved, the chances of the second, third and fourth player will depend on the number of aces already distributed. Here a context-*dependent* constraint is at work. Similarly, arguing that the electrical and chemical brain processes (bottom-up processes) fully determine human activities is not acceptable from a dynamical system’s perspective: the whole-part constraint comes in here too and needs to be taken into account.

The other papers of session 2c to some extent were on similar lines as (a) above, viz. Harald Wallach’s, and as (b), namely those of Michael Kimmel, Lutz Eckensberger and Tatjana Meira-Kochetkova. It is as yet an open issue whether (a) and (b) can in any way be 'combined' to become even more powerful as a hypothesis for facilitating boundary crossing.

Session 2d contained a series of papers that while in many ways striking variations on the core theme of the session (aspects of the historical societal transformation from modernity to transmodernity) also managed to provide critical engagement and extended clarification of particular issues. The first day saw Wendelin Küpers, Sue McGregor and Ronnie Lessem (with Alexander Schieffer) present each other’s work through diverse and creative means. McGregor’s presentation of Küpers’ paper creatively reframed his presentation of his core thesis that future research on leadership and communication needs to break the largely univocal narratives presently being used. In turn, Küpers presented Lessem’s proposal to fundamentally rethink and ultimately rework the design of a university and thereby its specific role in and for a particular society, and also for humanity in general. This was then supplemented by examples of prototypes already being created. Lessem used a narrative/storytelling mode of presentation to engage McGregor’s thesis that the already interdisciplinary fields of home economics and consumer studies could benefit from moving to a transdisciplinary approach. This would be accompanied by a shift in focus from the study of material consumption to the results of this overdriven tendency of human nature to dealing with human and ecological issues. The depth and diversity of this session created a lively set of dialogues during the session, and the final hour of open dialogue brought about a serious deepening of the inquiry into what lay underneath these three presentations/activities and what common elements could be gleaned to help move the larger symposium goals forward.

The second day of session 2d saw Mark Luyckx Ghisi, Irena Ateljevic and Enrique Dussel continue the presentation of the session theme. Ghisi began by presenting Ateljevic’s thesis of how a transmodern paradigm is emerging. This emergence was shown through a number of significant bodies of literature all pointing to aspects of this phenomenon. Ateljevic then presented Ghisi’s similar view of a transmodern/post-capitalist society with a visual image to
Reams and Reich: Impressions

orient her remarks. This was grounded in work with the EU in moving to a knowledge economy as an example of a post capitalist society. There was significant alignment of these two presentations, moving the collective conversation towards a synthetic view. Dussel then presented his own (he was only able to arrive that morning) extensive work on defining transmodernity. The breadth, scope and depth of his presentation enthralled participants and raised the level of collective understanding of both the term transmodernity and the session theme as a whole to a new level.

Outcomes

Following these experiences, a major question arising is the relation between the two tendencies evoked previously, and to some extent epitomized by sessions 2c and 2d. More specifically, who singly, or in what combination of both, decides what the really important issues are, and what the criteria for the likely success of solutions proposed beyond empirical support?

Each of the parallel sessions was requested to come up with two questions each day. These questions were digested (along with dinner) by the scientific committee members to formulate a set of synthesized questions that seeded the Knowledge Café tables. After a great deal of processing the stimulating richness and diversity of questions provided, the committee came up with 12 questions. They were:

1. What conditions enable quality boundary crossing research dialogues?
2. What criteria can be used to assess the quality of inter/transdisciplinary boundary crossing research?
3. What role do ontologies, for example, hierarchical, flat or unified play in inter/transdisciplinary boundary crossing research?
4. How can we become more mindful of the ways metaphors/terminology shape boundary crossing research?
5. What are the relationships between science, philosophy, arts and other forms of human inquiry when pursuing boundary crossing research?
6. How do we determine adequate methods for boundary crossing research?
7. How do we recognize our blind spots, such as ignoring voices or theories from the periphery, when doing boundary crossing research?
8. What difficulties do we experience in doing boundary crossing research?
9. How do we support genuine dialogues that can transform modernity and co-create a conscious transmodern society?
10. What are the institutional supports required to enable boundary crossing research?
11. What kind of logics do we need to do boundary crossing research?
12. What further question do we need to ask?

Regarding question 11 (of which Helmut Reich was the KC recorder), there was general agreement that classical (Aristotelian) binary logic is insufficient for dealing with incompatible, paradoxical, seemingly contradictory concepts/ states of affairs. We need a 'logical' framework accommodating mutual acceptance and validation also in such cases, broadly speaking a post-formal logic. Participants discussed the matching of binary, dialectical, analogical, modal, fuzzy, and systems logic as well as that of relational and contextual reasoning (RCR) to the structure of
various problems. Also noted is that while for most participants logic pertains to rules for establishing valid arguments, others spoke of the logic of actions such as the logic of love or of slowing down living.

The Knowledge Café produced highly energized conversations among all in attendance. The final reporting saw the emergence of new levels of understanding of the core issues being faced. In the closing part of that morning participants were asked to cross the boundary from their intellectual engagement to attending to their affective states. This helped to shift and ground the energy of the morning.

The Open Space Sessions followed after lunch and led to a number of sessions where participants’ passions enabled conversations of those interested in follow up activities to set the stage for the work of the symposium to continue. One list that came out of these sessions was as follows:

- Organizing a follow-up symposium;
- Creating an international network of scholars, practitioners and initiatives of transformative, transdisciplinary and integral higher education;
- Setting up an online reading circle about each other’s inter-/ trans-/ meta-disciplinary writings;
- Developing a research program on self-transformation into a transmodern community/society;
- Creating links between inter-/ transdisciplinary academic journals;
- Editing a collaborative book on integrative frameworks.

Another list that emerged was to; (a) a new university for the future, (b) an inter-journal conversation, (c) a global reading circle, (d) a collaborative book proposal, (e) another research across boundary symposium, and (f) an international project to treat the question of the emergence of a post-/ transmodern society as a serious research project in its own right (to get it on the public agenda).

The closing plenary brought about a general sense of gratitude for the time spent together and the work put into making the event happen.

**Concluding Thoughts**

In addition to the undertakings from the Open Space Sessions, the general project now would be to propagate the idea of boundary crossing together with suitable methods and its relevance in a world that is becoming more and more complex and interconnected, and to explore how best this can be implemented in practice in various spheres of human activity.

Such were our thoughts in the immediate glow of the symposium. Time has passed to now, and reviewing this in preparation for the publication of this special issue, I (Jonathan) would like to add an additional reflection. While many ideas for the future progress in relation to this project were shared, as is often the case the follow up suffers from dissipation of energies. Yet it is clear that the ideas spread and take root in many forms most often unknown to those who began them.
However, one particular initiative that captured a good deal of interest and energy in the Open Space sessions was for creating a University for the Future, a ground up redesign of how such ideas could be put into practice. I have had varying degrees of involvement with this initiative, and wish here to point to it as an on-going effort to keep the spirit and ideas behind this symposium alive. You can find out more at http://u4future.net/.
Surprises Ahead:
What will be special about the 21st Century?
Why do we now need boundary-crossing research?

Ruben Nelson1

Introduction

As I understand it, my task is to set the wider historical context for the symposium Research Across Boundaries; to see our work whole and draw a long-bow on it.

On my office door there hangs a cartoon from The New Yorker. A man is walking past a storefront that has a sign advertising the services found within. The sign reads, “Things put in perspective while you wait.” This sign captures my sense of my assignment from the universe – for good and ill I am a big picture, context-sensitive, strategically-minded sense-maker. Therefore, I responded with delight when I was asked to think with you about this question: “What is it about the 21st Century that makes boundary-crossing research and living so important, vital, and even urgent?”

As suggested by the cartoon on my door, what I have to offer to you are my own reflections and perspectives. They are hard-won and I am staking my life on them. But they are nonetheless, just my perspectives. In terms the great American boundary-crooser, Willis Harman, used to use, “there is no requirement that you agree with me. You can get off this bus at any stop along the way.”

However, we are all aware that while perspectives are not reality, they are not to be grasped lightly. Perspectives are the basis of human action. As we see the world, so we understand it and act within it. Happily, when we change our minds, within limits, history changes. In this vein, I invite you to listen with your most aware, generous and critical selves. John Gardiner, Lyndon Johnson’s Secretary of Education, once observed that he had enough persons in his life who were unloving critics, even enough who were uncritical lovers, that what he hungered for were more loving critics. So it is with me, and I assume all of us.

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What Will Be Special About the 21st Century?

So, to work, “What will be special about the 21st Century?”

I offer the thought that the 21st Century is a hinge of history, a truly rare time in which the long trajectory of human history will irrevocably change. Well before 2100, it will be clear that human kind will have turned a corner; we will see that the transformations of the 21st Century are far more profound, thorough-going and urgent than was publicly recognized in 2010. It will also be clear that our species faces either a tragedy – continuing crises, collapse and eventual extinction, or a comedy – the human journey will continue for millennia towards an ever deeper humanity.

The thought that our time may both require and be a period of profound civilizational transformation may be familiar to those of us who are gathered here. However, we all know that it is not yet an idea in good currency. This way of framing the 21st Century will not occur to or pass the lips of any of those who gather this day in Canada at the meeting of the G20. Few programs in transformational leadership even hint at civilizational work, fewer still prepare us for it. Living the civilizational perspective legitimacy and responding to it with great courage and imagination are among the most pressing tasks of the early 21st Century. Fulfilling this project requires boundary-crossers and boundary-crossing research and living. We have real work to do.

So I will explore for a bit, the question of, “Just how profound, thorough-going and urgent is the transformation we are in?”

**Profound:** I have come to distinguish between a culture and the form of civilization any given culture will manifest at a particular time in human history. I do so because this distinction allows me to offer the thought that what is changing within and among us is not only our various cultures, but the deepest forms of human civilization. From this perspective, to talk of the emergence of a post-industrial or transmodern civilization as if it is merely a newly emergent form of a culture, is to miss a good deal of the length, breadth, depth and drama of the challenges we face in the 21st Century.

By culture I mean what is normally understood in these settings. As an example, I offer this statement made in a powerful Keynote address in 2009 in Essen, Germany by my friend and colleague Thomas Homer-Dixon, “I have come to realize that the solutions to our climate-change crisis will ultimately reside at the level of culture.” While I agree with his use of ‘culture’, I would add to his statement, “and the form of civilization it manifests.” In my view, the changes he is calling for do not only entail a transformation of culture, but an evolution of a new form of civilization.

As I look at our history as a species, I find it useful to distinguish five forms of civilization: small-group nomadic forms, settled regional forms, settled empire forms, modern/industrial forms and, just possibly, a truly post-industrial or trans-modern form of civilization. This latter, of course, is only a place-holder until we figure out the nature of the beating heart of the next form of civilization, should there be one.
These five forms imply that any given form of civilization is not static. If the conditions are right a new form of civilization can emerge from an existing form. If this were not so, there would be only one form of civilization. For good and ill, this is obviously not the case. One policy implication is clear – we should stop promising persons, including ourselves, that they have the right to maintain their present form of culture and civilization forever. Whatever our intentions, this is a promise we likely cannot keep. Contrary to Margret Thatcher and George W Bush: No way of life is non-negotiable.

A major reason I focus on the various forms of civilization and distinguish them from different cultures is that every form of civilization is a cosmic bet that its grip on reality – what it takes to be known, true, good and beautiful – is reliable enough that the lives of its descendants will be secure if they continue to honour and live by the ways they have inherited.

At least to me this much is clear. It is not sufficient to use the category of culture to capture the transformations that are afoot within and among us today. Much as cultural differences are not to be overlooked or taken lightly, they do not capture the deep differences that exist among different forms of civilization. Put another way, the differences among actual cultures within a given form of civilization are smaller than the differences among the various forms of civilization.

Consider for example, that the French, among several others, have lived in the first four forms of civilization, although, of course, they did not know themselves as French 20,000 years ago. This comment also applies to the Hebrew/Christian tradition. If pursued, this perspective can reframe our too oft misbegotten ways of creating public policy about social welfare, innovation, multiculturalism, Islam, and East/West differences.

Thorough-going: It will not surprise you that as I see them the transformations we are in will be far more thorough-going than is commonly understood. The point I want to convey is this: it is no accident that every spiritual and psychological tradition worth its salt has images of awakening to a new sense of reality at its heart. “Once I was blind, now I can see.” Evolving consciousness is the name of the human game not merely that of living right or getting richer.

This was exemplified in a recent conversation with one of the godfathers of complexity theory – Stuart Kauffman. He was saying how excited he was to realize that we live in an open universe; that while he had known this fact for decades, he was just beginning to explore how radical an insight it is. We all know the mind works in this way. The gap in time is long between the dawning and initial exploration of new perspectives and the time when they become ideas in good currency, even in our own lives, let alone that of in our societies.

This gap between insight and its deep digestion into the routines of living is both blessing and curse. The blessing is that we avoid a life of constant turmoil; one driven by the mad rush to live out our newest insights in new ways, and do it today. The curse is overshoot – as persons, societies and civilizations we are prone to staying within familiar patterns and commitments long after the conditions that required them and made them successful have disintegrated. The financial world has a term for the investments we make during this time – regret capital.
I have learned from my mentors that we can trust that insights will dawn and work their way into our lives. Therefore, it is safe to say that in the 21st Century a critical mass of opinion leaders world-wide will move beyond a notional acquaintance with systems, complexity, non-linearity, and respect for/love of persons, community and humanity. These ideas and the realities they reveal will come to grip us by the throat. This new wine will not be captured within the old wineskins of any existing form of civilization. Unfortunately, the timing of these developments is uncertain. The truly big question of whether they will arrive in time to ensure the human future is still open.

**Urgency:** A sense of urgency is a function of the ratio of the time we have to do what is necessary and the time it will take to get the job done. When the time we have is divided by the time required, if the answer is 1 or more than 1, we can, at least in principle, succeed; if not, failure is virtually guaranteed.

So how long does it take any form of civilization to evolve into a truly new form? It appears to have taken about 5,000 years for settled regional forms of civilization to emerge and become widespread. None undertook this journey deliberately. There was no handbook for shepherds to become farmers. It took roughly half this time for settled empires to emerge and become common. More recently, it has taken roughly 1,000 years for the modern/Industrial form of civilization to emerge and spread to every corner of the Earth. What is more, the development of new forms of civilization has been slow, local/regional, unconscious and optional. Sadly, none of these four descriptors apply to the work that is now before us. No one suggests we have as much as 100 years to get this work well underway. In short, we are in way more trouble than we know.

This means that for the first time in history, our species must become conscious enough of ourselves and the planet to learn to cooperate with our own evolution. From my perspective, the core work of the 21st Century is to nudge our existing forms of civilization onto a fundamentally different trajectory and to do so in order to allow us to learn to consciously guide our own evolution. The ‘our’ here is at every level – as persons, families, friends, groups, communities, organizations, polities and whole civilizations. For good and ill, to survive with any reasonable degree of grace we must become conscious architects and intentional co-creators of new ways of seeing, thinking and living – ways that truly fit the unique conditions that are emerging in the 21st Century.

So how are we doing? Consider a somewhat random and incomplete selection of evidence:

- Bill Leiss, the inventor of the *Ecological Footprint*, has stated that when Heather and I were married in 1961, humanity was consuming only 50% of the Earth’s resources, when calculated at a sustainable rate of consumption. Today, his figure is 140% and is still growing.

- Dennis Bushnell, NASA’s Chief Scientist at Langley, is quite clear from public platforms that if you are not deeply worried about the future of humanity, you are not well enough read; your knowledge-base is simply not current.

- The phenomenon of globalization, at root, means that we are well and truly stuck with each other. There is no place to hide. We can no longer afford to hear the admonition of Jesus to “pray for your enemies” merely as a moral/spiritual precept. It is an emerging
empirical requirement of a world in which it is illusory to think that we can live and prosper while our enemies die.
- The reality, as-yet undigested, that resources are increasingly scarce; some in absolute terms, all when measured per capita.
- There is no hint in the Bruntland Report or most sustainability work that sustainable development requires an evolution of our form of civilization.
- There was no official talk in Copenhagen about climate change as a symptom of a much deeper malady – a form of civilization that is reaching the end of its rope.
- As Yehezkel Dror put it in his Report to the Club of Rome:
  - The situation of humanity in the face of global transformations can be summarised in two sentences: Societies are unprepared; Governance is unequipped…. In the main contemporary governance is obsolete and unable to deal fittingly with rapidly mutating problems and opportunities.
  - My remarkable colleague, Dr. Maureen O’Hara, characterizes our situation this way: We face Another Inconvenient Truth – the biggest challenges of the 21st Century will be those for which we are least prepared and on which we spend little serious money; those that bear on our deepest sense of what it is to be human; those that are social, psychological, spiritual and cognitive in nature.

As I read the evidence, the main conclusion is not comforting. To me, it has become apparent that there is no reasonable chance that eight or nine billion of us will be able to live on this earth as an acceptable version of a late, modern/Industrial form of civilization; that today’s core global project, achieving sustainable development within this unconsciously held frame of reference, simply cannot succeed.

Nonetheless, modern/industrial civilizations are undaunted, as are the elites in virtually all other societies. We simply do not believe that the 21st Century will be, as the Centre for Strategic and International Studies asserts, An Age of Consequences. Indeed, we cannot bring ourselves to believe it. Rather, we cheer the fact that the fundamental dynamic of human civilization today is that of the late, modern/industrial form of civilization becoming the norm. Everywhere, officially life is coming to be seen as a production/consumption function, the success of which is measured by the accumulation of money. Greece was not the only country dominated by the thought that we must “Build a competitive Greece.” Indeed, the speed and sophistication of the extension of this understanding to the ends of the earth in the last 60 years makes the efficiency of the 19th and 20th Century Christian missionary movements pale in comparison. Consider that 1,000 business schools are being built every year. More, those who open them do so with pride in the name of progress.

I am trying to point out that, as a species, we still live officially within long-inherited and multi-layered frames of reference. For example, this ancient assumption is still made today – while the future may be unknown, it will allow us, wherever and whomever we are, to be whom we are already, forever. Everywhere and overwhelmingly, the conversations of officially sanctioned consciousness are within, not about, the deepest assumptions on which our ways of living hang. This is dominantly true of our governments, major corporations, foundations, churches, universities, international bodies, voluntary organizations, disciplines and learned societies. Sadly, it is even dominantly true of the field I know best: that of futures research and
strategic foresight. In this perspective, the global credit crisis, which is still costing us far more than mere trillions, is but a warning shot regarding the damage our most deeply embedded and unconsciously-held assumptions can do.

These thoughts are truly troubling. One reason is that we now know that whole cultures can, and sometimes do, get it profoundly wrong; that whole cultures can and have set their feet to a path that, in time, leads only to societal disorder and even collapse. The work of Joseph Tainter and Jared Diamond makes this clear. Worse, we know that to date no culture that has found itself on such a path has been able to become conscious of this fact early and deeply enough to alter its fate. As of today, the scoreboard reads something like “History 22, Humans 0.”

Is Hope Warranted?

You have probably figured out that from my perspective, we do not suffer so much from counter-intuitive reality, as from forms of civilization that rest on, reflect and reinforce counter-reality intuitions. That I am pessimistic about the development of a reality-grounded intuition that is deeply absorbed in time by the opinion leaders of modern/industrial civilization will not be news to you. For me optimism and pessimism are a measure of the anticipated difficulty of the human journey. I believe it will be far harder and more arduous than any we now anticipate or are prepared for. But pessimism is not hopelessness.

I am a hopeful pessimist. I believe that the myth of Sisyphus is not the last word about the human adventure. Why?

As a free-lance intellectual, I am cheered by the thought that a transformation of our form of civilization is not merely required, but is already well underway; that over the last 250 years as we have been extending our modern/industrial capacities, we also have been profoundly changing our minds about the nature of reality, what it is to know it reliably and who we are as persons within reality. As I see it, we in modern/industrial civilizations are being driven off our inherited mental maps and governance models at depths that, while not unprecedented, are truly rare. The good news is that what is driving us in these wholly new directions is the best, not just the worst, of modern/industrial civilization. As children of the Enlightenment, many of us have had the courage to follow the data wherever it had taken us, even into terra incognita. Cross-boundary work depends and builds on this quality of courage-driven integrity.

Again, somewhat randomly, I draw your attention to the following:

- This event and the work that brings us here. It could not have happened in 1970 and would not wait until 2040. Whatever else we share, it is the conviction that we cannot make sense of the nature of, threats to and possibilities hidden within the present without greatly expanding our imaginative grasp on the world of which we are a part. We know that the short-term, siloed, and superficial sensibilities that characterize and dominate modern/industrial forms of civilization simply will not get us to where we need to go. We know, as my grandmother told me, we must become persons who are far-sighted, broad-minded, with a depth of judgment.
- The emergence of a sensibility alive to and informed by living adaptive systems, complexity theory, humanistic psychology, critical theory and an openness to a renewed spirituality, forgiveness and love.
- The widespread hunger for spaces within which we can grow; for experiences that are intellectually reliable, emotionally safe and deeply non-trivial.
- The fact that it is slowly dawning on us that any human future will require a degree of maturity that is unprecedented in human history; that the challenge of self-limitation is at the heart of our work in the 21st Century; and that self-deprecation greases the skids of self-limitation. Consider this paragraph from Ian McEwan’s new book, Solar:

> How, wondered Beard as his plane last quitted the stack on a banking hairpin tangent and lined itself up north of the Thames to begin its descent, how could we ever begin to restrain ourselves? We appeared, at this height, like a spreading lichen, a ravaging bloom of algae, a mound enveloping a soft fruit – we were such a wild success. Up there with the spores.

As a person, of course, I am also fed by multiple sources of life and hope. I include kittens, the colour of the sky over my Rocky Mountains at dusk, children, an open universe, an uncertain future, our capacity for intellectual, emotional, physical, and spiritual experiences, my wife’s voice and the excitement of good work. And, all of these rest on my experience of being loved. For me, the last word about my life, and by extension our lives, is in the passive voice. We are held and loved. We live by grace. I doubt this is news to you.

In this light, this meeting can be seen as a clan gathering. Granted we are a loose-knit bunch. As with any family reunion we discover cousins we did not know we had. Our clan identity, such as it is, appears to be rooted in the power of the experience of coming to insights that cross, span, transcend and soften the boundaries that fragment our lives, landscapes and communities – silos of gender, ethnicity, discipline, tradition, sector, geography, nation and language. Whatever the specific and individual paths that got each one of us here, we know that by growing beyond our inherited horizons we can see, think and do things that inherited patterns do not permit. We also know in our bones how liberating and empowering this can be. The bonus is that in the process we become more fully human and do so as persons, families, communities, organizations, nationalities and just possibly whole civilizations.

In short, our commitment to boundary-crossing research and living is experiential, as well as solidly intellectual. We need it for us as persons and not just for our careers and our shared future. The work of conceiving and embodying the next form of civilization requires us to be willing to trespass even when others tell us to stop.

Lest we get too giddy with the journey we are on, we need to recall that learning to exercise responsibility for the ongoing evolution of the form of our civilization is new work. Moses, the Buddha, the Prophets, Confucius, Aristotle, Jesus, Mohamed are all silent on it. As far as I know, this work is not assigned in substantial terms. To my knowledge, for example, the world’s first major research centre that is wholly devoted to developing an integral and reliable knowledge of the long evolution of human consciousness, cultures and forms of civilization has yet to be founded.
I do not mean that there are no persons, and even institutions, with a deep interest and commitment to aspects of this work. Our presence here is testimony to the contrary. We are not here by accident. Our lives to some significant degree are dedicated to this work. Nevertheless, we must admit that the institutions in which we live, the governments, corporations and foundations that fund them are not yet captivated by the new project of learning to be mid-wives of a new form of civilization. A new Manhattan Project to save civilization is not yet even on our agenda, let alone that of the G20.

This is ironic. Our money-mad societies are blind to the fact that there is a franchise here – one that is worth hundreds of billions to the first jurisdictions with the moxie and capacity to own it. I have no doubt that in the next 5 to 15 years, some jurisdiction will publicly commit itself to becoming a living learning laboratory for the world – one that demonstrates how a largely unconscious late modern/industrial culture can transform itself into a wholly new form of civilization. What I do not yet know is who will pick up this challenge and where the world’s first conference of jurisdictions committed to this work will be held. That it will be held I am wholly confident.

Summary

Allow me to briefly recap what I have tried to say.

Our time, the 21st Century, is profoundly important for the long-term future of our species and the planet as we know it. This century is a hinge of history like no other. By 2100 we will know whether the future will be fatal for us or whether we have managed to walk the narrow edge of a precipitous cliff and are giving life to the new global project of birthing a truly new form of civilization.

Much sooner, possibly as early as 2020, some of the things that we as a group are coming to know will have gone critical in the wider world and be known by more than a critical mass of opinion leaders. This means, among other things, that the official optimism of late modern/industrial civilizations will all too soon give way to widespread dread and pessimism; possibly to panic and paranoia. Bluntly, we are about to be sorely tested as a whole species. Best we find a sure footing for the courage to be hopeful in the midst of our bouts of depression. Best we re-discover knowing as a sacred act of love.

But lest we get too starry-eyed, Northrop Frye, the great Canadian literary critic, would remind us that for life to be a comedy, not a tragedy, those who go hand in hand into the sunset have had to have the wit and courage to live to the end of the story. Given that the actual story we are in is not one we think we are in, the drama of the 21st Century will be riveting. Will we awaken in time to realize that the future now so widely anticipated is among the least likely? If we awaken, will we figure out the work that is required of us? If we know the work, will we rise to the occasion or falter? If we falter, will others abandon or encourage us?

I conclude with the words of Wilfred Cantwell Smith, another exceptional Canadian. Wilf Smith was one of the world’s great historians of religion. He founded the McGill Institute for
Islamic studies and later the Harvard Centre for the Study of World Religions. In a private note to me he said:

I have spent much of the last forty years endeavouring to understand world views other than those we in the West have inherited; and in the last several years I have been particularly concerned with the question of what is involved in the endeavour to understand, and to help others understand, an outlook different from the one that one already has. One of the conclusions to which I have come is that in order to understand a different view – especially if it be radically different and/or profound, comprehensive, humane – one must oneself become a different sort of person.

So it is for those of us who are boundary crossers – persons who are becoming conscious co-creators of a new form of civilization. May it be a civilization that is reasonably wise, prophetic, visionary, courageous, respectful, secure, prosperous, inclusive, innovative, sustainable, deeply humane and easily moved to both tears and laughter. The future is in our minds, our hearts and our hands.
Varieties of Boundary Crossings

V. V. Raman

Introduction

Boundary-crossings are valuable in many ways. Sometimes they may even be essential for survival. In the complex world in which we live boundary crossings occur in a variety of contexts: Among the sciences, among religions, between science and religion, among cultures, within cultures, and so on. Normally every of us, whether professionally or individually, functions within circumscribed boundaries. Most of our thoughts, actions and behavior are within some boundaries. This is necessary for efficiency, personal security and self-confidence. It is also constrained by our capacities and resources. However, there arise situations when we have to go beyond the boundaries: for enrichment, understanding, and peace.

In this lecture, I propose to explore the variety of contexts in which boundary crossings occur, as well as their impacts, some beneficial and others not so. I will also indulge in some linguistic boundary crossing as I discuss the subject.

Boundary Crossings in Different Spheres

David Hilbert famously said that mathematics knows no race or geographical boundary [Die Mathematik kennt keine Rassen oder geographische Grenzen]. This is true of love and music also. But this is not the case in many other contexts. We need bridges not just between scientists and literati, but between physicists and biologists, cosmologists and theologians, theoreticians and common citizens, moral philosophers and soldiers in the battle-field, social reformers and traditionalists, evolutionists and creationists, cultural anthropologists and practitioners of the cultures studied, even between cartoonists and ardent religionists who demand everyone in the world to be subject to the laws of blasphemy of their own religion.

Our challenge is as much to foster boundary crossing in the best sense of the term as to cope with the tremors that have resulted from the boundary-less movement of people. In the current world, it is not only the one who has crossed boundaries for livelihood that has to adjust, but also the one into whose territory the other has crossed. It is difficult to deal with situations where one has to adjust to new values and cultural rules. It is equally difficult to understand and respect, if not agree with, the worldviews that others hold dear, and be sympathetic to their deepest

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concerns. This responsibility often falls on the stronger much more than one those who feel victimized.

**Snow’s Two Cultures**

Recall S. P. Snow’s celebrated lecture on *The Two Cultures* of fifty years ago. Snow warned of a growing rift between scientists and specialists in the humanities. He was shocked that not many humanists could state the second law of thermodynamics which, in his view, was the equivalent of knowing a Shakespearean play. Snow was right in that lack of understanding between influential groups in society is not healthy. But he was off the mark in imagining that problems arise only if poets and politicians, composers and literary critics, historians and philosophers were not familiar with each other’s fields. It is fair to say that the world can get along fine without grasping quantum mechanics or the structure of DNA as long as the beneficial outcomes of those breakthroughs come down to the people who have not had the benefit of studying wave equations, group theory and molecular biology.

Indeed, what is unfortunate is that the chasm between Snow’s two cultures has persisted, even deepened. New problems have arisen because of misunderstandings between different cultures that vie for recognition and influence in our complex world, and between different segments and people within cultures on some of the fundamental worldviews that shape civilization. While it may be all right for practitioners in various spheres to work in their respective areas with little appreciation or understanding of the myriad components that fuel human societies, confusion of each other’s values and beliefs, and of what science is all about has landed us into conceptual chaos.

**Boundary Crossings in Science**

In the history of science, we find back-and-forth movements between unity and division. Science started as a systematic study of natural phenomena, and splintered into specialized disciplines like physics, chemistry, and biology. These were subdivided into astronomy, geology, organic and inorganic chemistry, physiology, etc. Then there were boundary crossings which gave rise to such disciplines as geophysics, physical chemistry, genetic archaeology. Those who cross boundaries may bring new insights, expand the field, or initiate new ones. So we have interdisciplinary and transdisciplinary sciences. Thus crossing boundaries can be productive as well, as in fields like neuroscience, molecular biology, and astrophysics.

Boundary crossings in scientific disciplines cannot be avoided because the natural world is an integral whole which has been segmented and fragmented primarily for our convenience in analysis. It is inevitable that we uncover the threads that subtly interweave it all into a coherent and seamless quilt. That was and still is the dream of the reductionist school, and that is what the TOE (theory of everything) is all about. As Albert Einstein said, “the supreme task of the physicist is to arrive at those universal laws from which the cosmos can be built up by pure deduction.” It may even come to pass that in this way the dichotomy between the sciences and the arts will dissolve to reveal a splendid totality in all its complex interconnectedness.
Science and Society

Academic scholars and scientists are primarily involved in explorative and creative works. But many of them are also engaged in socially relevant research and activities as in the humanities and social sciences. In our interconnected world no one can afford to remain isolated. Natural scientists need to consider the impact of their work on the rest of society. It would be detrimental to society if natural scientists have no appreciation of history and philosophy, if they are indifferent to the nature, scope, and potential of human knowledge, or how society regards science; and if they care not for the ethical implications of their work.

Social scientists are concerned with matters close to the heart of lived life. They often reinforce their work with results from natural sciences. Whether in politics, economics or history, insights from science are often valuable. Any meaningful academic discipline can only be enriched by knowledge of developments in science. T. S. Eliot said, “Every experience is a paradox in that it means to be absolute, and yet is relative.” However, the idea of relativity of knowledge needs to be grasped appropriately. Or else, all knowledge and ethics will be trivialized into unreliable relativity.

Boundary Crossing and Academic Territoriality

Specialists don’t appreciate outsiders dabbling in their fields of expertise. It is difficult for them to take seriously a stranger dabbling in their hallowed domain. What is not always recognized is that the newcomer has two advantages. She is not fettered by perspectives to which the specialist is conditioned. The new-comer comes with an expertise in another field that might provide new insights into the problems confronting a different field. But serious boundary crossing is impossible between science and pseudo-science, except in a trivial sense. Niels Bohr once quipped that he had a good-luck charm in his office because he was told it brought luck even to those who did not believe in it. [“Jeg er ikke overtroisk, men jeg har forstået, at det bringer lykke, enten man tror på det eller ej.”] Astronomy and astrology can never mesh. The goal of academic territoriality is to preserve the integrity of disciplines.

There is also a huge gulf separating the ethereal world of the ivory tower and the practical world of work and sweat. Though academics, especially in the social sciences, are concerned with these, intellectuals are shielded from the realities of the struggle of the common man to make a living. As Henrik Ibsen said in one of his plays, “A thousand words will not leave so deep an impression as one deed” [“Ikke tusen ord seg prenter som én gjerning spor.”]. There are often more words than deeds from academia.

Cultural Boundary Crossings and Globalization

Since ancient times, traders and travelers have gone to distant lands and brought from them knowledge and goods to their own countrymen. They have done cultural boundary crossing, and were among the first to engage in cultural boundary crossing. Often they also brought back impressions of and information on alien cultures. Hieun Tsang, Alexander and Al Biruni were only some of the many such names that figure in history. Like Morco Polo’s suitcase, some
people crossed boundaries from station to station to learn about other cultures ["Sono una valigia e giro di stazione in stazione ..... "].

Contemporary globalization is the most dramatic instance of boundary crossing in history. It involves economics, science, technology, culture, religion, politics, and more. Though it has had some positive effects, it has also caused many problems: It has facilitated economic exploitation: Modifying Karl Marx’s evocation to the workers of the world, globalization says: “Capitalists of the world, unite! You have a lot to gain through cheap labor.” Globalization has also led to intercultural penetration, and the displacement of cultures. It is one thing to enjoy Dutch cheese, Belgian beer, French perfume and Argentinean wine, and quite a different thing when a country and landscape are inundated with the signs and symbols of alien cultures.

**Diversity, Multiculturalism, and Boundary Crossing**

There is extraordinary diversity in the variety of substances that have emerged from barely a hundred chemical elements. There is diversity in the flora and fauna that throb with life and beautify the world. There is also diversity in the cultural expressions of the human family as well. As Antoine Delamotte noted, diversity is a very pleasant thing. Uniformity leads to boredom. [C’est un grand agréable que la diversité... L’ennui naquit un jour de l’uniformité.”] From the dawn of history, humanity has split itself into countless groups speaking different languages, embedded in different cultures, affiliated to different religions and sects, and deeply bound to different historically and racially conditioned loyalties. Each group was, and to a large extent still is, like a garden unto itself, providing security, excitement, and enrichment to those within it.

Multiculturalism was a crowning affirmation of the twentieth century. Its thesis is quite simple: That it is important to nurture, appreciate, and respect all cultures. Associated with this is the sense of belonging to the world at large. In the 17th century Christiaan Huygens proclaimed that the world was his country and science his religion. [“De wereld is mijn Land, Wetenschap mijn Godsdienst.”] Long before that in the mid second century the Latin playwright Terence declared, “I am a Man: I deem nothing pertaining to Man as foreign to me.” [Homo sum humani nil a me alienum puto.”] Many centuries ago, the Tamil poet Kanian wrote: “It is all my town, where I'm in. Whoever they are, they're also my kin.” [“yAdum UrE yAvarum kELIr.”]

And yet, it is no secret that there are many people who speak and write against multiculturalism today. Why is this so? Why is such a beautiful, noble, and enriching idea receiving a bad name and reputation sometimes? It turns out that multiculturalism has been playing a silent role in the conflicts tormenting the world today, because of boundary crossings and non-crossings also. Contrary to what one could have hoped, diversity has not lead to harmonious co-existence and meaningful interactions. From the most ancient times, groups have fought with groups, nations with nations, and religions with religions. It is not surprising that multiculturalism which is now touted as the mind-freeing model for the modern world, is also creating conflicts within societies. Few idealists who initiated the idea would have expected this.

Cultures are no longer islands of closed systems with only occasional glimpses into alien varieties. In today’s world, cultures rub shoulders on the global arena in a hundred different
ways. TV screens bring into living rooms images and actions of distant peoples and exotic lifestyles. We are no longer dealing with interactions between cultures, but with interpenetration of cultures, often with superficial knowledge of one another. It is too early to foresee what the long-range consequences of all this will be. Goethe said, “Culture which smooth the whole world licks, also unto the devil sticks.” [“Auch die Kultur, die alle Welt beleckt, hat auf den Teufel, sich erstreckt.”] Actually, it is the devil that sometimes sticks into cultures.

One important reason for all this is that the commendable idea of multiculturalism did not emerge under happy circumstances. It arose in a context in which minority populations in some countries began to protest their status as second class citizens and denied basic rights and looked down upon. This circumstance gave rise to movements in which marginalized and disenfranchised groups began to demand equal recognition and the same respect and regard that the majority reserved for itself.

Such demands slowly led to the idea that every culture deserves to be treated with dignity. Associated with this is the demand for reparations for past mistreatments. These are some of the factors that injected unpleasantness in the exercise of multiculturalism. This situation within countries soon spread to the world at large.

**Western Hegemony**

During the past four centuries, European imperialism and colonization had affected the economies and sovereignty of many peoples on earth. One may wonder why negative attitudes persist more than half a century after European colonialism was dismantled. As Laurent Testot summarized it, the little peninsula of Europe, off the immense Euro-asiatic continent, dominated the world economically, politically, and militarily from the fifteenth to the twentieth century. [L’Europe, petite péninsule excentrée de l’immense continent eurasiatique, a dominé politiquement, économiquement et militairement le monde, du XVe au XXe siècle.] A similar situation had prevailed several centuries earlier during the cultural, religious, and imperialistic expansion of the Islamic Arabia. But once the countries into which the dynamic Arab civilization had intruded were fully assimilated within its religious framework, the people ceased to feel any animosity towards the erstwhile invaders: indeed, they became one and the same people. With European imperialism the situation was different. Few of its victims were assimilated into European culture or religion before Europe retreated. As a result, international multiculturalism has become somewhat tarnished, because it includes decidedly negative attitudes towards Western culture in many parts of the world.

Indeed, though much of the world has gained political freedom, the hegemony of the West persists in the global village. First, there is its continuing greater military and economic strength. The navy and armed forces of some Western countries have their imposing presence in distant corners of the globe. The economies of the world are still tied to the power and performance of Western nations. It is the West that is dominant in international organizations. It is the West that dictates whether some nations can or cannot have nuclear weapons. All this is slowly changing, and all the brashness that the West has been enjoying this long will likely move to Asia and elsewhere before the century is done. Until then, resentment towards the West will color the perception of the Non-West towards the West.
Then again, the cultural hegemony of the United States is obvious in the McDonalds and Coca-Colas that are seen everywhere in the world. More importantly, the penetration of France and England in Africa and Asia in the nineteenth and twentieth centuries has resulted in the dominance of the French and English languages along with the framework of democracy, gender equality, and human rights.

Thus, boundaries between cultures have become a semi-permeable membrane through which scientific knowledge and technology, also life-styles and modern enlightenment values and comments and judgments on cultures flow from the West into the Non-West; and rarely in the other direction. This has created an asymmetry which has been the source of considerable tension in the world.

These are powerful factors in the reaction to modernism which is mistakenly identified with Western culture. Within the matrix of Western culture too there were and still are staunch dissenters to the culturally uncomfortable consequences of the onslaught of science and Enlightenment which resulted from worldview boundary crossings. Traditional Christianity suffered as a result of the Enlightenment, but it has also benefited considerably in being relieved of its excessive zeal and intolerance of deviations from main-stream doctrines. Inquisitions and sectarian wars are no longer current religious modes to affirm or safeguard faith, and have become embarrassments of the past. It is likely that similar changes for the better will occur in other religion-guided cultures also.

**Enlightenment and Cultural Insensitivity in Boundary Crossing**

It is not yet recognized by vast numbers of people in many parts of the world, both secular and religious, that many of the values that have ensued from the Enlightenment are as universal as the results of current physics, biology and cosmology: their universality transcends race and religion and national boundaries. E. O. Wilson rightly observed that “by any reasonable measure of achievement, the faith of the Enlightenment thinkers in science was justified.”

Many nations unabashedly embrace the United Nations Charter and the Geneva Convention when these ensure their own safety and security, but not all these nations are as receptive to religious tolerance, gay rights and accommodation of minorities. In other words, not all the fruits of the Enlightenment have been able to cross all cultural boundaries.

With the dawn of the modern era in the eighteenth century some European scholars began to probe into Non-European histories as well. Their dedication led to the discovery of many facets of ancient cultures that had been forgotten by the world at large: such as the code of Hammurabi, hieroglyphics of ancient Egypt, the Indus Valley civilization and Ashoka’s edicts. All this was boundary crossing from culture to culture and from historical era to historical era.

When European scholars cast their investigative net into the sea of world religions they discovered abundant cultural treasure chests in the world, but the findings were only as scripts and relics, exotic practices and inscrutable worldviews, interesting and entertaining, informative and sometimes insightful. But the investigators seldom had the feelings and emotions intrinsic to a culture. As Thomas Babington Macaulay observed, “a history in which every particular
incident may be true may on the whole be false.” When it comes to analyzing sacred works, sound scholarship is like the firmness of bones, while appreciation and sensitivity are like flesh and blood. Without the latter the former is merely an ugly skeleton: morbid and monstrous, lifeless and lamentable. With the latter, scholarship becomes robust, living, and admirable. When iconoclastic hordes desecrate the sacred symbols of another religion or when a Western scholar says that the Bhagavad Gita is a dishonest work, the consequences are not pleasant.

Thus, though the goal of such endeavors was largely to unravel and understand cultures other than one’s own, the task was more difficult that it would seem. Histories tend to be ethnocentric. It is difficult to approach and react to a different culture without the bias that comes from affiliation to one’s own, and it is well-nigh impossible to fully understand, let alone appreciate, a culture in which one hasn’t lived and which one hasn’t assimilated. As a result, though there can be little disagreement about the basic facts and documents that one uncovers, their interpretations tend to be very different from what the practitioners and the inheritors of the culture have in their hearts and minds. As an African proverb says, “Until lions have their historians, tales of the hunt shall always glorify the hunters.”

The works of the pioneering scholars were applauded by fellow Europeans. But as a result of the planetary sweep of English and French, people in Asia, Africa and the Arab world came to read what had been and are being said about their cultures. Now a tide of resentment and rebuke has come bursting into the sanctuaries of Western academia from where the probes had been conducted for well over a century, because some interpretations sounded crude and contemptuous to people of the cultures commented upon.

Scholars in the Western world who offer their perspectives on Non-Western traditions are beginning to realize that anthropological commentaries on living traditions are not unlike those of an entomologist on a bee or a grasshopper. In crossing cultural boundaries one has to be careful about what one writes and publishes. It may be noted in passing that what is written about Western culture in Non-Western languages are accessible to only a few Westerners, and therefore do not provoke strong public reactions in the West.

It is difficult for one who is not an active participant in a culture to be empathetic to all that it entails, especially its experiential dimensions. This is not to say that outsiders cannot gain some knowledge of important aspects of a culture not one’s own or that they cannot shed new and insightful light on other cultures. But what cannot be expected even of a scholar with impressive erudition is heart-felt resonance with what is being commented upon.

Boundary Crossing through the Aesthetic Dimensions of Culture

In the light of all this it would be helpful to consider culture as consisting of three distinct, but sometimes overlapping, components: the aesthetic, the ethical, and the scientific. First there is the aesthetic dimension. It refers to all that provides enjoyable experiences. Language is an important aspect of the esthetic experience. There is a magic in every language that lights up culture at the most fundamental level. People, who have strong aversions towards other cultures because of political or religious reasons, will be transformed if they learned the other’s language
and begin to read or hear their poetry. There is no more effective way of crossing cultural boundaries that keep us in separate compartments.

The aesthetic dimension of culture includes poetry and literature, art and music, philosophy, feasts and festivals. Beauty has no age, says a Portuguese proverb. Whether it is Cherokee or Catalan, Mongolian or Inuit, there are countless legends and lore, music and dance in the thousand tongues that have emerged. Every one of these is a precious gem in humanity’s collective treasure chest. They have come from centuries of spiritual evolution, given life by countless thinkers and creators everywhere. Boundary crossing occurs when one takes the time and makes the effort to acquire even a minimal acquaintance with another language.

Every language is like a musical instrument. The poets in the language are like virtuosos who can create the most magnificent music with them. When we acquire even the rudiments of a language not our own, it is as if we are already stepping to an alien orchard replete with luscious fruits. Every reader looks for and gets something from a poem.

We may detest Nazis, but who can be untouched by a Goethe or a Heine? We may be unhappy about Iran’s politics, but Omar Khayyam and Rumi will make us love the people. When one hears the serene chant of the Holy Qur’an in Arabic, we forget suicide bombers and admire the beauty of the language. Indians who hate the British and Algerians who hate the French for the colonial occupation love England and France when they read Shakespeare and Swinburne, Rabelais and Racine. Anyone who has read Kamban or Tiruvalluvar in the original cannot fail to fall in love with Tamil. Likewise in every cultural tradition of humanity. In the words of Octavio Paz, “Every poem is unique. In each work there throbs to a greater or lesser degree, the whole poem. Every reader looks for something in the poem.” [“Cada poema es único. En cada obra late, con mayor o menor grado, toda la poesía. Cada lector busca algo en el poema.”] Thus, in a peculiar way, poetry brings us all within the same boundary of humanity’s visions. That is why boundary crossing through language and poetry is enormously rewarding.

Religion, Ethics, and Boundary Crossing

Up until the modern era, the ethical framework of cultures was constructed largely from the religion of the people. Primarily traditional religions contributed to the values that guide and inspire the people. The rise of modern science and Enlightenment separated ethics from religion, leading to a switch from the local and the religious, to the secular, the international, and the universal. Traditional ethics related to how one should behave towards fellow human beings; modern ethics include how each group should treat members of a different group. Thus arose notions like human rights and gender equality. The cultural boundary crossing from the pre-modern to the modern is largely determined by to what extent the ethical framework of a people as reflected in the laws of the nation transcend racial, religious, and sectarian boundaries.

In other words, an important boundary crossing occurs when our moral guideposts leap across the historical divides that arose when different peoples and cultures evolved ethical frameworks based on local social cohesion and security, inspired by scriptural texts. Principles of universality go against the parochial worldviews in which people are placed in different hierarchical classes, women are assigned secondary roles and compelled to dress-codes promulgated by male
moralists, particular races are seen as privileged or chosen, and the promise of redemption and entry into God’s realm is reserved only to those who promise allegiance to particular prophets and historical personages as redeemer of all of humanity.

One way or another, boundary crossing on the ethical plane from the local to the universal is essential for the betterment of the human condition.

**Trans-religious Perspectives**

Fortunately, even granting that there are passages in the Scripture of every religion that presumes a privileged pinnacle for itself, every major religion has at its core perspectives that will enable its practitioners to make the transition from the stifling air of constraining convictions to the fresh and healthy atmosphere of pan-human values. In every religious tradition, there are awakened thinkers and responsible leaders who lead the people along enlightened paths. Even if not always exact, it is possible to interpret many passages from time-honored scriptures to give them enlightened meanings. Such interpretations may be declared as lies by fundamentalists, but, as Jacinto Benavente said, it is worth it if this will serve a noble purpose. [“Non è una cattiva mensogna quando difendiamo con questa una buona verità.”]

The Hindu Vedas pray for the welfare of humankind. The Judaic Mishnah stresses the importance of both the individual and the equality of one and all, and that every one has a God-given sacred right to life. Christian values and respect for Man as the Image of God are implicit in modern secular humanist movements. We read in the Holy Qur’an: “Be steadfast in your devotion to God, bearing witness to the truth in all equity; and never let hatred of any one lead you into the sin of deviating from justice. Be just: this is the closest to being God-conscious.”

**Understanding Natural Phenomena: Science and Boundary Crossing**

The third dimension of culture pertains to understanding and interpreting natural phenomena. All through history, keen thinkers have been struck by the myriad aspects of the world, from the star-studded sky to rainfall and rainbow. They also reflected on the perennial puzzles like when, why, and how the world came to be, the origin of humans and the destiny of it all. All this gave rise to fascinating ancient science.

With the emergence of modern science, cracks began to develop in a hundred contexts in age-old and time-honored visions of how life or the world came to be. But as Galileo said, we are not obliged to believe that the same God who has given us senses, reason and intelligence wanted us not to use them. [“Io non mi sento obbligato a credere che lo stesso Dio che ci ha dotato di senso, ragione ed intelletto intendesse che noi ne facessimo a meno.”]

Modern science, with its drastically new methodology in the grasp of perceived reality, brought within the scope of human understanding a thousand aspects and elements of the physical and biological world that had escaped generations of humankind. And while its results called for drastic revisions of ancient worldviews, they also cemented humanity in one global
framework in which peoples of all races and religions, creeds and convictions, work together as members of one global inquiring family who are united in spirit and in methods in their quest to unravel every puzzle and problem in the natural world that teases the alert human mind. Science thus serves as the greatest boundary crossing factor in the modern world.

**Religion-Science Boundary Crossing**

The challenge is to cross the boundary from the sanctified framework of tradition with deep roots in cultural consciousness into a paradigm where phenomena are consequences of the laws of nature, where miracles have no place, where there seems to be no purpose or design in the workings of the world, and where the origin had no creator and the end no judgment for reward or punishment. The view that we humans are accidental glitches in an insignificant niche in a callous universe, as affirmed by modern science, imposes a psychological unease, an existential discomfort, and a spiritual void that stand as barriers to this most urgent boundary crossing.

But it would be intellectually dishonest to repudiate the findings of modern science. Indeed, if we did that, if every group in the world chooses to cling on to its own religious-ancestral interpretations, it would also throw us back into the multiple worldviews of the ancient world. Goethe reminded us that those who possess science and art also have religion, and those who don’t have these, have only religion. [“Wer Wissenschaft und Kunst besitzt, hat auch Religion; Wer jene beiden nicht besitzt, der habe Religion.”] Indeed, they have only mindless religion.

The idea that science and only science has validity, and can solve all our problems is one of the major hurdles in boundary crossing. This precludes all kind of metaphysics, for it sets out a Platonic gate which one cannot cross unless one is science-savvy. Indeed, other disciplines have similar constraining and constrained visions.

On the other hand, the insistence that the scientific mode of comprehending the world is the only matter of interest there is to being human, as also indifference to the spiritual needs of people and disdainful dismissal of all religious sentiments would be detrimental to our efforts to make this a more harmonious world where feelings and emotions play as crucial a role, not to say more powerful, as the framing of every human experience in a logical straight jacket. In other words, one major obstacle to science-religion boundary crossing is scientism which says, in the words of Félix Dantec, that science and only science will resolve all meaningful questions. [“Je crois que la Science et la Science seule résoudra toutes les questions qui ont un sens.”] The other major obstacle is religious fundamentalism which insists on interpreting scriptures literally.

Perhaps a practical way of accommodating both the stringent requirements of modern science for assigning truth-values and the call of faith to recognize an omnipotent, omniscient, and omnipresent Almighty at the root of it all would be for scientists to grant that science is concerned only with the world such as it is, and not with what or who might have initiated it all; and for religion to allow that the Creator chose to make this a world that would be interpreted some day by the probing human mind through the methods and metaphors of science.
Boundary Crossings in Ideological Contexts

Ideological conflicts arise between different programs and philosophies for solving the problems of society and of the world, as also for achieving spiritual salvation. How is one to establish social justice, economic prosperity and legal equality, for example? Thus we have conflicts between capitalism and communism, authoritarianism and democracy, universal freedom and theocracy. These are frameworks with well defined boundaries. On the spiritual plane, there are differing routes for everlasting joy: nirvana or svarga, the pearly gates of heaven or jannah, etc, and different messiahs and saviors and prophets and gurus too to lead us to salvation. Boundary crossing here is not just difficult; it can sometimes become dangerous, for it involves the sin of apostasy. In these instances, boundary crossing does not require movement beyond one’s own boundaries, but rather in calls for efforts to understand the perspectives of others, and to develop some respect for them.

Concluding Thoughts

We live in a complex world, compartmentalized both naturally and artificially. So boundary crossings become inevitable in a variety of contexts. Sometimes we avoid boundary crossings, or are averse to them because they call for effort, even hard work, and they may make life even more complex. Or again, boundary crossing may result in the abandonment of things we hold dear or sacred. Interfaith movements call in question our deepest beliefs. The opening of borders to allow international boundary crossings has economic and cultural impacts. It poses risks to the security and integrity of nationally defined cultural values and patterns.

I would like to close with a quote from Friedrich Schiller who wrote in the late 18th century that

As soon as our expanded experience and precise thought led to the division of the sciences, and the complex machinery of the state made separation of social classes and tasks more rigorous, the close link with nature was broken and a pernicious struggle sowed discord in a harmony that existed among the various forces.

That prescient reflection seems to be even more valid today. Serious people of goodwill reflect on the extraordinarily complex web of confusions and confrontations that have tossed humanity into its present predicament. We need new and hitherto unconsidered perspectives to meet the challenges that have arisen so unexpectedly and indeed abruptly in human history.
Networks of Agape and Creativity: Learning Across Boundaries and the Calling of Planetary Realizations

Ananta Kumar Giri

You long to wander far and wide and are preparing for a speedy flight; be true to yourself and true to others, then even narrow confines will be wide enough. (Goethe)

The network of agape involves a kind of fidelity to the new relations; and because we can all too easily fall away from this [...], we are led to shore up these relations; we institutionalize them, introduce rules, divide responsibilities. (Charles Taylor, 2009, p. 739)

“Learning to be” is also a permanent apprenticeship in which teachers inform students as students inform teachers. The shaping of a person inevitably passes through a transpersonal dimension. (Basarab Nicolescu, 2002, p. 136)

Introduction and Invitation

Education helps us realize our potential as well as that of our cultures, societies and the world when it moves from narrow confines within closed walls of classroom and given boundaries of many kinds and embraces the joy of learning with the wider and uncharted paths and rivers of life in this vast world of ours. From the dawn of humanity, seekers all through have been animated by this quest for learning beyond the boundaries and across. This has led to travels and seeking across the roads and rivers of life. Seeking souls and institutions have moved in this world with a passion for meeting, learning together and embracing each other for the light of knowledge, mutual illumination, shared enlightenment and co-realizations. The present discourse of international education as well as internationalization of education is part of this deep yearning of humanity. Such a yearning is realized with facilitating institutions as well as networks. We need creative institutions which foster learning across borders and creative networks which bring new energy to institutions which many times become imprisoned within a
logic of self-justification, self-valorization and closure.\(^3\) We need creative institutions and networks for fostering learning and inquiry across boundaries. Our networks are not just mechanical extensions of existing institutional logic but become networks of agape and love where the seekers build bridges by being bridges. Learning across boundaries is facilitated by seeking institutions and networks where leaders and participants become students of life and friends of the world.

**Networks of Agape and Creativity: Being Students of Life with Life and the World**

Threads that connect and weave us together are threads of agape. Agape is love as it is understood in Christian tradition. It is not passive, it is love in action and infused with eros.\(^4\) Agape is also understanding.\(^5\) Recently, secular philosophers such as Jürgen Habermas as well as religiously inspired thinkers, such as Charles Taylor, have been urging us to understand the significance of agape in our lives, especially when we are devoted to mutual moral argumentation, co-learning and flourishing.\(^6\) Agape has a dimension which overflows acceptable boundaries and help us meet each other and the world unconditionally. Agape facilitates genuine and pregnant meetings, meetings which mother new possibilities in self, other and the world. These meetings and encounters start with creative selves and then overflows into existing institutions.\(^7\) These institutions despite their logic of closure feel the breeze of opening and create new institutional spaces for facilitating such creative encounters. We need to cultivate agape in our act of networking among institutions as well as individuals. This is particularly relevant for

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\(^3\) In his essay, “Institutions and Networks,” Andre Beteille shares with us: “Networks of interpersonal relations play an important part in the linkage of different institutions with each other” (Beteille, 2010, p. 116). Furthermore, (cont’d)

many persons now find networks better adapted to the demands of a rapidly changing world than institutions whose adaptive capacities are constricted by bureaucratic and political pressures. Networks provide greater flexibility to individuals, but they also demand greater individual initiative. (Beteille, 2010, p. 125)

\(^4\) As Sudhir Kakar writes: “Agape is neither worth receiving nor worth giving if it is without eros. Real agape must be infused with the passion of the eros” (Kakar in Kakar & Jahanbegloo, 2009, p. 85).

\(^5\) In a recent essay, Mihir Shah (2010) presents us such an understanding of Agape coming from Martin Luther King Jr.

\(^6\) In his work on moral consciousness and communicative action, Jürgen Habermas (1990) urges us to realize the significance of agape for both and calls for integration of “cognition, empathy and agape” (Habermas, 1990, p. 182). Charles Taylor (2009) talks about networks of agape where networks are different from categorical grouping: “[...] it is a skein of relations which link particular, unique, enfleshed people to each other, rather than a grouping of people together on the grounds of their sharing some important property (as in modern nations, we are all Canadians, Americans, French people; or universally, we are all rights-bearers etc.) (Taylor, 2009, p. 739).

\(^7\) What Jean-Luc Nancy (2008) writes about processes of overflowing can help us understand overflowing accompanying genuine encounters and meetings:

 [...] Politics assume[s] a dimension that it cannot integrate for all that, a dimension that overflows it, one concerning an ontology or an ethology of “being with,” attached to that absolute experience of sense and passion for sense for which the word sacred was but the designation. (p. 5)
the Grundtvig-Kold tradition of learning and international education from Denmark (cf. Das, 2007).  

In this journey of learning across boundaries, we become students of life with life and the world. In Denmark in the middle of the nineteenth century, Grundtvig and Kold had striven to build schools of life in place of dead Latin schools. One significant aspect of this school of life was the opportunity to build friendship across social division and boundaries. Over the years, folk high schools of Denmark have become international and one meets students from all across the world not only in international folk high schools such as International People’s College in Helsingør but also in other schools in remote corners of Denmark. In such schools there is an ideal of being students of life a flame of which we find burning in some teachers and students.

“Who am I?,” “Who are you?” are perennial questions of life. Now for a long time, when I am asked, “Who are you?” I say: “I am a student of life.” Then immediately, the questioner comes back: “Oh, I am also a student of life.” Out of our many identities of life, an identity such as “student of life” is a broad, seeking, and embracing one where one chooses in solidarity with Nature, others and Divine to be with the roads and rivers of life and continuously learn. Love and labor of learning and inquiry become part of our vision and practice as students of life. Networking for learning across boundaries calls for such vocations of being students of and with life.

In the roads and rivers of life as students of life we meet others who, many a time, come to us as a God without a name. Such meetings transform our lives. In his poem *Morte d’Arthur*, Tennyson has written, “More things are wrought by prayer than this world dreams of.” Holding the hands of Tennyson, we can also sing: “More things are wrought by meetings than the world can dream of.” Networks emerge out of such pure meetings of souls and are not just extensions of existing institutional programs. Even when we are part of existing programs of networking, we need to bring our own soul, self and the very being of passion, prayer and imagination to these networks.

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8 As is well known, Grundtvig was a creative pastor, poet and father of modern Danish renaissance. Kold himself had a life-changing turning point in his life when he heard his teacher Peter Larsson Skrappenberg at the Teacher’s Training College that God loves us unconditionally (see Das, 2007).

9 During a visit to Testrup folk high school near Aarhus, I saw such flames of aspiration in some students and teachers, especially in the inspiring Principal Jørgen Karlsson. I sat in a philosophy class and after this I had composed the following poem:

A Student of Life I am
There is a dance of colors in my eyes
But I have questions, not only kisses, in my lips
Questions flow In my wings
and flowing hairs
Towards the Sky and Ocean
Questions of Life, Questions of Relationships
Mediating Between
And meditating With
Moments and Eternity
Highlander is a place of meeting in Tennessee. It was started by Myles Horton in the highlands of Appalachian mountains in the 1930s who was inspired by the way seeking souls meet in the folk high schools of Denmark (cf. Horton & Freire, 1990). From its birth, Highlander has been a mothering place where people involved in social change can meet. In the small auditorium of Highlander there are rocking chairs. Participants of social movements come and sit in such chairs, share their experiences with each other and learn together. In the 1930s, participants of workers’ movements met in Highlander. In the 1940s and 50s, it is the fighters of civil rights movements who met together in Highlander. Both Martin Luther King, Jr. and Rosa Parks joined these meetings and sat in those chairs of sharing which then inspired them to take a different walk in their paths of lives. Rosa Parks tells us that, in taking part in such meetings, she could overcome her fear which then planted the seed of saying no. This then emboldened her to refuse to give up her seat in a bus in Montgomery. If saying “no” is an important part of becoming a subject as Alain Touraine, the heart-touching sociologist of our times, tells us, taking part in such meetings as organized in Highlander, provides a momentum to the process of subjectivation of the participants (cf. Touraine, 2007).

While creating networks for learning, we can learn with such stories of meetings, encounters and transformations. For this we would have to transform our existing institutions as well as methods and modes of networking. While making our institutions sites of experimental creativity, we would have to make networks more creative by ourselves being engaged in creative boundary-crossing of body, self and language.10

Our networks then become networks of agape and creativity. Here we can walk with many inspiring co-walkers of life and history. We can walk, for instance, with two students of life, Desiderius Erasmus of Rotterdam (1466-1536) and Chitta Ranjan Das (1923-2011). Erasmus was not only an incorrigible traveler but also a passionate letter writer. He met princes as well as commoners walking on foot and wrote letters to many sharing with them the challenge of building peace and reconciliation in a world of hatred and propensity to war. Erasmus’ networks of agape and creativity created a republic of letters as a counter and alternative to the existing republics of hatred and war.11 Similar also is the seeking and striving of Chita Ranjan Das who like Erasmus travelled far and wide and wrote letters to countless radiant souls he met on the way (cf. Giri, 2011). Chitta Ranjan became a living thread of energy bringing many aspiring

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10 Here I wish to share my experience of travelling across the world. When I meet people, I request my fellow beings to share a poem or a song which then opens up many realities and possibilities. I spent a month in China in August-September 2009. I began with Kunming, the capital of the Yunan province in Southern China. I learnt four words (nihaho for saying hello, sese for thank you, piolian for you are beautiful and changama for singing). The last two words created new sharing and possibilities. When I met people I invariably requested them to changama, to sing. Initially there was always a lot of reluctance but it slowly gave way to sharing, singing and loosening of boundaries.

11 Erasmus wrote letters for peace. For example, in his Complaints of Peace, Erasmus writes:

Peace speaks: If it were to their advantage for men to shun, spurn and reject me, although I have done nothing to deserve it, I would only lament the wrong done to me and their injustice; but since in rejecting me they deny themselves the source of all human happiness and bring on themselves a sea of disasters of every kind, I must shed tears rather for the misery they suffer than for any wrong they do me. I should have liked simply to be angry with them, but I am driven to feel pity and sorrow for their plight. (Erasmus, 1986 [1516], p. 293)
souls and institutions together. Chitta Ranjan also worked with the folk high school movement in Denmark as well as built folk high schools in Finland. In his own experiments in co-learning

12 Chitta Ranjan is a friend of the world. But the world to him was not impersonal, he cultivated deep personal friendships with innumerable souls around the world—Odisha, Kerala, Denmark, Finland, Germany, USA and around. Ramesh Ghode taught Sociology at Hilop College, Nagpur and in the preface to the collection of letters that Chitta Ranjan had written to him and he has edited, Rameshda tells us:

We ‘discovered’ each other in the All India Conference of Sociology Teachers from Rural Institutes all over India. [...] The conference was held in the last week of November, 1960 in Rural Institute, Amravati [...] I was then a student of 2nd year [...] I had a chance to speak on a sociological concept of social disorganization in that conference. After having delivered my lecture on the concept all the eminent scholars of Sociology cross-examined me by asking pertinent questions, including Professor Chitta Ranjan Das. I could feel the depth of empathy in his eyes. During that short encounter with him, he asked me several questions to glean my personal profile, family background and interest in academic pursuits. I frankly shared all the personal information with him.

I perceived in him a Guru, a preceptor and an elder brother who would guide me in academic pursuits. As luck would have it, he immediately said in a soft tone, “Ramesh, do not call me Sir, you can call me ‘Dada,’ and I mean it in real sense of thought and action.” Hearing his words I was spellbound and could not believe myself. I saw in him a Guru, elder brother, a friend, philosopher and a guide. I was convinced within that he would help me not only to tide over all the obstacles in my academic ventures but direct me in the right path of life too. Our camaraderie and kinship commenced and it was to be a sincere and life-long commitment. (Ghode, 2010, pp. iii-iv)

K. Viswanathan, the founder of Mitraniketan, Vellanad, Kerala and a great Gandhian and social activist of India shares with us the following:

Chittada is a genius in many fields of human development. My acquaintance with him goes back to 1940s, when I joined Shantiniketan as a young student [...] We got to know each other better and from this time stems our friendship. He, too, was a habitual wearer of Khadi and he also took up spinning. Living in the hostel himself, he also looked after the newcomers, helping them wherever he could to adjust themselves to the routine of life in Shantiniketan. He was very gentle, simple, friendly and soft-spoken and even at that age he had a scholarly look.

[...] In the formative period of my work in the village of Vellanad, he was kind enough to spend some time with our group. Later, some of his students, who were fortunate to study under his guidance, also visited me in Mitraniketan (the name of my Centre) and from the impression I gained of them, I could judge how valuable his influence on them was as a guide, a friend and philosopher and how it moulded their lives and outlook. When I started my programme of integrated development education in Mitraniketan, I longed very much to have Chittada associated with this work. He has, no doubt, all this time been associated with it and continues to influence us with his thinking and even with his presence, whenever I ask for it and the advice of this silent worker, profound thinker and prolific writer has always been invaluable. I also know him as an excellent letter writer, always very prompt and regular in his correspondence. (Das, in press, pp. 151-153)

Eaghor G. Kostesky who lives in Germany and to whose Ukrainian translation of Gitanjali Chitta Ranjan had written a foreword tells us:

He was not only interested in Europe as an alien country [...] He came to a deeper contact [...] he sometimes even idealized the Europe of his friends, once feeling at Christmas as if he were with them “trying to revive the ever-live inspirations of the birth of Christ, singing round and meditating upon the Christmas tree”, as he wrote to my wife and me (probably in 1966 - the date of that aerogramme is no longer identifiable). “Though the practical and the logical in me induces me to be
in the schools he established at Champattimunda, Osidha, as well as in the subsequent integral education movement, he brought different streams of transforming learning together—Gandhi, Tagore, Sri Aurobindo, Grundtvig and others (see Das, 2012).  

In networking for learning and inquiry across boundaries, we can walk with fellow co-walkers such as Erasmus and Chitta Ranjan who made their own lives threads of agape and creativity. We can also thread with each other and weave together by being networks of agape and creativity.

**Internationalization of Education: Institutional Creativity and Networks of Creativity**

In recent times, there is much talk about and some concrete moves towards internationalization of education. This is happening through exchange of students and teachers. In the European Union, there is a program of exchange of students quite aptly named after Erasmus. But in internationalization of education, most of the time, the flow is usually from South to North. There are many scholars from India who are teaching in Europe and North America. For American and European students, such teachers bring a new cross-cultural experience of learning and mutual challenging. But compared to this, we hardly see teachers from other countries in Indian institutions. This impoverishes the capacity for learning across boundaries on the part of Indian students.

There are now some creative experiments in international education. One such is the Global Studies Master’s program led by the Institute of Sociology, University of Freiburg in Germany. In this learning program, participants spend a semester at Freiburg and then at two partner institutions in India (Jawaharlal Nehru University, New Delhi), Thailand (Chulalongkorn University, Bangkok), South Africa (University of Cape Town) or Argentina (FLASCO, Buenos Aires). In these moves of teachers and students across boundaries, there is possibly a network of agape and creativity at work, or participants can self-consciously cultivate these more.

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pessimist about how we face in our world and with one another, my heart persuades me to believe in it and heartens me up to encouragement. This heartening gives me hope, the energy required to live one’s life as a dedication, as an act of supreme and all-embracing identification. And apart from all the institutional gloss and glamour, is not the life of Christ an example of a life offered, a life regained by offering? And can we eliminate hate from the world as long as we do not accept life as an offering? Of course, I do not mean that we have to be fanatics to do that.” (Das, in press, pp. 154-155)

13 Chitta Ranjan founded Jeevana Vidyalaya (School of Life) at Champattimunda, Anugul, Odisha in 1954. Then in the 1970s, he joined the emerging integral education movement in Odisha and played a pioneering role in the building and nurturance of such schools. These schools strive to follow the educational vision and practice of Sri Aurobindo and Mother and impart a holistic education.
Education for Creativity and the Calling of a New Enlightenment: Learning Across Boundaries and the Calling of Planetary Realizations

Education is linked to enlightenment in many ways. European ideas of Enlightenment have influenced modern conceptions of self-formation (what is called Bildung), as well as models and pathways of education in the modern world. To these early European models of Enlightenment Grundtvig and Kold brought the vision and practice of people’s enlightenment which also resonates with the discourse of vernacular Enlightenment suggested by Foucault (cf. Korsgaard, 2008). Through learning and inquiry across boundaries and creative international education we now can bring people’s enlightenment to the world level beyond national borders. This calls for more labor and love of learning through intercultural and transcultural dialogues and planetary conversations. As part of such planetary conversations, we also rethink enlightenment as simultaneously rational and spiritual, individual as well as collective; an enlightenment in which not only rationalist philosophers such as Kant but also Buddha, Spinoza, Grundtvig, Erasmus and Chitta Ranjan hold our hands and help us in new realizations of both creative solitude and soulful togetherness in a world of alienation and fragmentation.

Such education does not aim just at creating global citizenship in a conventional sense; rather, it interrogates available understandings of both globality and citizenship. Learning across boundaries is not just an extension of our identity as citizens of a nation-state; rather it is an unfolding of our vision and practice as students of life. It contributes to planetary realizations. This means that all of us realize that we are children of our Mother Earth, not only human beings but also including non-human beings (cf. Giri, 2013). We are children of our Mother Earth and we are also called upon to be mothers of our Mother Earth. Networks of agape and creativity and manifold learning and inquiry across boundaries help us in planetary realizations and embody our responsibility as mothers of self, other, and our Mother Earth.

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14 People’s enlightenment in Denmark was accompanied by struggle of people for freedom from state control and creation of free and responsible associations, movements and institutions. Thus it helps us to break the link between Statist projects and projects of Enlightenment. For Grundtvig and his followers, it was not enough to change old state institutions into people's institutions; rather new people’s institutions had to be founded, as for instance ‘open’ or ‘free’ schools, ‘free’ congregations, and ‘free’ associations. [...] Freedom cannot ultimately be guaranteed by the state; only the people can secure freedom. And that can happen only with a foundation in ‘popular’ and ‘civil’ society. Open associations [such as free schools, Folk High Schools] were seen as a sign of a voluntary social solidarity, which in turn was seen as the ideal for a grander popular and national society. Willingness to render voluntary and unpaid assistance was thus regarded as the ultimate test of one’s civil virtues.” (Korsgaard, 2008, p. 63)

In order to understand the last point about voluntary sharing of labor, yes this is what happens in Grundtvig-Kold free schools and folk high schools. These schools do get state support but not fully and the participants do share their labor in building and maintaining such schools. Thus voluntary sharing of labor is an important part of Grundtvigian tradition of people’s enlightenment which also resonates with the tradition of Gandhi in as much Gandhi also emphasized on voluntary sharing of labor and building on people’s associations, movements and institutions not dependent on or controlled by the State.
References


Toward a Genealogy and Topology of Western Integrative Thinking

Gary P. Hampson

Abstract: Contemporary integrative thinking such as meta-theorising, integral approaches and transdisciplinarity can be productively contextualised by identifying both a broad genealogy of Western integrative thinking, and also a topology regarding facets of such thought. This paper offers one such genealogical and topological reading. The genealogy involves the historical orientations or moments of Hermetism; Neoplatonism; Renaissancism; the nexus of German classicism, romanticism and idealism; and reconstructive postmodernism. Arising from this, an indication of a general topology of Western integrative thinking is offered (with case studies), one involving objects of integration (such as philosophy and spirituality), macro-integrative entities (such as syncretism), micro-integrative entities (such as creativity and love), integrative “shapes” (such as organicism), and processes of integration (such as intuition).

Key terms: Creativity, Hermeticism, intuition, integral, integrative, love, Neoplatonism, organicism, panosophy, reconstructive postmodernism, Renaissance, spirituality, syncretism.

Introduction

This paper offers indications toward a topology and genealogy of Western integrative thinking. “Integration” here is taken to mean complex integration – somewhat analogous to Kelly’s (2008) notion of “complex holism” – rather than reductive integration (such as that offered by mathematics in physics). Topology points to such aspects as objects of integration, “shapes” of integration and processes of integration, as well as to integrative entities. Genealogy connotes a broad thread inclusive of relatively similar thought pertinent to the context-in-hand. In the current instance, this involves five philosophico-historical attractors, orientations, contexts or moments, namely, Hermetism; Neoplatonism; Renaissancism; the nexus of German classicism, romanticism and idealism; and reconstructive postmodernism. Across these five orientations, the

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2 Genealogy can be regarded either as a peer of topology or as a topological aspect.

3 An alternative term here might be Western “panosophy”— also see Hague (2010)).

4 “Genealogy” here is to infer a sense of lineage (as broadly defined) rather than in relation to a more Foucauldian (Foucault, 1971/1984) usage of the term. This is not to say, however, that there is no overlap between the two uses.
paper explores six topological cases, namely: creativity, intuition, love, organicism, intimate relations between philosophy and spirituality, and syncretism, respectively.

The paper can be understood as an example of “research across boundaries” in that it addresses integrative entities. By their very nature, integrative entities are boundary-crossing through cohering what might be regarded as disparate parts. The paper’s generation of a topology further adds to boundary-crossing in that the topological nodes link various domains. Touching upon a variety of disciplines, the paper also crosses historical time and connects various past perspectives with the present. Of specific note, perhaps, and in line with integral studies generally, is its interest in connections between philosophy and spirituality. Whilst many integral approaches emphasise Eastern spiritualities – including Aurobindo’s yogic context and Wilber’s emphasis on Buddhism – the paper contributes to a rebalancing in this regard by including focus on aspects of Western spirituality. (As it happens, due to the default divorce in Western religion between the exoteric and the mystical, the label “esoteric” is often ascribed to Western mystical spirituality by conventional perspectives).

In addition to the intrinsic value of this exploration, as well as the direct value-adding to integrative theorising of the paper’s topological contributions, it is suggested that the genealogical inquiry can help valorise contemporary integrative approaches by indicating that such contemporary sensibilities sit in relation to previously explored notions. The various historical approaches are also able to provide fresh insights for the contemporary circumstance, and to regenerate meaning through novel content and increased contextualisation.

Boyer’s (1990) scholarship of integration provides the paper’s scholarship modality; it also synergies with the paper’s object of inquiry (integration). Scholarship of integration involves the quest for “new topologies of knowledge” (p. 19) stretching across boundaries in service of meaning enhancement, among other things (Boyer, 1990). This form of scholarship complements the more conventional scholarship of discovery, which focuses on a narrow, tightly-bounded topic. In contrast, the scholarship of integration legitimises a wider, more loosely-bounded area of address.

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5 The scholarship of integration is one of four types of scholarship identified by Ernest Boyer as part of his 1990 report from the Carnegie Foundation for the Advancement of Teaching entitled Scholarship Reconsidered: Priorities of the Professoriate (Boyer, 1990). The other three are the scholarships of discovery, application and teaching respectively. Of all the types, Boyer considered the scholarship of integration the most important (Rice, 2005). Yet it appears to have had the least uptake by the academy as an overarching construct (Braxton, Luckley, & Helland, 2002; Rice, 2005). David Scott (2005) suggests that this is because it requires integrative epistemologies such as found in the emerging discourses of integral and holistic studies—a relatively rare occurrence.

6 Here necessitating a longer-than-usual reference list: it would be judicious for a transdisciplinary or cross-boundary work to (in effect) satisfy the conventional requirements of each discipline etc.. *Ceteris paribus*, multiple disciplines could thus produce a longer list than would be necessary for one discipline.

7 According to Boyer (1990), a key purpose of the scholarship of integration centres around meaning enhancement. He indicates that scholarship of integration scholars are those “who give meaning to isolated facts” (p. 18) with a view to “illuminating data in a revealing way” (p. 18), effecting the possibility of “more comprehensive understanding” (p. 19). Noting that “specialization, without broader perspective, risks pedantry” (p. 19), Boyer also indicates possible purposes of the scholarship of integration as including the furthering of authenticity and the quest for wisdom.
To achieve balance between breadth and depth, certain “gap diving” (Roy, 2006) is enacted—here, effected by the six case examples. The particular scholarship of integration sensibility enacted in the paper can be understood in relation to Gangadean’s (2008) deep dialogue, Montuori’s (1998) creative inquiry and Giri’s (2002) creative transdisciplinarity. Additionally, in light of the postconventionalities of poststructuralism, reconstructive postmodernism and complexity theory, moves toward due openness, plasticity and complexity are in order—in a variety of ways.

Firstly, the paper acknowledges the wiles of language, both regarding its inevitable limitations (including the paper’s restriction vis-à-vis Anglophone discourse), and also its generative delights. Rather than plainly representing the material and noetic worlds, it acknowledges that text re-presents them. As Heidegger (1927/1962) indicates, language simultaneously reveals and conceals. Apropos, construct-awareness (Cook-Greuter, 2002, 2005) is important. A danger of “topology,” for example, lies in the possibility of undue technicism and simplification: nodes and connections might be imagined as simple, homogenous units in a heterarchical plane; similarly, “genealogy” might carry too strong a sense of sharply-defined “blood line,” an undue implication of origin or of progressive development (rather than varied change). In contrast, the paper offers a relatively fuzzy conceptualisation of both topology and genealogy within which rich, complex identities carry their own topologies, topographies, tapestries, tensions. Evolution should also be understood as allowing for regressions and diversions as well as progressions. Similarly, “shapes” encompasses the more agentic idea of habits (Küpers, 2011) so as not to fall prey to inapt static conceptions. Even the term-idea, integration, has its dialectic: the Other which it implicates involves disintegration, fragmentation—even here one might note that from – Armstrong’s (2003) reading of – the integrative perspective of the German Romantic, Friedrich Schlegel: “the fragment embodies the system’s dispersal from within” (p. 30). From a different direction, construct-awareness can also offer new possibilities such as the paper’s extension of reconstructive postmodernism to embrace both contemporary integrative approaches such as Wilberian integral theory and certain insights from deconstructive postmodernism (albeit acknowledging inevitable contestabilities in such gathering) (Hampson, 2007) in addition to its use by Griffin (2002) and Griffin et al. (1993) and closely-related use of cosmological postmodernism by Gare (2002).

Secondly, the paper’s focus on Western thought is not intended to marginalise the non-Western. Quite the reverse. Its explicit identification points to the paper’s boundedness in this regard; it implicitly calls for the gamut of non-Western approaches to be given their own expression (and consequent interrelations).10

8 The part-novelty of the reiteration signified by “re” here is highlighted by Morin (2005) through his raising of the significance of “re” from prefix to paradigm. The relay of information from signified through signifier is renewed, and is potentially rewarding. Prose’s prosaicism begins to lean more toward the poetic, the poietic (the made), the as-if autopoietic (self-generated), and an acknowledgement of the inevitable play of metaphor/metaphysics (Abbs, 1989) in Reason (Lakoff & Johnson, 2003).

9 Further, it could be conceived both as rhizomatic (Deleuze, 1980/1987) and also as having a dominant attractor, which might be conceived at the beginning (tale of Hermes), end (reconstructive postmodern narrative) or centre (art-e-fact as “re-sounding” the Renaissance).

10 See, e.g. Hampson (2010c) regarding Native American integral education and the significance of classical Islamic thought to Western thinking.
Thirdly, the genealogy and topology offered is intended to be gesticulative and organic—a “rough guide”—rather than comprehensive and contained—an opening to dialogue, supplement, complement, complexification, seeding ideas for further development. It offers one perspective (emerging from interest in integral approaches); others might be similarly insightful,\(^\text{11}\) including those focusing on ecological thought. The rough guide nature of the genealogy also means that only a first level order of relationships are indicated – namely, “positive” harmonics between identified items. This does not imply that these are no further layers. Rather, it should be understood that more nuanced relational levels allow for the numerous contestabilities and involvements of complex systems. It is beyond the scope of the paper to detail such complexities – e.g. the multifaceted relationship between the nexus of German classicism, romanticism and idealism on the one hand, and reconstructive postmodernism on the other.

Fourthly, regarding the identification of an “integrative entity”: How might one identify and understand that which exists? Specifically, does the general conceptualisation pertain in the first instance to relatively small objects which (secondarily) have interrelations (i.e. a type of atomism) or, alternatively, in the first instance to the whole shebang which (secondarily) has \textit{intra}relations (a type of holism)? Perhaps it depends upon one’s perspective; perhaps the composition is rather that of (different orders of) holons (whole/parts), whereby each holon is understood as integrating lower order aspects of it. In this sense, all entities could be understood as integrative. Within certain contexts, however, it might be useful to conceptualise some things as more integrative than others—whether noetic (such as transdisciplinarity) or material (such as the universe). Such judgment is ultimately an art. The discussion below sits in service of this art. It firstly conceives of “integrative entities,” and secondarily suggests these may be pictured as existing at different scales.

Also pertinent is the context from which the paper has arisen, namely, the Research Across Boundaries Symposium, Luxembourg 2010. In this regard, the symposium’s influence in shaping the paper’s references should be noted. Inversely, such symposia can themselves be aptly contextualised through prior integrative thought—from the radical relationality of the Hermetica to Klein’s (1996) work on boundary crossing.

The structure of the paper comprises an introduction to the genealogy, followed by the various topological aspects of objects of integration, macro-integrative entities, micro-integrative entities, shapes of integration, and processes of integration, respectively; for each aspect, case examples stretching across the genealogy are provided.

\textbf{An Integrative Genealogy}

A brief introduction to the five orientations in the Western genealogy of integrative thinking now follows. These comprise Hermetism, Neoplatonism, Renaissancism, German humanism, and reconstructive postmodernism, respectively.

\(^\text{11}\) See, e.g. Hampson (2010c) and Molz and Hampson (2010) for indications regarding \textit{Aristotelian}—including Thomist/Catholic—integral thought.
Hermetism

The term Hermetism is identified by Faivre (1998) as referring to pre-Renaissance address of Hermes Trismegistus, whilst Hermeticism more comprehensively includes the broader range of Western esotericism following Renaissance thought (Hanegraaff, 1998). Hermes Trismegistus is a mythologised character involving a fusion of the Ancient Greek god Hermes and the Ancient Egyptian god Thoth. Goodrick-Clarke (2008) describes Hermes-Thoth as “rather like a Bodhisattva who has attained immortality but remains in the human world as a channel for the divine” (p. 18).

Various texts written between the first century BCE and third century CE—notably the Corpus Hermeticum of the second and third century CE—were ascribed to Hermes Trismegistus (Faivre, 1998). “Hermetism” refers to this literature (the Hermetica).

Key themes include particular relations between human and divine (partnership between humanity and God) that can be described as a form of nonduality (e.g. the world as spiritual), involving holography as metaphor/physics (“as above, so below”), a living universe, and depth (the world as infused with divine symbolism), such that it is possible for the human individual or collective to (directly) regenerate, redeem or transmute themselves toward the divine (alchemy as transformation toward potential); levels of reality are also posited through the notion of spiritual intermediaries (Goodrick-Clarke, 2008).

Jung (1943 / 1970) indicates that Hermetic understanding includes the assemblage of all conceivable opposites—one might say an archetype of dialectics or nonduality. This includes that between ego and id, eros (life, creativity, desire, sexuality) and thanatos (death), passion and reason (Faivre, 1995). In contrast to the dominant modern (post-eighteenth-century) episteme of “solipsism, atomization, [and] incommunicability,” (p. 70) the Hermetic offers “the path of otherness, of living diversity, of communication of souls” (p. 70)—a substantively relational template-sensibility that accords with contemporary (post-mid-twentieth century) academic interest in such items as “relativity, pluralism, polarities, [and] polysemiology” (p. 49): Hermetism as complexly integrative.

Hermetism proved to be a robust stream of thought, forming part of the prevailing theological paradigm in the Middle Ages in the West (and also in classical Islamic civilisation) (Faivre, 1998), even though it was marginalised by Aristotelian scholasticism. As a mainstream interest, it can be evidenced at least as late as Isaac Newton’s prolific output of Hermetic and alchemical writings (Linden, 2003a). Somewhat paradoxically, Newton’s and Kepler’s Hermetic orientation could potentially facilitate a deconstruction of the technicist anti-Hermetic Newtonianism of modernism.

Let us now turn our attention to perhaps an even greater influence in the Western integrative genealogy: that of Neoplatonism.
Neoplatonism

Neoplatonism pertains to spiritual philosophy evolving from the thought of Plotinus (3rd century CE), including the later thinking of such figures as Iamblichus. As the term indicates, a main source of inspiration for Plotinus was Plato, foregrounding Plato’s metaphysical and mystical aspects (Bussanich, 1996). However, it is also the case not only that “the Metaphysics of Aristotle is extensively employed” (Gatti, 1996, p. 11) but that Plotinus’ understanding diverges from Plato’s in significant ways. Stamatellos (2007) identifies, for example, that “Plotinus seems to accept Heraclitus’ position that the everlastingness of becoming is expressed in the form of an endless cosmic flux” (p. 127). Neoplatonism thus supports theoretical approaches entailing creative becoming. This understanding could be identified as (part of) radical Neoplatonism (noting, in this instance, that “radical” etymologically relates to “root”) that may be distinguished from (what might be termed) “traditional” Neoplatonic interpretations in which this is not the case.

In terms of its major schema, professor of Western esotericism, Goodrick-Clarke (2008), identifies that:

Neoplatonic thought is characterized by the idea that there exists a plurality of spheres of being, arranged in a descending hierarchy of degrees of being. The last and lowest sphere of being comprises the universe existing in time and space perceptible to the human senses. Each sphere of being derives from its superior by a process of ‘emanation,’ by which it reflects and expresses its previous degree. At the same time, these degrees of being are also degrees of unity, whereby each subsequent sphere generates more multiplicity, differentiation, and limitation, tending toward the minimal unity of our material world. (p. 21)

As part of this schema, a key Neoplatonic orientation—in some ways analogous to God—is that of the One: O’Meara (1993) describes the Neoplatonic One as “beauty above beauty” (p. 99) whilst Tarnas (1991) identifies that the One “is infinite in being and beyond all description or categories” (pp. 84-5).

12 Noting that traditions can sometimes develop in manners which differ from original impulses.
13 As indicated above, distinction between traditional and radical Neoplatonic approaches could be envisaged, one differentiating between a “traditional” interest in a via negativa (“traditional” Christian) framing (The One as better than The Many, Original Sin, humanity as fallen, the concept of temptation, etc.) and a via positiva (Hermetic / Renaissance / panentheistic / nondual) framing (The One and The Many as both good, Original Blessing, humanity as in participatory dialogue with the Divine, notions regarding freedom and adventurings of the soul, etc.). A dialectic between the two can be seen in the notion that multiplicity leads to both to “the beginning of strife, yet also the possibility of logos, the relation of one thing to another” (Gare, 2005, p. 68). As Gangadean indicates, it is this “relational power of Logos that opens the space-time in which the world, reality, and existence may proceed. It is this infinite relational power of Logos that makes discourse possible” (Gangadean, 2008, p. 132).
14 Gare (2005) traces Neoplatonic interest in number as archetype (through its identification of The One) to Pythagoras. Nonetheless, a differentiation can be made between Pythagoreanism and the range of Neoplatonic relationships to this vector (as per previous footnote).
Aspects of this understanding permeate contemporary integrative thought, including Wilber’s (1995) valorization of hierarchy, intellect and Spirit. In contrast to the Wilberian orientation, however, Tarnas’ (1991) reading also indicates the relevance of archetypes and anima mundi for integrative thought. In keeping with Wilberian integral (and Bhaskar’s (2002) meta-Reality), however, lies Plotinus’ identification of the nondual: “the soul is one with the One” (Rist, 1967, p. 227). Moreover, the One is paradoxical: it is, as Bussanich (1996) indicates, “everything and nothing, everywhere and nowhere” (p. 38). Indeed, Bussanich continues that “the One is the center of a vibrant conception of reality many of whose facets resist philosophical analysis” (p. 38). This points to the transrational aspect of Neoplatonism: “In Plotinus’ thought, the rationality of the world and of the philosopher’s quest is but the prelude to a more transcendent existent beyond reason” (Tarnas, 1991, p. 84).

As with much Ancient Greek ethical theory, Neoplatonism carries a normativity in the form of well-being or “eudaimonia”—“that which makes life satisfying, successful, complete” (O’Meara, 1993, p. 100): specifically, it holds an interest in spiritual emancipation and its possibility for humanity (Bhaskar, 2002; Tarnas, 1991), notably through “the quest to maintain the integrity of the soul” (Blumenthal, 1996, p. 89). The aim is less to see spiritual realities than to embody such realisations, as Rist (1967) indicates: “For Plotinus, the aim of the mystic is not a seeing, but a being” (p. 221). Such being requires wide awareness, receptivity and trust of that beyond reason as Rist observes: “To proceed beyond is to take a leap, and in a sense it is a leap into the unknown” (p. 220). It “is a tremendous demand of the self” (p. 220) yet simultaneously “simply” requires substantive accord with the One—a (Zen-like) one-pointedness or singularity of consciousness (Hines, 2009).

Renaissancism

The greatest regeneration of Hermetism and Neoplatonism took place in fifteenth century Italy. The city state of Florence was the first to witness the self-proclaimed flourishing of a new consciousness—a “radical enlightenment” (Gare, 2005)—which Tarnas (1991) describes as “expansive, rebellious, energetic and creative, individualistic, ambitious and often unscrupulous, curious, self-confident, committed to this life and this world, open-eyed and sceptical, inspired and inspirited” (p. 231). The newfound sense of human dignity and the exalted place of humanity in the cosmos—as straddling the mortal and immortal—was exemplified by Pico della Mirandola’s Oration on the Dignity of Man (1486/1965). Humanity was now identified to a large degree as self-created—“as a sculptor gives form to a statue” (Miller, 1965, p. xv).

Such Hermetic-Neoplatonic spirit gave rise to the birth of modern science (Tarnas, 1991):15 “Kepler confessed that his astronomical research was inspired by his search for the celestial ‘music of the spheres’” (Tarnas, 1991, pp. 294-5) whilst Newton’s law of gravitation was “modelled on the sympathies of Hermetic philosophy” (Tarnas, 1991, p. 295).16 Paradoxically, Gare (2005) notes that “modern science [simultaneously] developed in reaction to and in opposition to Renaissance culture, both the civic humanism that had developed in the

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15 This proved to be a double-edged sword, however. Whilst modern science has achieved many successes, scientism (its excessive, inapt and/or de-contextualised use—in relation to an ecology of approaches)—has been a significant player in the facilitation of the current global problematique.

16 Newton also adopted a Thomist-Aristotelian critique of Descartes (Gare, 2005).
Renaissance and the more radical ideas of the ‘nature enthusiasts’ who had celebrated nature as divine” (p. 57): the legacy of Hermetic-Neoplatonism is a complex yet fertile one. Complicit in such fertility was the radical relationalism and syncreticism in Renaissance thought. Such “determined ‘decompartmentalization’” (Tarnas, 1991, p. 230) included the notion of Greek philosophy (including Hermetism and Neoplatonism) and the Judeo-Christian tradition as jointly expressing a single spiritual philosophy (Miller, 1965). Radical relationality also surfaces in Renaissance dialectics with “its simultaneous balance and synthesis of many opposites: Christian and pagan, modern and classical, secular and sacred, art and science, science and religion, poetry and politics” (Tarnas, 1991, p. 229). Abrams (1971) furthers this identification of defragmentation and connectivity, ascribing to the Renaissance

an integral universe without absolute divisions, in which everything is interrelated by a system of correspondences, and the living is continuous with the inanimate, nature with man, and matter with mind; a universe, moreover, which is activated throughout by a dynamism of opposing forces. (p. 171)

Syncretic integration also fostered the polymathic ideal of homo universalis as exemplified by the broad scholarship at Marsilio Ficino’s Academy. The general sensibility was one of “a tolerant eclecticism, an open-minded, receptive attitude” (Miller, 1965, p. x) whether with regard to philosophico-spiritual traditions or across the range of scholarly and artistic interests. This united into such singularities as Pico della Mirandola’s complex philosophy involving an integral knowledge uniting both spirit and matter in which “a truth about any one part immediately reverberates through the whole, and discloses truth about every other part” (Miller, 1965, p. x). Altogether, in contrast to the perceived stultifications of the scholasticism of the time, the novel infusion of the Platonic and Neoplatonic “offered a richly textured tapestry of imaginative depth and spiritual exaltation. The notion that beauty was an essential component in the search for ultimate reality, that imagination was more significant in that quest than logic and dogma” (Tarnas, 1991, p. 212).

The insights and sensibility of the Italian Renaissance did not remain an isolated occurrence, however: they experienced a recapitulation a few centuries later in Germany.

The Nexus of German Classicism, Romanticism, and Idealism

Inspired by such figures as Böhme and Kant, the German nexus of classicism, romanticism and idealism developed in the late eighteenth and early nineteenth centuries (Hanegraaff, 1998). Key figures included Herder, Goethe, Schiller—classicism; Wilhelm and Friedrich Schlegel, Hölderlin, Novalis—romanticism; and Fichte, Hegel, and Schelling—idealism (noting that the

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17 In contrast to later thinking, Böhme’s “cosmogony entails something that modern minds find particularly hard to imagine: a dynamic process that unfolds outside of time” (Hanegraaff, 1998, p. 261): process but not—or not just—material evolution. Here, Hanegraaff (1998) furthers Böhme’s thinking that “the full archetypal symbology of esoteric ‘transmutation’ is definitely not exhausted by…temporal manifestation” (Hanegraaff, 1998, p. 261). The significance of this understanding in relation to modern, Romantic and ideal conceptions of temporality and transformation could be fruitfully furthered. In this regard, see Kelly (2008).
three categories are by no means mutually exclusive). In terms of its relationship with the current genealogy, Abrams (1971) states:

The basic categories of characteristic post-Kantian philosophy, and of the thinking of many philosophical-minded poetics, can be viewed as highly elaborated and sophisticated variations upon the Neoplatonic paradigm. (p. 169)

Specifically, classicism attempted to realise integrative forms at multiple levels in relation to life and culture (Richter, 2005). This drive overlapped with romanticism, which included:

- organic unities in which the whole is more than the sum of the parts;
- the primacy of process, temporal consciousness;
- helixes of development-and-return;
- the value of diversity;
- imagination as a creative force;
- valorisation of the symbolic;
- the significance and liminality of philosophy and literary plot; and

Tarnas (1991) observes that “from the Romantic’s perspective…the literalism of the modern scientific mind was a form of idolatry” (p. 369). Instead of a fundamentalist science, Goethe’s approach involved integrative dialogue between science and art through realising their unity as spiritual manifestations. A valorisation of the genus of art (music, literature, drama etc.) was seen as critical. Indeed, the artistic was elevated to an exalted role—the discipline of imagination facilitating spiritual emancipation (Tarnas, 1991). Despite the Romantic contestation with mechanistic science, the significance of German romanticism nonetheless stretches into modern science. Richards (2002), for example, identifies that “Charles Darwin[’s]…conception of nature owed much to German Romantic sources” (p. 10).

In terms of idealism, Beiser (2000) (who interprets idealism widely) identifies that,

All its various forms—the transcendental idealism of Kant, the ethical idealism of Fichte, and the absolute idealism of the romantics—were so many attempts to resolve [the] aporiaia of the Enlightenment. …what all its forms have in common is the attempt to save criticism from scepticism, and naturalism from materialism. (p. 18)

Of notable inclusion are Schelling’s (1800 / 1978) Transcendental Idealism and Hegel’s (1807 / 1977) Phenomenology of Spirit.

From the nexus of German classicism, romanticism and idealism, we now turn our attention to a contemporary nexus: that of reconstructive postmodernism.

Reconstructive Postmodernism

What might be understood by reconstructive postmodernism? Griffin (2002), who identifies the term-idea as “a diffuse sentiment…that humanity can and must go beyond the modern” (p.
vii), has promoted the term as an advancement on *constructive postmodernism*. Gare’s (2002) *cosmological postmodernism* can also be identified as closely related in that it is similarly identified as forming a binary with poststructuralist or deconstructive postmodernism. From a broader angle, all contemporary integrative theorising can be understood as a form of reconstructive postmodernism in that it seeks to go beyond the modern (whilst including appropriate aspects of the modern) in a cohesive manner. From a dialectical perspective, this may even attempt to include *deconstructive postmodern elements* (Hampson, 2007) where the deconstruction “is not so totalizing as to prevent reconstruction” (Griffin, 2002, p. ix).

Griffin (2002) identifies the modern worldview in relation to “Galilean-Cartesian-Baconian-Newtonian science” (p. vii). The vector of this reconstruction is toward “a new unity of scientific, ethical, aesthetic, and religious intuitions” (p. ix) involving “a creative synthesis of modern and premodern truths and values” (p. x). It does not reject science per se but rather *scientism*, the overregard for—or overapplication of—science, in relation to other domains or orientations. Cartesian commitment to determinable knowledge (Gill, 2000) and consequential *human as machine* metaphors are problematised (Gunter, 1993, p. 135). Rather, after Gödel’s incompleteness theorem (Gill, 2000), life involves “acts that are free and unpredictable” (Gunter, 1993, p. 135). Indeed, on Griffin’s (1993) understanding that “we have an individual piece of nature that we know from within as well as without” (p. 203) such “postmodern animism” (p. 201) indicates that the whole of “nature is comprised of creative, experiential events” (p. 202).


**Objects of Integration**

From a certain perspective, one may picture objects, entities or topological nodes with which integrative process can be enacted. From such a perspective, one may ask the question: what objects of integration can be identified? There are no doubt many ways of answering this question; different types of identification can be given – see, e.g. Bhaskar & Norrie (1998); Ferrer, Romero, & Albareda (2005); Klein (1990, 2000); Nicolescu & Voss (2002); Wilber (1997). Objects of integration could include:

- non-living phenomena, ranging in size from the quantum to the galactic, cosmogonical periods;
- non-human living phenomena of all kinds, evolutionary periods;
- human evolutionary and historical periods;

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18 A range of views could be given regarding the degree and the way the “modern” might be included (if at all) in such a reappraisal.

19 This question pertains to a conventional-atomistic mindset whereby initial objects-as-atoms are later brought into interrelationship. An alternative starting place—that of initial oneness from which intra-multiplicities could be identified—is equally possible.
cultural groupings, cultures and sub-cultures;
- noetic domains, disciplines, epistemologies etc.
- perspectives (1st, 2nd, 3rd; emic, etic; holistic; developmental etc.);
- objects of language and other expressive forms.

Philosophy- Spirituality

Two noetic objects of integration which can be identified as being in interrelationship within each of the five historical clusters in question are philosophy and spirituality. From the perspective of modernism, these two term-concepts appear largely distinct from each other, with “philosophy” inferring rational inquiry and “spirituality” tending to indicate something of the non-rational. In contrast, from the perspective of the current genealogy of Western integrative thinking, the two are more intimately connected, such that one could refer to spiritual philosophy, to philosophical spirituality, and to an intimate dialectic between the two (“philosophy~spirituality”).

With regard to philosophy~spirituality and Hermetism, Ebeling (2005/2007) distinguishes between “theological-philosophical texts” on the one hand and “technical Hermetica” on the other (p. 9). The former can be understood as involving a fusion between the spiritual and the philosophical as part of a sense of partnership between humanity and God (Goodrick-Clarke, 2008), a fractal connection (as a complexity theorist might say) between microcosmos and macrocosmos (Linden, 2003b). For Neoplatonism, a somewhat different intimacy is identified, namely, that the philosophical intellect—Nous—is holarchically embraced by the (Creative) One, spiritual Good or God. Close connectivity between philosophy and spirituality is also evident in the Italian Renaissance. Miller notes that quintessential Renaissance spiritual philosopher, Pico della Mirandola, identifies both “Greek philosophy and the Judeo-Christian scriptural tradition…as unfoldings of a single pious philosophy” (Miller, 1965, p. ix).

Whilst during this pre-modern period it was common for reason and revelation to (variously) be in agreement, the same cannot be said for the modern period. Apropos, the intimate connectivities between philosophy and spirituality in German humanism and, more recently, in reconstructive postmodernism, sit within a context where such synergy is not the norm. With respect to the former cluster, Solomon comments that “against the sometimes-crass materialism of the Enlightenment in France and England, German philosophers had become, virtually all of them, idealists or romantics of one kind or another…[insisting] on spirituality” (Solomon & Higgins, 1996, p. 228-9). Similarly in the more recent period, in contrast to the “atheistic materialism” of mainstream academia (Griffin, 1997), when Whitehead (1967) refers to “the Odyssey of the human spirit” (p. 207), he identifies philosophy—“adventures of thought” (p. 207)—as forming one vector of spiritual adventuring, along with “adventures of passionate feeling [and] adventures of aesthetic experience” (p. 207). Academia as jnana yoga, perhaps?

The following are variously indicative of other reconstructive postmodern relationalities between philosophy and spirituality. Bhaskar’s (2002) recent work on meta-Reality deeply integrates the two. Integral approaches of most persuasions partake of close relationships between

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20 There is currently a resurgence of interest in spirituality, not only including noetic relations with science and philosophy but also with respect to concrete relations to organizations, see e.g. Edwards (2010).
the two. Griffin (1990) identifies connectivities between spirituality and postmodern philosophy, particularly with regard to the principle of interconnectedness. The work of quantum physicist David Bohm also indicates an intimacy between philosophy and spirituality (Russell, 1985) including the influence of Christian mystic Nicolas of Cusa (Fox, 1990). From a different direction, the connections between spirituality and postmodernism are identified by Benedikter (2005). Additionally, in relation to a holarchical picture of higher order sciences, Murphey and Ellis (1996) identify the need for a yet “higher-level explanation—either metaphysical or theological” (p. 16), a non-reducible order involving ethics… A plethora of other contemporary understandings could contribute to this list.

Macro-integrative Entities

The current section addresses what might be regarded as large integrative entities whilst the following section will explore seemingly smaller scales.21

Macro-integrative entities could include such items as universe/kosmos/cosmology, such as including identification of ontological or epistemologico-ontological22 levels; planet (Gidley, 2007)—whether as ecosphere/biosphere, multiculturalism (Dussel, 1993/1996)/transcivilisationism, transmodernism, or indeed, the “cosmo-physico-bio-anthropolog[osphere]” (Morin, 2008) incorporating the bodymind23 (Dewey, 1928, 1997); history, big history (Christian & McNeill, 2004), macrohistory (Galtung, 1997), genealogy; perspectives; and collective mind—incorporating collective consciousness and the collective unconscious (Jung et al., 1981). Academia itself might be regarded as a macro-integrative entity within which other integrative entities exist—entities such as philosophy, narrative, transdisciplinarity (Brier, 2006; Giri, 2002; Klein, 2004; Nicolescu & Voss, 2002), meta-theory (Edwards, current issue; Wallis, 2010), and integral approaches (Esbjörn-Hargens, 2006; Esbjörn-Hargens & Zimmerman, 2009; Gebser, 1949/1985; Gidley, 2007; Molz, 2010; Reams, 2005; Ryan, 2005; Wilber, 1997).

The case study offered below comprises a broad interpretation of syncretism.

Syncretism

The term syncretism derives from the Greek synkretismos meaning “union of communities.” Syncretism can be defined as “the attempted reconciliation or union of different or opposing principles, practices, or parties, as in philosophy or religion.”24 This breadth allows for its connection with the genealogy to vary from syncretic spirituality through syncretic philosophy to syncretic academia—forming, one might say, “the many faces of syncretism” (Sathler & Nascimento, 1997, p. 99). The term-concept has a chequered history, sometimes viewed neutrally or positively (including syncretism as promoting dialogue (also see Starkloff (2002)), oftentimes negatively (including the idea of syncretism as a corruption of Truth) (Veer, 1994). In line with a postmodern perspective (Bertens & Fokkema, 1997; R. Shaw & Stewart, 1994), the current paper

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21 Some blurring between scales is inevitable.
22 Noting dialectic between ontology and epistemology.
23 Offering such perspectives as science and art within the self (Zebrowski, 1999)
facilitates the former view, one which problematises the notion that “syncretism” must connote the superficial and/or the chaotic, but rather allows for the possibility of a duly complex and/or coherent depth syncretism, “((syncretism))” (to use Gangadean’s, 2008, *deep dialogue syntax*) or “a poetic of syncretism” involving vision, panorama, orchestration, integration (Cocozzella, 1990).

With respect to Hermetism, spirituality involves a “syncretic, Hellenistic philosophy of nature, which itself was a conglomeration of Aristotelian, Platonic, Stoic, and Pythagorean doctrines, interspersed with motifs from Egyptian mythology and themes of Jewish and Iranian origin” (Ebeling, 2005/2007, p. 10). Indeed, Hermetism’s syncretic nature is such that it could be regarded as involving the assemblage of all conceivable opposites (Jung, 1943 / 1970), an archetype of nonduality, a relational template-sensibility that accords with postmodern interest in such items as “relativity, pluralism, polarities, [and] polysemy” (Faivre, 1995, p. 49). In contrast, the degree of syncretism in Neoplatonism is debatable. It might well be identified that “the philosophy of Plotinus cannot in fact be considered eclectic or syncretic” (Gatti, 1996, p. 13). Nonetheless, beyond the fact that Plotinus was himself Egyptian (a liminal location between West and East), substantive links can be made with Indian spiritual philosophy (Chattopadhaya, 2002; Harris, 2002); it also “seems undeniable that Philo… [who produced] for the first time in history a fusion of elements of traditional Greek thought with elements of Hebrew culture, was also an influence on Plotinus” (Gatti, 1996, p. 12).

The question of spiritual syncretism of the Renaissance is far less uncertain. Pico della Mirandola, for example, was not only well acquainted with Hermetism, Plato, Aristotle, Neoplatonism, scholasticism and the Christian Church Fathers, but also had “knowledge of Hebrew, and some slight acquaintance with Arabic and Aramaic, which gave him access to Jewish theology, philosophy, and science” (Miller, 1965, p. viii). Against “the charge of ‘bad syncretism’” Cassirer (1942) considers that “we must…absolve him” (p. 345). The yet stronger case would be to problematise the default association between “syncretism” and “bad”: in this regard, Blum (2003) names the argument as occurring between “modern” philosophy and such worthy syncretism as found in the Hermeticism of the Renaissance.

With respect to German humanism, syncretism appears more in relation to philosophical syncretism rather than that of spiritualities. This includes identification of Kant’s syncretic theory or integrative philosophy (Rockmore, 2003), Fichte’s philosophical syncretism (Bamforth, 2003), Hölderlin’s philosophical syncretism (Hoesterey, 1991) and even Hegel’s speculative synthesis as syncretic harmonization (Scarfe, 2006).

In relation to reconstructive postmodernism, syncretism can be identified in a number of ways. Firstly, Whitehead and Jung have been associated with identifications of contemporary “spiritual and mystical religion” (Campbell, 1978, p. 152), one which draws upon such idea-systems as Christian mysticism, “Buddhism, Hinduism, Sufi Islam, Neoplatonism, Gnosticism and Romantic Idealism…Jung, William James [and] Whitehead” (Campbell, 1978, p. 148). In addition to the address above, the syncretic interest of Jung himself is perhaps further indicated by his interest in the Daoist book, *The Secret of the Golden Flower* (Heyong, 2009). Additionally, the contemporary “spiritual and mystical tradition” can be associated with “the generally polymorphous character of truth” (Campbell, 1978, p. 154)—a postmodern conceptualisation whose expression can be understood as including syncretism as postmodern, feminist, “complex
interdisciplinary,” “integrative,” “transdisciplinary,” “bricolage,” “jazz” or “dance” (Brown, 1997; Ebbeson, 2006; Hoesterey, 1991)—syncretism as a quality or type of hybridity comprising the “transversal relations of disciplines” (Toro, 2007, p. 23, original emphasis). From a different direction, Ascott (2006) syncretically coheres three domains, relating spiritual syncretism with quantum metaphysics and social harmony, asserting that “the development of a truly technoetic art will emerge from the confluence of connectivity, syncretism, and field theory. Connectivity is at the root of cultural coherence, syncretism at the root of spiritual coherence, and field theory at the root of quantum coherence” (p. 75). Such texts allow for the possibility of complex integrative theories (of whatever hue) as sitting in relation to syncretism.

Micro-integrative Entities

In addition to macro-scale integrative items, seemingly smaller scale entities can also be identified such as those identified by particular terms—or noetic nebulae such as clusters of metaphors (Kimmel, 2010)—which might have substantive ecosystems of meaning, such as the polysemy of creativity and love which are used below as illustrative. Other possibilities include archetype—whether of pre-modern (e.g. Hermes, Eros) or postmodern (e.g. Jungian archetype) variety—and neologisms such as art-e-fact (integrating modernistic “fact” with postmodern aesthetic template).

Although “creativity” and “love” comprise two terms, they have been chosen as jointly illustrative partly because, in many instances throughout the genealogy, they arrive together such as through the archetype Eros.

Creativity

As an introduction to creativity, its polysemous quality is indicated by Bröckling (2006) who identifies vectors of creativity as:

- metaphysical
- human potential
- involving infinite regression
- contingent
- involving historical consideration
- involving a multiplicity of metaphors
- available to all
- capable of being intensified
- economic resource
- the spirit of enterprise
- involving the drawing of distinctions
- both civic responsibility and subversive force
- both spontaneous and able to be facilitated
- paradoxical
- fun
- needing leisure
- requiring freedom
- normative deviance
- collective.

In contrast to Bröckling’s negative evaluation of such a situation, however, I would suggest that the complexity in such an ecosystem accords with complex integrative paradigms and is therefore generative.

With respect to the genealogy, creativity is significant not only as an item identified in the material (such as described below for Hermetism and Neoplatonism) but also in terms of the orientations themselves being creative (as exemplified by Renaissancism and German humanism). Regarding Hermetism, Copenhaver (1992) relays the Hermetic view that “the whole of matter’s quality...is to be creative” (p. 75), noting “the creative role of the Logos” (Copenhaver, 1992, p. 102). Regarding Neoplatonism, one interpretation of the ultimate (God) for Plotinus is the Creative One (Sumi, 2002). Creativity shines through in the Italian Renaissance, a period showing a “high degree of creativity” (Burke, 1999, p. 228) involving “the clustering of so many outstandingly creative individuals” (Burke, 1999, p. 27). These included Ficino and Pico della Mirandola. Regarding the thought of the former, Mason comments that “Ficino unequivocally endorsed human creativity” (Mason, 2003, p. 44), whilst Cassirer (1942) identifies that of Pico ascribes the freedom of humanity to self-reflexive “uninterrupted creativity...which at no point come[s] to a complete cessation” (p. 330).

With respect to humanism, Herder set the tone by praising Shakespeare not only for “his ‘divine power’ but also for his ‘divine grasp’, the ability to make a whole out of apparently random parts” (Mason, 2003, p. 163)—the integration of the “amoral” aspects of creativity into the divine whole. From a different direction, Williams refers to “the daunting corpus of Goethe’s creative writing” (Williams, 2001, p. xiv). Indeed, Stumpf (1995) identifies German idealism as a whole (i.e., the zeitgeist or “spirit of the times”) as a “zenith” in “scientific creativity” with respect to both quality and quantity; this is similar to Collins’ (1987) identification of its “outpouring of creativity” (p. 48), specifically as philosophical creativity. Creativity forms an important part in idealism as indicated by Hegel’s notion of “creative reason” (Mason, 2003, p. 177). It could be argued, however, that creativity forms an even greater role in German romanticism. Beiser (2003), for example, indicates that for the romantics, the highest degree of organization and development of the divine force was nothing less than the creativity of the artist, philosopher, or saint (p. 143). This is attributed to the fact that “the creativity of the artist is nothing less than the self-realization and self-manifestation of the powers in nature” (p. 86)(original emphasis), noting that the notion of “artist” might include “philosopher,” as Barnard and Lester (1978/1988) comment that “Friedrich Schlegel even envisages the completion of philosophy in the work of art” (p. xv). Philosophy as an art toward Self-realisation.

Perspectives on creativity flourished in the twentieth century to such an extent that one could not adequately honour creativity in reconstructive postmodernism with the current overview. A gesture, nonetheless, might run as follows. The identification of creativity within individuals can be seen in a wide range of material from the association of Nietzsche’s will to power with “sheer creativity” (Mason, 2003, 226), through Koestler’s (1970) concept of bisociation in the triptych

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25 Involving intra-contestabilities as well as synergies.
26 “A term used extensively by Hegel” (Stumpf, 1995, p. 235).
of *the Jester, the Sage and the Artist*, to Sternberg and Lubart’s (1999) review of creativity in psychology. Additionally, creativity *within and beyond* individuals not only surfaces in collective creativity (Montuori, 1997) but as a cosmic or universal force (Görnitz & Görnitz, 2006). Ko (2007), for instance, states that for both Whitehead and Jung, opposites such as “subject and object, the conscious and the unconscious, God and the world, good and evil…are not antagonistic but relational and thereby become the conditions of creative transformation” (p. 31), whilst Bhaskar (2002) identifies five cycles of creation/creativity, namely, *calling, creation, formation, making, reflexivity*, respectively.

Such transpersonal conceptualisations regarding creativity often involve a close association with love. The following segue on Eros briefly addresses this connection before addressing love in its own right.

### Eros

The ancient Greek god Eros embodies (inter alia) a fusion of love and creativity. From contemporary popular understanding, for example, Wikipedia (2010) describes Eros as (in part) embodying “not only the force of love but also the creative urge of ever-flowing nature.” Taking into account that “up until the modern age, Eros was seen as central to human life” (Miller, 2009, p. 581), a reconstructive *postmodernism* might well wish to regenerate Eros as the harmonic coherence of love and creativity. It might wish to build upon Bhaskar’s (2002) “creative, loving, right-acting ground-state activity” (pp. xvi-xvii) and Wilber’s (1995) Whitehead-influenced identification of Eros as Kosmic driver. Additionally, in accord with Rabbi Gaffni’s (2003) understanding of Eros as (in part) representing the interconnectivity of being, the *integrative* function of Eros in relation to love and creativity (Hart, 1950) might also be identified. At a more local level, the love-creativity connection surfaces in such understandings as “creativity *[being] facilitated by doing what you love and loving what you do*” (Amabile, 1997, original italics) (also see Torrance (1995)).

### Love

As a brief introduction to the Western address of love, one might note ecologies of archetypes/types of love such as that of Eros (transpersonal love), Xenia (the love of strangers), Philia (love between friends), Storge (love of family, community, humanity), and Agape (altruistic love or compassion) (Miller, 2009); and that of Platonic erotic love (both homosexual and heterosexual), Christian love, romantic love, moral love (see, e.g., Kant and Kierkegaard), love as power, and mutual love (Wagoner, 1997). Connectivities within such ecologies include that between romantic love (noting Romantic as the valorisation of the passionate as opposed to the prudent life (Wagoner, 1997) and divine love, such as in Emerson’s understanding (Miller, 2009).

Let us now regard the genealogy. In Hermetism, humans are identified as “double beings” in that we are understood as being both mortal and immortal; moreover, these two parts are seen not

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27 One might note the significance of the play of imagination in each of love, creativity and integration (Singer, 2009b).
as antagonistic but as united in love (Ebeling, 2005/2007). In Hermetism, it is also identified that “love...makes one harmony act in all things” (Copenhaver, 1992, p. 66). Regarding Neoplatonism: for Plotinus, who forwarded Greek ideas about love, philosophic love enables us to recognize the beauty in everything, culminating in a sense of oneness (Singer, 2009b). An iteration of the holarchical Neoplatonic relationship between Reason-within-Love can also be seen in Casanus’ understanding that “true love of God is amor Dei Intellectualis: it includes knowledge as a necessary element and a necessary condition. ...Love by itself, without any admixture of knowledge, would be an impossibility” (Cassirer, 2000, p. 13).

The address of love in the Renaissance exceeds and sometimes contradicts that in Neoplatonism. Singer indicates that “Michelangelo illustrates how the inherent violence within the polar opposites of Neoplatonic love can generate the greatest art” (Singer, 2009a, p. 182) whilst Leonardo extends pantheistic or sensual love. Ficino’s doctrine of love should also be mentioned here (Sears, 1952). In general, the Renaissance exhibited “a variety of tensions between sensual love and spiritual love” (Smith, 2010). German humanism continues the interest in both human love and the love of God: Romanticism—based on an understanding regarding the unity of physical and spiritual love (Saul, 2009)—“considers the pursuit of love worthier than any other interest” (Singer, 2009a, p. 285) whilst idealism identifies “the universal importance of love” (Singer, 2009a, p. xv).

When we enter the twentieth century, for both Whitehead and Jung, “God’s love is based on the paradoxical combination of the opposites in which love does not mean the massive movement toward goodness, but the transformational and comprehensive whole of the contradictories” (Ko, 2007, p. 31). For Whitehead, the relational self forms the basis of love, whilst for Jung, “divine love is realized in the representation of archetype” (Ko, 2007, p. 38). A later reconstructive iteration of this universal aspect of love is found in such figures as Ghandi, Luther King (Miller, 2009), the Dalai Lama and Fethullah Gülen (2004). It is also seen in Bhaskar’s (2002) understanding that “love is the totalising, binding, unifying, healing force in the universe” (p. 175). This includes self-love, which, as Giri indicates, has its own genealogy including both Neoplatonic thought and also Foucault’s “life as a work of art involv[ing] care of the self” (Giri, 2009, p. 506).

Whilst reconstructive postmodern address includes a continuation of the possibility of universal love, other expressions of postmodernism (which may nonetheless be included within the reconstructive gambit) tend toward address of human love (Illouz, 1997, 1998), particularly with respect to both its desirability and naïveté. Where a greater love is posited, it may take the form of the love of humanity—perhaps based on valuing the Other (see Rempel & Burris (2005))—including “emancipation from oppressive discourses” (Morley & Ife, 2002, abstract). Reconstructive postmodern address should also be given to the seminal work on love by integral sociologist, Sorokin (1954/2002), and more recently, both psychological perspectives on love—such as Sternberg’s (1986) triangular theory of love which regards personal love as an integration of intimacy, passion and commitment—and linguistic perspectives including love’s polysemous quality via conceptual metaphoric vectors or entailments such as love involves creativity, love creates a reality, love is unique in each instance (Lakoff & Johnson, 2003) and love is a nutrient (Gibbs, 1994). In terms of application, love is identified as significant in education (Gidley, 2009; Noddings, 2003). Last but not least, an evolutionary perspective (Loye, 2004) offers the
possibility of non-human love: love as an emergent property in mammals (Porges, 1998) including cetaceans.  

**Shapes of Integration**

Associated with integrative entities can be identified conceptual shapes, templates, sensibilities or habits of integration (and potential typologies thereof). One way of looking at this is to identify a bifurcation between those shapes which interrelate two items with those that interrelate more than two. Shapes between two items include dialectics in addition to two-party balance, dialogue, holography and harmony (in its more descriptive sense). Shapes involving more than two entities include multi-party dialogue, multi-note harmony, assemblage, juxtaposition, baroque, topology, hierarchy/ holarchy, helix, system, complex system, ecosystem, organism, art-e-fact, perhaps even rhapsody. Degrees of integration in either two or post-two shapes would range from mere proximity though degrees of intimacy (including the normative resonances of harmony and rhapsody) to amalgam/fusion. In general, integrative shapes move away from atomistic thinking toward relational and contextual thinking (Reich, 2002).

The case study below is that of organicism, noting that “organic” can be understood as including not only entity as organism but also entity as ecosystem.

**Organicism**

Although there may be “no true story of organicism” (Armstrong, 2003, p. 5), organicism might nonetheless be identified as a shape or habit pertaining to organic metaphors. Organicism includes a certain elasticity, a certain complexity and a notion of “living.” Regarding the most common organic metaphor in the genealogy—that of organism—Hanegraaff (1998) notes that, “while a mechanism is an aggregate of separate parts, an organism is a whole that cannot be broken up into its elements without killing it; and while a mechanism is static and can only be moved by outside forces, an organism is dynamic and has an inner principle of motion” (p. 257): organism as an open integral system.

Whilst little may be directly said in the philosophical Hermetica in terms of organicism, later iterations of Hermeticism, as indicated below, express a strong relationship to this template or sensibility. In Neoplatonism, the macrocosm is regarded as a Great Living Thing (Coulter, 1997)—and latterly connected to smaller “organisms” including literature (Coulter, 1997)—an understanding expanded upon in the Renaissance such as through Giordano Bruno’s identification of the universe as an organism (Bialas, 2000). Indeed, “for sixteenth-century Europeans the root metaphor binding together the self, society, and the cosmos was that of an organism” (Merchant, 2010, p. 295). Such a metaphor entailed “subtle ethical controls and

28 Also see Hampson (2005).
29 As, for example, between unity and diversity.
30 Even material atoms are not simple. Griffin (1997) relays Whitehead’s understanding, for example, that “atomic actual occasions, far from being simply the product of their electronic, protonic, and neutronic occasions, not only have their own creativity, but have more than any of their constituents” (p. 40).
31 Notwithstanding ecosystem as “also” involving abiotic elements.
restraints” (Merchant, 2010, p. 297) in contrast to the modernistic metaphor of *dominion over nature*.

German humanism—from Romanticism to the Slavophile tradition (Rabow-Edling, 2006)—saw a yet more bountiful flowering of this perspective. Regarding romantic organicism, Armstrong notes its “underestimated fecundity and complexity” (Armstrong, 2003, p. 2). The Romantic conception is that organicism acts as the “grounding systematics for understanding all holistic structures” (Armstrong, 2003, p. 2). Its complexity is such that it was identified as able to include the apparently non-integrative notion of fragments, as exemplified by Friedrich Schlegel’s approach alluded to in the introduction. Organicism became an atemporal Absolute Organism in German idealism (Armstrong, 2003).

In terms of reconstructive postmodernism, Whitehead’s (1967) organic theory of nature (again through the metaphor of *organism*) is seminal—although note should also be made of Bergson (Antliff, 1993)—seeded, among other things, organicist approaches in postmodern science (Pickering, 1997) involving ecosystems of meaning. In a somewhat different form, Derrida’s intertextuality can be understood as a type of organicism (Park & Kayatekin, 2002) or at least in relation to where it “lets itself be touched” by organicism (Armstrong, 2003, p. 176). In another domain, Keynes’ theory of economics is organicist (whether through Moore, Hegel or Whitehead) (Park & Kayatekin, 2002); indeed, there is a veritable sociological tradition of society in general being viewed organically (Pasewark, 1997)—including the perspectives of Rousseau, Comte and Durkheim (Arnpoulos, 2005). In biology, Sheldrake’s (1981) morphogenetic fields accords with Whitehead’s organicism, whilst Lovelock’s (Lovelock & Margulis, 1974; Lovelock, 2000) Gaia hypothesis expounds the metaphor *Earth as organism*.

Although most interpretations of organicism involve extensions of *organism*, other possibilities exist, such as in relation to *ecosystem*. Ecosystem can be understood as “a subtle and complex concept” (Pickett & Cadenasso, 2002, p. 1) involving the dimensions of meaning, model and metaphor including the attribute of connectedness (Pickett & Cadenasso, 2002) (Hampson, 2010a, 2010b)—the more baroque “bringing together [of] independent voices” (Kwa, 2002, p. 29). Such multidimensional ecosystems can include arborescent (Davis, 2004) and rhizomatic (Deleuze & Guattari, 1980/1987) structures in addition to the metaphorical multidimensionality of vectors arising from *animal*. Additionally, through the postmodern reconstructivity of complexity theory, both organism and ecosystem can be identified as types of self-organising system (Heylighen, 1999).

**Processes of Integration**

The perspective of *processes* of integration points toward characterisations regarding enactments or effects which lead to integrations or relationalities. From a large scale perspective, processes of integration might include evolution and societal change. From an individual human perspective, they might entail such overt activities as exploring, environmental scanning and constructing. They might also include less overt, more chthonic processes such as those involved in creative, transformative process—such as Scharmer’s (2005) Theory-U—contemplative

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32 Also see Hampson (2005).
processes, holistic epistemologies or “gnoseologies” (Hampson, 2010c). The case below explores one of the more covert processes (which nonetheless may form part of larger—and/or more overt—processes), namely, intuition.

**Intuition**

Intuition forms part of Hermetism to the extent that Hermes Trismegistus is said to relay the intuitive way of thinking of the Egyptian archetype Thoth (Ebeling, 2005/2007). For Plotinus, the sphere beyond reason involves intuition and contemplation; Plotinian Intelligence involves the mystical and intuitive (Hadot, 1989/1998) such that, from a Neoplatonic perspective, an ecology of signifiers including Intelligence, Intuition, and Spirit all point to the same signified (Gregory, 1999). This can be understood in various ways. Hines, for instance, concludes, Neoplatonic “intelligence is intuitive” (Hines, 2009, p. 118): intelligence has “a completely natural and unforced quality” (Hines, 2009, p. 120) where “being, knowing, and doing [form] a harmonious union” (Hines, 2009, p. 120)—a fractal reflection, perhaps of the Neoplatonic view of the world as imperfect-yet-harmonious (Tarnas, 1991). In Iamblichus’s Neoplatonism, intuition pertains to that part of the soul through which the gods, rather than the person, acted (Shaw, 1995). This view of intelligence reminds one of more recent texts on human potential such as Maslow’s (1971) self-actualisation, and postconventional thought such as Cook-Greuter’s (Cook-Greuter, 2008) unitive consciousness. Yet more strongly, Neoplatonic knowing is identified with gnosis in contrast to reason: Hines (2009) somewhat controversially indicates that “reason...is only for those who lack intelligence. Intelligence is knowing; reason is an attempt to know” (p. 196).

Intuition was also valorised in the Renaissance. Pearce (1999) identifies that Ficino’s *De Sole* “stresses the importance of the intuitive power of man” (p. 99), noting that “an incorporeal Sun presiding over the divine intellect... requires the intuitive faculty” (Pearce, 1999, p. 99). In such understandings, “intuitive certainty...springs...from the specific and vital principle of the Ego” (Cassirer, 2000, p. 191). This might be exemplified by the intuitive proofs of Leonardo da Vinci (Cassirer, 2000; Kemp, 1993).

Intuition was also a strong feature in German humanism. Kant formulated a doctrine of pure intuition (Goudeli, 2002) in which—according to Shaviro (2009, p. 10)—was identified “a fundamental asymmetry between concepts and intuitions, such that each of them exceeds the powers of the other” (p. 10), including the realisation that aesthetic ideas are “inner intuitions to which no concept can be completely adequate” (p. 9). Hegelian idealism, on the other hand, rejects a distinction between intuitional and conceptual elements (Pippin, 1989). A similar fusion between the conceptual and intuitive is also found in Goethe’s aesthetic intuition (Stephenson, 2005) and in the early transcendentalism of Schelling through “his notion of Absolute Synthesis occurring in Intellectual Intuition” (Pippin, 1989, p. 96).

With regard to reconstructive postmodernism, the following is indicative. Slusser (1989) identifies both Whitehead and Jung as indicating that reason rests upon imagination and intuition—modalities which “cannot be reduced to formula or be subject to prediction and control” (p. 89). Specifically, he reports Whitehead as understanding that “ultimate notions are inexplicable in terms of higher universals. The sole appeal is to intuition” (p. 84).
Openings to Dialogue and New Lines of Flight

This paper has offered indications toward a genealogy of Western integrative thinking or Western panosophy. It has addressed five philosophico-historical attractors or moments as indicative, namely, Hermetism, Neoplatonism, Renaissancism, German Humanism, and Reconstructive Postmodernism. It has also indicated the efficacy of identifying a topology around such integrative aspects as objects for integration, macro- and micro-integrative entities, shapes of integration, and processes of integration. It has exemplified these through addressing the cases of spirituality—philosophy, syncretism, creativity, love, organicism and intuition—concepts which could be generatively furthered in contemporary integrative agendas. Future research could also explore relations between the genealogy presented here and non-Western genealogies as well as genealogies of ecological thought. Additionally, the topological lens could be further refined.

The sensibility offered is that of openness in that it (both as a whole and with respect to its parts) is open for further additions, refinements, etc.. Poststructuralist considerations might entail deconstructive emphases with regard to integration’s Other. Additions could include other aspects of integration such as purposes of integration: Is integration seen (in general or in particular) as better in some way than that to which it is contrasted? (An overall normative framing might nonetheless entail neutral identifications within the whole.) In the current instance—and in keeping with Nelson’s (current issue) association between cross-boundary work and the global problematique—the paper can be normatively located in the understanding that the well-being of that quintessentially integrative entity, Planet Earth, the geo-bio-psycho-socio-culturo-sphere, is surely facilitated by accordant integrative thinking rather than that offered by modernistic atomistic sensibilities. In composing this paper, I hope I have struck such an integrative chord.

References


Hampson: Towards a Genealogy and Typology


Scarfe, A. (2006). Hegelian 'absolute idealism' with Yogacara Buddhism on consciousness, concept (Begriff), and co-dependent origination (pratityasamutpada). Contemporary Buddhism, 7(1), 47-73.


Sumi, A. (2002). The psyche, the forms and the creative one: Toward reconstruction of neoplatonic metaphysics. In R. B. Harris (Ed.), Neoplatonism and contemporary thought


From Knowledge to Wisdom: Assessment and Prospects after Three Decades

Nicholas Maxwell

Abstract: We are in a state of impending crisis. And the fault lies in part with academia. For two centuries or so, academia has been devoted to the pursuit of knowledge and technological know-how. This has enormously increased our power to act which has, in turn, brought us both all the great benefits of the modern world and the crises we now face. Modern science and technology have made possible modern industry and agriculture, the explosive growth of the world’s population, global warming, modern armaments and the lethal character of modern warfare, destruction of natural habitats and rapid extinction of species, immense inequalities of wealth and power across the globe, pollution of earth, sea and air, even the aids epidemic (aids being spread by modern travel). All these global problems have arisen because some of us have acquired unprecedented powers to act without acquiring the capacity to act wisely. We urgently need to bring about a revolution in universities so that the basic intellectual aim becomes, not knowledge merely, but rather wisdom – wisdom being the capacity to realize what is of value in life, for oneself and others, thus including knowledge and technological know-how, but much else besides. This is an argument I have propounded during the last three decades in six books, over thirty papers, and countless lectures delivered in universities and conferences all over the UK, Europe and north America. Despite all this effort, the argument has, by and large, been ignored. What is really surprising is that philosophers have paid no attention, despite the fact that this body of work claims to solve the profoundly important philosophical problem: What kind of inquiry best helps us make progress towards as good a world as possible? There are, nevertheless, indications that some scientists and university administrators are beginning to become aware of the urgent need for science, and universities, to change. This is prompted, partly by growing awareness of the seriousness of environmental problems, especially global warming, and partly by a concern to improve the relationship between science and the public. So far, however, these changes have been small-scale, scattered and piecemeal. What we require is for academics and non-academics alike to wake up to the urgent need for change so that we may come to possess what we so strikingly and disastrously lack at present: a kind of inquiry rationally devoted to helping humanity make progress towards as good a world as possible.

Keywords: Academic revolution, education, enlightenment, global problems, humanities, knowledge-inquiry, politics, reason, science, social inquiry, wisdom-inquiry.

1 Nicholas Maxwell has devoted much of his working life to arguing that we need to bring about a revolution in academia so that it seeks and promotes wisdom and does not just acquire knowledge. He has published many papers and six books on this theme: see especially From Knowledge to Wisdom (1984) and How Universities Can Help Create a Wiser World (2014). For thirty years he taught philosophy of science at University College London, where he is now Emeritus Reader. In 2003 he founded Friends of Wisdom, a campaigning group of educationalists.
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Introduction

We are in a state of impending crisis. And the fault lies in part with academia. For two centuries or so, academia has been devoted to the pursuit of knowledge and technological know-how. This has enormously increased our power to act which has, in turn, brought us both all the great benefits of the modern world and the crises we now face. Modern science and technology have made possible modern industry and agriculture, the explosive growth of the world’s population, global warming, modern armaments and the lethal character of modern warfare, destruction of natural habitats and rapid extinction of species, immense inequalities of wealth and power across the globe, pollution of earth, sea and air, even the aids epidemic (aids being spread by modern travel). All these global problems have arisen because some of us have acquired unprecedented powers to act without acquiring the capacity to act wisely.

We urgently need to bring about a revolution in universities so that the basic intellectual aim becomes, not knowledge merely, but rather wisdom—wisdom being the capacity to realize what is of value in life, for oneself and others, thus including knowledge and technological know-how, but much else besides. We need a new kind of inquiry that puts problems of living, individual, social and global, at the heart of the academic enterprise, more specialized problems of knowledge and technological know-how emerging out of and feeding back into the central concern to help solve problems of living.

The intellectual and institutional revolution we require would affect every branch and aspect of academic inquiry. It would have dramatic consequences for the institutional structure of universities, and for the relationship between universities and the public. The character of natural science, social inquiry and the humanities, and the relationships between these broad areas of research, would all be affected. There are implications for both research and education. Research pursued for its own sake-so-called “pure” research-and applied research would both be affected.

The revolution is needed for intellectual and humanitarian reasons combined. What we have at present-inquiry devoted primarily to the pursuit of knowledge-is damagingly irrational when judged from the all-important standpoint of helping humanity realize what is of value in life. It is this wholesale, structural, institutionalized irrationality which is in part responsible for the creation of our current global problems, and our incapacity to deal with them effectively and humanely. In order to learn how to tackle these problems effectively and humanely, it is essential that we bring into existence the new kind of inquiry, rationally devoted to that end.

This is an argument I have propounded during the last three decades in six books, over thirty papers, and countless lectures delivered in universities and conferences all over the UK, Europe and north America. Despite all this effort, and despite critical praise for my work, the argument

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has, by and large, been ignored. What is really surprising is that few philosophers have paid any attention, despite the fact that this body of work claims to solve the profoundly important philosophical problem: *What kind of inquiry best helps us make progress towards as good a world as possible?*

There are, nevertheless, indications that some scientists and university administrators are beginning to become aware of the urgent need for science, and universities, to change. This is prompted, partly by growing awareness of the seriousness of environmental problems, especially global warming, and partly by a concern to improve the relationship between science and the public. So far, however, these changes have been small-scale, scattered and piecemeal. What we require is for academics and non-academics alike to wake up to the urgent need for change so that we may come to possess what we so strikingly and disastrously lack at present: a kind of inquiry rationally devoted to helping humanity make progress towards as good a world as possible.

**Outline of the Argument**

Elsewhere, I have spelled out the argument for the urgent need for the intellectual revolution, from knowledge to wisdom, in some detail. Here, I will be as brief as I can. First, I distinguish two kinds of inquiry, which I shall call *knowledge-inquiry* and *wisdom-inquiry*. At the core of knowledge-inquiry there is a philosophy of science which I shall call *standard empiricism*; the corresponding philosophy of science at the core of wisdom-inquiry I call *aim-oriented empiricism*. Standard empiricism and knowledge-inquiry are what we have inherited from the past and what we still have, by and large, today. Aim-oriented empiricism and wisdom-inquiry are what emerge when knowledge-inquiry is modified just sufficiently to ensure elementary rules of rational problem-solving and aim-pursuing are implemented, granted that the basic aim is to help promote human welfare, help people realize what is of value in life.

There are two arguments. The first appeals to *problem-solving rationality*, the second to *aim-pursuing rationality*. These establish that knowledge-inquiry is indeed damagingly irrational—three of the four most elementary rules of rational problem-solving are violated—wisdom-inquiry being what emerges when knowledge-inquiry is modified just sufficiently to cure it of its grave rationality defects.4

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First Argument: Problem-Solving Rationality

Knowledge-inquiry demands that a sharp split be made between the social or humanitarian aims of inquiry and the intellectual aim. The intellectual aim is to acquire knowledge of truth, nothing being presupposed about the truth. Only those considerations may enter into the intellectual domain of inquiry relevant to the determination of truth-claims to knowledge, results of observation and experiment, arguments designed to establish truth or falsity. Feelings and desires, values, ideals, political and religious views, expressions of hopes and fears, cries of pain, articulation of problems of living: all these must be ruthlessly excluded from the intellectual domain of inquiry as having no relevance to the pursuit of knowledge-although of course inquiry can seek to develop factual knowledge about these things, within psychology, sociology or anthropology. Within natural science, an even more severe censorship system operates: an idea, in order to enter into the intellectual domain of science, must be an empirically testable claim to factual knowledge.

The basic idea of knowledge-inquiry, then, is this. First, knowledge is to be acquired; then it can be applied to help solve social problems. For this to work, authentic objective knowledge must be acquired. Almost paradoxically, human values and aspirations must be excluded from the intellectual domain of inquiry so that genuine factual knowledge is acquired and inquiry can be of genuine human value, and can be capable of helping us realize our human aspirations.5

This is the conception of inquiry which, I claim, violates reason in a wholesale, structural and damaging manner. What do I mean by “reason”? As I use the term here, rationality appeals to the idea that there are general methods, rules or strategies which, if put into practice, give us our best chance, other things being equal, of solving our problems, realizing our aims. Rationality is an aid to success, but does not guarantee success, and does not determine what needs to be done.6

Four elementary rules of reason, alluded to above, are:

1. Articulate and seek to improve the articulation of the basic problem(s) to be solved.
2. Propose and critically assess alternative possible solutions.
3. When necessary, break up the basic problem to be solved into a number of specialized problems—preliminary, simpler, analogous, subordinate problems—(to be tackled in accordance with rules (1) and (2)), in an attempt to work gradually toward a solution to the basic problem to be solved.

5 For a much more detailed exposition of knowledge-inquiry, or “the philosophy of knowledge”, see Maxwell (1984a or 2007a, chapter 2). For evidence that knowledge-inquiry prevails in academia, see Maxwell (1984a or 2007a chapter 6, 2000a). I do not claim that everything in academia accords with the edicts of knowledge-inquiry. My claim is, rather, that this is the only candidate for rational inquiry in the public arena; it is the dominant view, exercising an all-pervasive influence over academe. Work that does not conform to its edicts has to struggle to survive. But this may be about to change, as we shall see in section 9.
6 For more details concerning this conception of rationality see Maxwell (1984a or 2007a, chapters 4 and 5).
4. Inter-connect attempts to solve the basic problem and specialized problems, so that basic problem-solving may guide, and be guided by, specialized problem-solving.\textsuperscript{7}

Two preliminary points now need to be made.

First, granted that academic inquiry has, as its fundamental aim, to help promote human welfare by intellectual and educational means,\textsuperscript{8} then the problems that inquiry fundamentally ought to try to help solve are problems of living, problems of action. From the standpoint of achieving what is of value in life, it is what we do, or refrain from doing, that ultimately matters. Even where new knowledge and technological know-how are relevant to the achievement of what is of value—as they are in medicine or agriculture, for example—it is always what this new knowledge or technological know-how enables us to do that matters. All the global problems discussed above require, for their resolution, not merely new knowledge, but rather new policies, new institutions, new ways of living. Scientific knowledge, and associated technological know-how have, if anything, as we have seen, contributed to the creation of these problems in the first place. Thus problems of living—problems of poverty, ill-health, injustice, deprivation—are solved by what we do, or refrain from doing; they are not solved by the mere provision of knowledge (except when a problem of living is a problem of knowledge).

Second, in order to achieve what is of value in life more successfully than we do at present, we need to discover how to resolve conflicts and problems of living in more cooperatively rational ways than we do at present. There is a spectrum of ways in which conflicts can be resolved, from murder or all out war at the violent end of the spectrum, via enslavement, threat of murder or war, threats of a less extreme kind, manipulation, bargaining, voting, to cooperative rationality at the other end of the spectrum, those involved seeking, by rational means, to arrive at that course of action which does the best justice to the interests of all those involved. A basic task for a kind of academic inquiry that seeks to help promote human welfare must be to discover how conflict resolution can be moved away from the violent end of the spectrum towards the cooperatively rational end.

Granted this, and granted that the above four rules of reason are put into practice then, at the most fundamental level, academic inquiry needs to:

\textsuperscript{7} Much of Karl Popper’s work is devoted to stressing the importance of the first two of these rules of rational problem-solving (see, for example, Popper, 1963). Popper was too opposed to specialization, however, to give due weight to the importance of rule (3). He did not see that the evils of specialization could be counteracted by putting rule (4) into practice. For Popper’s opposition to specialization see Maxwell (forthcoming).

\textsuperscript{8} This assumption may be challenged. Does not academic inquiry seek knowledge for its own sake—it may be asked—whether it helps promote human welfare or not? In section 6 of the present paper, and elsewhere (Maxwell, 2007a, pp. 17-19, 70-75, 205-213) I argue that wisdom-inquiry does better justice than knowledge-inquiry to both aspects of inquiry, pure and applied. The basic aim of inquiry, according to wisdom-inquiry, is to help us realize what is of value in life, “realize” meaning both “apprehend” and “make real”. “Realize” thus accommodates both aspects of inquiry, “pure” research or “knowledge pursued for its own sake” on the one hand, and technological or “mission-oriented” research on the other—both, ideally, seeking to contribute to what is of value in human life. Wisdom-inquiry, like sight, is there to help us find our way around. And like sight, wisdom-inquiry is of value to us in two ways: for its intrinsic value, and for practical purposes. The first is almost more precious than the second.
1. Articulate, and seek to improve the articulation of, personal, social and global problems of living that need to be solved if the quality of human life is to be enhanced (including those indicated above);

2. Propose and critically assess alternative possible solutions—alternative possible actions, policies, political programs, legislative proposals, ideologies, philosophies of life.

In addition, of course, academic inquiry must:

3. Break up the basic problems of living into subordinate, specialized problems—in particular, specialized problems of knowledge and technology.

4. Inter-connect basic and specialized problem-solving.

Academic inquiry as it mostly exists at present puts (3) into practice to splendid effect. The intricate maze of specialized disciplines devoted to improving knowledge and technological know-how that go to make up current academic inquiry is the result. But, disastrously, what we have at present, academic inquiry devoted primarily to improving knowledge, fails to put (1), (2) and (4) into practice. In pursuing knowledge, academic inquiry may articulate problems of knowledge, and propose and critically assess possible solutions, possible claims to knowledge—factual theses, observational and experimental results, theories. But, as we have seen, problems of knowledge are not (in general) problems of living; and solutions to problems of knowledge are not (in general) solutions to problems of living. In so far as academia does at present put (1) and (2) into practice, in departments of social science and policy studies, it does so only at the periphery, and not as its central, fundamental intellectual task.

In short, academic inquiry devoted primarily to the pursuit of knowledge, when construed as having the basic humanitarian aim of helping to enhance the quality of human life by intellectual means, fails to put the two most elementary rules of reason into practice (rules (1) and (2)). Academic inquiry fails to do (at a fundamental level) what it most needs to do, namely (1) articulate problems of living, and (2) propose and critically assess possible solutions. And furthermore, as a result of failing to explore the basic problems that need to be solved, academic inquiry cannot put the fourth rule of rational problem-solving into practice either, namely (4) inter-connect basic and specialized problem-solving. As I have remarked, three of the four most elementary rules of rational problem-solving are violated. (For a more detailed development of this argument see Maxwell, 1980, 1984a or 2007a, 2004a, 2010a.)

This gross structural irrationality of contemporary academic inquiry has profoundly damaging consequences for humanity. As I have pointed out above, granted that our aim is to contribute to human welfare by intellectual means, the basic problems we need to solve are problems of living, problems of action, not problems of knowledge. In failing to give intellectual priority to problems of living, knowledge-inquiry fails to tackle what most needs to be tackled in order to contribute to human welfare. In devoting itself to acquiring knowledge in a way that is unrelated to sustained concern about what humanity's most urgent problems are, as a result of failing to put (1) and (2) into practice, and thus failing to put (4) into practice as well, the danger is that scientific and technological research will respond to the interests of the powerful and the wealthy, rather than to the interests of the poor, of those most in need. Scientists, officially seeking knowledge of truth per se, have no official grounds for objecting if those who fund
research—governments and industry—decide that the truth to be sought will reflect their interests, rather than the interests of the world’s poor. And priorities of scientific research, globally, do indeed reflect the interests of the first world, rather than those of the third world.  

![Diagram](image-url)

**Figure 1: Wisdom-Inquiry Implementing Problem-Solving Rationality**

Knowledge and technology successfully pursued in a way that is not rationally subordinated to the tackling of more fundamental problems of living, through the failure to put (1), (2) and (4) into practice, is bound to lead to the kind of global problems discussed above, problems that arise as a result of newly acquired powers to act being divorced from the ability to act wisely. The creation of our current global problems, and our inability to respond adequately to these

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9 Funds devoted, in the USA, the UK and some other wealthy countries, to military research are especially disturbing, see Langley (2005) and Smith (2003).
problems, has much to do, in other words, with the long-standing, rarely noticed, structural *irrationality* of our institutions and traditions of learning, devoted as they are to acquiring knowledge dissociated from learning how to tackle our problems of living in more cooperatively rational ways. Knowledge-inquiry, because of its irrationality, is designed to *intensify*, not help *solve*, our current global problems.  

Wisdom-Inquiry: Problem-Solving Version

At once the question arises: What would a kind of inquiry be like that *is* devoted, in a genuinely rational way, to promoting human welfare by intellectual means? The answer is *wisdom-inquiry*.

As a first step at characterizing wisdom-inquiry, we may take knowledge-inquiry (at its best) and modify it just sufficiently to ensure that all four elementary rules of rational problem-solving, indicated above, are built into its intellectual and institutional structure: see Figure 1.

The primary change that needs to be made is to ensure that academic inquiry implements rules (1) and (2). It becomes the fundamental task of social inquiry and the humanities (1) to articulate, and seek to improve the articulation of, our problems of living, and (2) to propose and critically assess possible solutions, from the standpoint of their practicality and desirability. In particular, social inquiry has the task of discovering how conflicts may be resolved in less violent, more cooperatively rational ways. It also has the task of promoting such tackling of problems of living in the social world beyond academe. Social inquiry is, thus, not primarily social *science*, nor, primarily, concerned to acquire knowledge of the social world; its primary task is to promote more cooperatively rational tackling of problems of living in the social world. Pursued in this way, social inquiry is intellectually more fundamental than the natural and technological sciences, which tackle subordinate problems of knowledge, understanding and technology, in accordance with rule (3). In Figure 1, implementation of rule (3) is represented by the specialized problem-solving of the natural, technological and formal sciences, and more specialized aspects of social inquiry and the humanities. Rule (4) is represented by the two-way arrows linking fundamental and specialized problem-solving, each influencing the other.

One can go further. According to this view, the thinking that we engage in as we live, in seeking to realize what is of value to us, is intellectually more fundamental than the whole of academic inquiry (which has, as its basic purpose, to help cooperatively rational thinking and problem-solving in life to flourish). Academic thought emerges as a kind of specialization of personal and social thinking in life, the result of implementing rule (3); this means there needs to be a two-way interplay of ideas, arguments and experiences between the social world and academia, in accordance with rule (4). This is represented, in figure 1, by the two-way arrows linking academic inquiry and the social world.

The natural and technological sciences need to recognize three domains of discussion: evidence, theory, and aims. Discussion of aims seeks to identify that highly problematic region

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10 See Maxwell (1984a or 2007a, chapter 3) for a much more detailed discussion of the damaging social repercussions of knowledge-inquiry.
of overlap between that which is discoverable, and that which it is of value to discover. Discussion of what it is of value to discover interacts with social inquiry, in accordance with rule (4).

**Second Argument: Aim-Oriented Rationality**

So much for my first argument in support of wisdom-inquiry. I come now to my second argument, which appeals to, and modifies, the Enlightenment programme of learning from scientific progress how to achieve social progress towards an enlightened world.

In order to implement this programme properly, it is essential to get the following three steps right.

1. The progress-achieving methods of science need to be correctly identified.
2. These methods need to be correctly generalized so that they become fruitfully applicable to any human endeavour, whatever the aims may be, and not just applicable to the endeavour of improving knowledge.
3. The correctly generalized progress-achieving methods then need to be exploited correctly in the great human endeavour of trying to make social progress towards an enlightened, wise, civilized world.

Unfortunately, the *philosophes* of the 18th century Enlightenment got all three points wrong. And as a result these blunders, undetected and uncorrected, are built into the intellectual-institutional structure of academia as it exists today.¹¹

First, the *philosophes* failed to capture correctly the progress-achieving methods of natural science. From D’Alembert in the 18th century to Popper in the 20th (Popper, 1959, 1963), the widely held view, amongst both scientists and philosophers, has been (and continues to be) that science proceeds by assessing theories impartially in the light of evidence, *no permanent assumption being accepted by science about the universe independently of evidence*. Preference may be given to simple, unified or explanatory theories, but not in such a way that nature herself is, in effect, assumed to be simple, unified or explanatory. This orthodox view, which I call *standard empiricism* is, however, untenable. If taken literally, it would instantly bring science to a standstill. For, given any accepted theory of physics, T, Newtonian theory say, or quantum theory, endlessly many empirically more successful rivals can be concocted which (a) agree with T for phenomena that corroborate T, (b) yield the correct empirical predictions in an ad hoc fashion for any phenomena that ostensibly refute T, (c) disagree with T arbitrarily for some as-yet unobserved phenomena, and (d) have, added on to them, in an ad hoc way, independently testable and corroborated postulates. Rivals concocted in this way successfully predict

¹¹ The blunders of the *philosophes* are not entirely undetected. Karl Popper, in his first four works, makes substantial improvements to the traditional Enlightenment programme (although Popper does not himself present his work in this fashion). Popper first improves traditional conceptions of the progress-achieving methods of science (Popper, 1959). This conception, *falsificationism*, is then generalized to become *critical rationalism*. This is then applied to social, political and philosophical problems (Popper, 1961, 1962, 1963). The version of the Enlightenment programme about to be outlined here can be regarded as a radical improvement of Popper’s version (see Maxwell, 2004a, chapter 3). See also note 3.
everything $T$ successfully predicts; they successfully predict phenomena that ostensibly refute $T$; and they successfully predict phenomena that lie beyond the scope of $T$. If empirical success alone determines what theory is accepted in physics, then any such rival should be preferred to $T$. If this were to happen, physics would be drowned in an ocean of such empirically more successful rival theories.

In practice, these rivals are excluded because they are disastrously disunified. Two considerations govern acceptance of theories in physics: empirical success and unity. In demanding unity, we demand of a fundamental physical theory that it ascribes the same dynamical laws to the phenomena to which the theory applies in addition to empirical success. But in persistently accepting unified theories, to the extent of rejecting disunified rivals that are just as, or even more, empirically successful, physics makes a big persistent assumption about the universe. The universe is such that all disunified theories are false. It has some kind of unified dynamic structure. It is physically comprehensible in the sense that explanations for phenomena exist to be discovered.

But this untestable (and thus metaphysical) assumption that the universe is physically comprehensible is profoundly problematic. Science is obliged to assume, but does not know, that the universe is comprehensible. Much less does it know that the universe is comprehensible in this or that way. A glance at the history of physics reveals that ideas have changed dramatically over time. In the 17th century there was the idea that the universe consists of corpuscles, minute billiard balls, which interact only by contact. This gave way to the idea that the universe consists of point-particles surrounded by rigid, spherically symmetrical fields of force, which in turn gave way to the idea that there is one unified self-interacting field, varying smoothly throughout space and time. Nowadays we have the idea that everything is made up of minute quantum strings embedded in ten or eleven dimensions of space-time. Some kind of assumption along these lines must be made but, given the historical record, and given that any such assumption concerns the ultimate nature of the universe, that of which we are most ignorant, it is only reasonable to conclude that it is almost bound to be false.

The way to overcome this fundamental dilemma inherent in the scientific enterprise is to construe physics as making a hierarchy of metaphysical assumptions concerning the comprehensibility and knowability of the universe, these assumptions asserting less and less as one goes up the hierarchy, and thus becoming more and more likely to be true: see figure 2. In this way a framework of relatively insubstantial, unproblematic, fixed assumptions and associated methods is created within which much more substantial and problematic assumptions and associated methods can be changed, and indeed improved, as scientific knowledge improves.

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12 For a detailed development of this account of theoretical unity see Maxwell (1998 chapter 4, 2004a appendix section 2, 2007a chapter 14, section 2, see also Maxwell 2004c, 2004d, 2011a, and forthcoming).

13 For much more detailed expositions of this argument that physics persistently accepts unified theories even though endlessly many empirically more successful disunified rivals are always available, this implying that physics accepts an unacknowledged metaphysical assumption to the effect that the universe itself has a unified dynamic structure—i.e. is physically comprehensible—see Maxwell (1974, 1984a chapter 9, 2007a chapters 9 and 14, and especially 1998 and 2004a, chapters 1 and 2, and appendix; see also Maxwell 1993a, 1999a, 2000b, 2002c, 2004b, 2005b, 2005d, 2006b, 2010a chapter 5).
Put another way, a framework of relatively unspecific, unproblematic, fixed aims and methods is created within which much more specific and problematic aims and methods evolve as scientific knowledge evolves. (A basic aim of science is to discover in what precise way the universe is comprehensible, this aim evolving as assumptions about comprehensibility evolve.) There is positive feedback between improving knowledge, and improving aims-and-methods, improving knowledge-about-how-to-improve-knowledge. This is the nub of scientific rationality, the methodological key to the unprecedented success of science.\textsuperscript{14} Science adapts its nature to what it discovers about the nature of the universe (see Maxwell, 1974, 1976a, 1984a or 2007a, 1998, 2004a, 2005b, 2007c, 2010a, chapter 5).

This hierarchical conception of physics, which I call \textit{aim-oriented empiricism}, can readily be generalized to take into account problematic assumptions associated with the aims of science having to with values, and the social uses or applications of science. It can be generalized so as to apply to the difference branches of natural science. Different sciences have different specific aims, and so different specific methods although, throughout natural science there is the common meta-methodology of aim-oriented empiricism (Maxwell, 2004a, pp. 41-47). So much for the first blunder of the traditional Enlightenment, and how to put it right.

Second, having failed to identify the methods of science correctly, the philosophes naturally failed to generalize these methods properly. They failed to appreciate that the idea of representing the problematic aims (and associated methods) of science in the form of a hierarchy can be generalized and applied fruitfully to other worthwhile enterprises besides science. Many other enterprises have problematic aims-problematic because aims conflict, and because what we seek may be unrealizable, undesirable, or both. Such enterprises, with problematic aims, would benefit from employing a hierarchical methodology, generalized from that of science, thus making it possible to improve aims and methods as the enterprise proceeds. There is the hope that, as a result of exploiting in life methods generalized from those employed with such success in science, some of the astonishing success of science might be exported into other worthwhile human endeavours, with problematic aims quite different from those of science.

Third, and most disastrously of all, the philosophes failed completely to try to apply such generalized, hierarchical progress-achieving methods to the immense, and profoundly problematic enterprise of making social progress towards an enlightened, wise world. The aim of such an enterprise is notoriously problematic. For all sorts of reasons, what constitutes a good world, an enlightened, wise or civilized world, attainable and genuinely desirable, must be

\textsuperscript{14} Natural science has made such astonishing progress in improving knowledge and understanding of nature because it has put something like the hierarchical methodology of aim-oriented empiricism, indicated here, into scientific practice. Officially, however, scientists continue to hold the standard empiricist view that no untestable metaphysical theses concerning the comprehensibility and knowability of the universe are accepted as a part of scientific knowledge (see Maxwell 2004a, pp. 5-6, especially note 5, and 13-14, note 14). As I have argued elsewhere (Maxwell, 2004a chapter 2, 2008), science would be even more successful, in a number of ways, if scientists adopted and explicitly implemented the hierarchical methodology indicated here.
inherently and permanently problematic.\textsuperscript{15} Here, above all, it is essential to employ the generalized version of the hierarchical, progress-achieving methods of science, designed

\textsuperscript{15} There are a number of ways of highlighting the inherently problematic character of the aim of creating civilization. People have very different ideas as to what does constitute civilization. Most views about what constitutes Utopia, an ideally civilized society, have been unrealizable \textit{and} profoundly undesirable. People's interests, values and ideals clash. Even values that, one may hold, ought to be a part of civilization may clash. Thus freedom and equality, even though inter-related, may nevertheless clash. It would be an odd notion of individual freedom which held that freedom was for some, and not for others; and yet if equality is pursued too single-mindedly this will undermine individual freedom, and will even...
specifically to facilitate progress when basic aims are problematic: see Figure 3. It is just this that the *philosophes* failed to do. Instead of applying the hierarchical methodology to *social life*, the *philosophes* sought to apply a seriously defective conception of scientific method to *social science*, to the task of making progress towards, not a *better world*, but to better *knowledge* of social phenomena. And this ancient blunder, developed throughout the 19th century by J.S. Mill, Karl Marx and many others, and built into academia in the early 20th century with the creation of the diverse branches of the social sciences in universities all over the world, is still built into the institutional and intellectual structure of academia today, inherent in the current character of *social science* (Maxwell, 1984a or 2007a, chapters 3, 6 and 7; 2000a).

Properly implemented, in short, the Enlightenment idea of learning from scientific progress how to achieve social progress towards an enlightened world would involve developing social inquiry, not primarily as *social science*, but rather as *social methodology*, or *social philosophy*. A basic task would be to get into personal and social life, and into other institutions besides that of science-into government, industry, agriculture, commerce, the media, law, education, international relations-hierarchical, progress-achieving methods (designed to improve problematic aims) arrived at by generalizing the methods of science. A basic task for academic inquiry as a whole would be to help humanity learn how to resolve its conflicts and problems of living in more just, cooperatively rational ways than at present. This task would be intellectually more fundamental than the scientific task of acquiring knowledge. Social inquiry would be intellectually more fundamental than physics. Academia would be a kind of people’s civil service, doing openly for the public what actual civil services are supposed to do in secret for governments. Academia would have just sufficient power (but no more) to retain its independence from government, industry, the press, public opinion, and other centres of power and influence in the social world. It would seek to learn from, educate, and argue with the great social world beyond, but would not dictate. Academic thought would be pursued as a specialized, subordinate part of what is really important and fundamental: the thinking that goes on, individually, socially and institutionally, in the social world, guiding individual, social and institutional actions and life. The fundamental intellectual and humanitarian aim of inquiry would be to help humanity acquire wisdom-wisdom being the capacity to realize (apprehend and create) what is of value in life, for oneself and others, wisdom thus including knowledge and technological know-how but much else besides.

undermine equality, in that a privileged class will be required to enforce equality on the rest, as in the old Soviet Union. A basic aim of legislation for civilization, we may well hold, ought to be to increase freedom by restricting it: this brings out the inherently problematic, paradoxical character of the aim of achieving civilization. One thinker who has stressed the inherently problematic, contradictory character of the idea of civilization is Isaiah Berlin (see, for example, Berlin, 1980, pp. 74-79). Berlin thought the problem could not be solved; I, on the contrary, hold that the hierarchical methodology indicated here provides us with the means to learn how to improve our solution to it in real life.
One outcome of getting into social and institutional life the kind of aim-evolving, hierarchical methodology indicated above, generalized from science, is that it becomes possible for us to develop and assess rival philosophies of life as a part of social life, somewhat as theories are developed and assessed within science. Such a hierarchical methodology provides a framework within which competing views about what our aims and methods in life should be—competing religious, political and moral views—may be cooperatively assessed and tested against broadly agreed, unspecific aims (high up in the hierarchy of aims) and the experience of personal and social life. There is the possibility of cooperatively and progressively improving such philosophies of life.

**Figure 3: Hierarchical Social Methodology Generalized from Science**

That ideal, realizable social order (whatever it may be) we ought to try to attain in the long term.

A world in which everyone shares equally in enjoying sustaining and creating what is of value, in so far as this is possible.

A world that is democratic, liberal, just, sustainable, rational and wise.

A world with global democracy that puts the new Enlightenment into practice.

Rival specific ideas for world civilization.

Increasingly restrictive methodological principles.

**Human Experience (History)**

**Policies, projects, new laws, institutions, programmes.**

**Best current specific ideas for world civilization**

**Socialism, Civilization, Nationalism**

**Civilization, Civilization, Civilization**

**Civilization, Civilization**

**Civilization, Civilization**

**Civilization, Civilization**

**Civilization, Civilization, Civilization**

**Level 7**

**Level 6**

**Level 5**

**Level 4**

**Level 3**

**Level 2**

**Level 1**
(views about what is of value in life and how it is to be achieved) much as theories are cooperatively and progressively improved in science. In science, ideally, theories are critically assessed with respect to each other, with respect to metaphysical ideas concerning the comprehensibility of the universe, and with respect to experience (observational and experimental results). In a somewhat analogous way, diverse philosophies of life may be critically assessed with respect to each other, with respect to relatively uncontroversial, agreed ideas about aims and what is of value, and with respect to experience—what we do, achieve, fail to achieve, enjoy and suffer—the aim being to improve philosophies of life (and more specific philosophies of more specific enterprises within life such as government, education or art) so that they offer greater help with the realization of what is of value in life. This hierarchical methodology is especially relevant to the task of resolving conflicts about aims and ideals, as it helps disentangle agreement (high up in the hierarchy) and disagreement (more likely to be low down in the hierarchy).

Wisdom-inquiry, because of its greater rigour, has intellectual standards that are, in important respects, different from those of knowledge-inquiry. Whereas knowledge-inquiry demands that emotions and desires, values, human ideals and aspirations, philosophies of life be excluded from the intellectual domain of inquiry, wisdom-inquiry requires that they be included. In order to discover what is of value in life it is essential that we attend to our feelings and desires. But not everything we desire is desirable, and not everything that feels good is good. Feelings, desires and values need to be subjected to critical scrutiny. And of course feelings, desires and values must not be permitted to influence judgements of factual truth and falsity. Wisdom-inquiry embodies a synthesis of traditional Rationalism and Romanticism. It includes elements from both, and it improves on both. It incorporates Romantic ideals of integrity, having to do with motivational and emotional honesty, honesty about desires and aims; and at the same time it incorporates traditional Rationalist ideals of integrity, having to do with respect for objective fact, knowledge, and valid argument. Traditional Rationalism takes its inspiration from science and method; Romanticism takes its inspiration from art, from imagination, and from passion. Wisdom-inquiry holds art to have a fundamental rational role in inquiry, in revealing what is of value, and unmasking false values; but science, too, is of fundamental importance. What we need, for wisdom, is an interplay of sceptical rationality and emotion, an interplay of mind and heart, so that we may develop mindful hearts and heartfelt minds (Maxwell, 1976a, p. 5). It is time we heal the great rift in our culture, so graphically depicted by Snow (1986).

All in all, if the Enlightenment revolution had been carried through properly, the three steps indicated above being correctly implemented, the outcome would have been a kind of academic inquiry very different from what we have at present, inquiry devoted primarily to the intellectual aim of acquiring knowledge.

**Cultural Dimension of Wisdom-Inquiry**

Wisdom-inquiry does not just do better justice to the social or practical dimension of inquiry than knowledge-inquiry; it does better justice to the “intellectual” or “cultural” aspects as well.

From the standpoint of the intellectual or cultural aspect of inquiry, what really matters is the desire that people have to see, to know, to understand, the passionate curiosity that individuals have about aspects of the world, and the knowledge and understanding that people acquire and
share as a result of actively following up their curiosity. An important task for academic thought in universities is to encourage non-professional thought to flourish outside universities. As Einstein once remarked "Knowledge exists in two forms —lifeless, stored in books, and alive in the consciousness of men. The second form of existence is after all the essential one; the first, indispensable as it may be, occupies only an inferior position" (Einstein, 1973, p. 80).

Wisdom-inquiry is designed to promote all this in a number of ways. It does so as a result of holding thought, at its most fundamental, to be the personal thinking we engage in as we live. It does so by recognizing that acquiring knowledge and understanding involves articulating and solving personal problems that one encounters in seeking to know and understand. It does so by recognizing that passion, emotion and desire, have a rational role to play in inquiry, disinterested research being a myth. Again, as Einstein (1973, p. 11) has put it:

The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of true art and true science. Whoever does not know it and can no longer wonder, no longer marvel, is as good as dead, and his eyes are dimmed.

Knowledge-inquiry, by contrast, all too often fails to nourish "the holy curiosity of inquiry" (Einstein, 1949, p. 17), and may even crush it out altogether. Knowledge-inquiry gives no rational role to emotion and desire; passionate curiosity, a sense of mystery, of wonder, have no place, officially, within the rational pursuit of knowledge. The intellectual domain becomes impersonal and split off from personal feelings and desires; it is difficult for "holy curiosity" to flourish in such circumstances. Knowledge-inquiry hardly encourages the view that inquiry at its most fundamental is the thinking that goes on as a part of life; on the contrary, it upholds the idea that fundamental research is highly esoteric, conducted by physicists in contexts remote from ordinary life. Even though the aim of inquiry may, officially, be human knowledge, the personal and social dimension of this is all too easily lost sight of, and progress in knowledge is conceived of in impersonal terms, stored lifelessly in books and journals. Rare is it for popular books on science to take seriously the task of exploring the fundamental problems of a science in as accessible, non-technical and intellectually responsible a way as possible. Such work is not highly regarded by knowledge-inquiry, as it does not contribute to "expert knowledge".

The failure of knowledge-inquiry to take seriously the highly problematic nature of the aims of inquiry leads to insensitivity as to what aims are being pursued, to a kind of institutional hypocrisy. Officially, knowledge is being sought "for its own sake", but actually the goal may be immortality, fame, the flourishing of one's career or research group, as the existence of bitter priority disputes in science indicates. Education suffers. Science students are taught a mass of established scientific knowledge, but may not be informed of the problems which gave rise to this knowledge, the problems which scientists grappled with in creating the knowledge. Even more rarely are students encouraged themselves to grapple with such problems. And rare, too, is it for students to be encouraged to articulate their own problems of understanding that must, inevitably arise in absorbing all this information, or to articulate their instinctive criticisms of the received body of knowledge. All this tends to reduce education to a kind of intellectual

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16 A recent, remarkable exception is Penrose (2004).
indoctrination, and serves to kill “holy curiosity.” 17 Officially, courses in universities divide up into those that are vocational, like engineering, medicine and law, and those that are purely educational, like physics, philosophy or history. What is not noticed, again through insensitivity to problematic aims, is that the supposedly purely educational are actually vocational as well: the student is being trained to be an academic physicist, philosopher or historian, even though only a minute percentage of the students will go on to become academics. Real education, which must be open-ended, and without any pre-determined goal, rarely exists in universities, and yet few notice. (These considerations are developed further in Maxwell, 1976a; 1984a or 2007a; and 2004a.)

In order to enhance our understanding of persons as beings of value, potentially and actually, we need to understand them empathetically, or “personalistically,” by putting ourselves imaginatively into their shoes, and experiencing, in imagination, what they feel, think, desire, fear, plan, see, love and hate. For wisdom-inquiry, this kind of empathic understanding is rational and intellectually fundamental. Articulating problems of living, and proposing and assessing possible solutions is, we have seen, the fundamental intellectual activity of wisdom-inquiry. But it is just this that we need to do to acquire empathic understanding. Social inquiry, in tackling problems of living, is also promoting empathic understanding of people. Empathic understanding is essential to wisdom. Elsewhere I have argued, indeed, that empathic understanding plays an essential role in the evolution of consciousness. It is required for cooperative action, and even for science. (For a fuller exposition of such an account of empathic or personalistic understanding see Maxwell, 1984a, pp. 171-189 and chapter 10, or 2007a, pp. 194-213 and chapter 10; and 2001a, chapters 5-7 and 9).

Granted knowledge-inquiry, on the other hand, empathic understanding hardly satisfies basic requirements for being an intellectually legitimate kind of explanation and understanding (Maxwell, 1984a, pp. 183-5 or 207a, pp. 206-8). It has the status merely of “folk psychology” on a par with “folk physics.”

Objections

It may be objected that the traditional Enlightenment does not dominate current academic inquiry to the extent that I have assumed. But grounds for holding that it does are given in chapter six of my From Knowledge to Wisdom (Maxwell, 1984a, 2007a). There I looked at the following: (a) books about the modern university; (b) the philosophy and sociology of science; (c) statements of leading scientists; (d) Physics Abstracts; (e) Chemistry, Biology, Geo and Psychology Abstracts; (f) journal titles and contents; (g) books on economics, sociology and psychology; (h) philosophy. In 1984, the year From Knowledge to Wisdom was published, there can be no doubt whatsoever that the traditional Enlightenment (or "the philosophy of knowledge" as I called it in the book) dominated academic inquiry.

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17 I might add that the aim-oriented empiricist conception of science indicated here does better justice to the scientific quest for understanding than does orthodox standard empiricist views (see Maxwell, 1998 chapters 4 and 8, 2004a chapter 2).
Have things changed since then? The revolution advocated by *From Knowledge to Wisdom*, and argued for here, has not occurred. There is still, amongst the vast majority of academics today, no awareness at all that a more intellectually rigorous and humanly valuable kind of inquiry than that which we have at present, exists as an option. In particular, social inquiry continues to be taught and pursued as social *science*, and not as social *methodology*. Fairly recently I undertook an examination, at random, of thirty-four introductory books on sociology, published between 1985 and 1997. Sociology, typically, is defined as "the scientific study of human society and social interactions" (Tischler, 1996, p. 4), as "the systematic, sceptical study of human society" (Macionis and Plummer, p. 4), or as having as its basic aim "to understand human societies and the forces that have made them what they are" (Lenski, 1995, p. 5). Some books take issue with the idea that sociology is the *scientific* study of society, or protest at the male dominated nature of sociology (for example, Abott and Wallace, 1990, p. 3 and p. 1). Nowhere did I find a hint of the idea that a primary task of sociology, or of social inquiry more generally, might be to help build into the fabric of social life progress-achieving methods, generalized from those of science, designed to help humanity resolve its conflicts and problems of living in more cooperatively rational ways than at present.

The tackling of problems of living rather than problems of knowledge does of course go on within the academic enterprise as it is at present constituted, within such disciplines as economics, development studies, policy studies, peace studies, medicine, agriculture, engineering, and elsewhere. But this does not tell against the point that the primary task of academic inquiry at present is, first, to acquire knowledge and technological know-how, and then, second, to apply it to help solve problems of living. It does not, in other words, tell against the point that it is the traditional Enlightenment that is the dominant influence on the nature, the aims and methods, the whole character and structure of academic inquiry.

It may be objected that it is all to the good that the academic enterprise today does give priority to the pursuit of knowledge over the task of promoting wisdom and civilization. Before problems of living can be tackled rationally, knowledge must first be acquired.18

I have six replies to this objection.

*First*, even if the objection were valid, it would still be vital for a kind of inquiry designed to help us build a better world to include rational exploration of problems of living, and to ensure that this guides priorities of scientific research (and is guided by the results of such research).

*Second*, the validity of the objection becomes dubious when we take into account the considerable success people met with in solving problems of living in a state of extreme ignorance, before the advent of science. We still today often arrive at solutions to problems of living in ignorance of relevant facts.

*Third*, the objection is not valid. In order to articulate problems of living and explore imaginatively and critically possible solutions (in accordance with Popper's conception of

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18 This is the objection that most academics will wish to raise against the thesis of this essay. It will be made by all those who hold that academic inquiry quite properly seeks to make a contribution to human welfare by, first, acquiring knowledge and then, secondarily, applying it to help solve human problems.
rationality) we need to be able to act in the world, imagine possible actions and share our imaginings with others: in so far as some common sense knowledge is implicit in all this, such knowledge is required to tackle rationally and successfully problems of living. But this does not mean that we must give intellectual priority to acquiring new relevant knowledge before we can be in a position to tackle rationally our problems of living.

*Fourth*, simply in order to have some idea of what kind of knowledge or know-how it is relevant for us to try to acquire, we must first have some provisional ideas as to what our problem of living is and what we might do to solve it. Articulating our problem of living and proposing and critically assessing possible solutions needs to be intellectually prior to acquiring relevant knowledge simply for this reason: we cannot know what new knowledge it is relevant for us to acquire until we have at least a preliminary idea as to what our problem of living is, and what we propose to do about it. A slight change in the way we construe our problem may lead to a drastic change in the kind of knowledge it is relevant to acquire: changing the way we construe problems of health, to include prevention of disease (and not just curing of disease) leads to a dramatic change in the kind of knowledge we need to acquire (importance of exercise, diet etc.). Including the importance of avoiding pollution in the problem of creating wealth by means of industrial development leads to the need to develop entirely new kinds of knowledge.

*Fifth*, relevant knowledge is often hard to acquire; it would be a disaster if we suspended life until it had been acquired. Knowledge of how our brains work is presumably highly relevant to all that we do but clearly, suspending rational tackling of problems of living until this relevant knowledge has been acquired would not be a sensible step to take. It would, in any case, make it impossible for us to acquire the relevant knowledge (since this requires scientists to act in doing research). Scientific research is itself a kind of action carried on in a state of relative ignorance.

*Sixth*, the capacity to act, to live, more or less successfully in the world, is more fundamental than (propositional) knowledge. Put in Rylean terms, 'knowing how' is more fundamental than 'knowing that' (Ryle, 1949, ch. II). All our knowledge is but a development of our capacity to act. Dissociated from life, from action, knowledge stored in libraries is just paper and ink, devoid of meaning. In this sense, problems of living are more fundamental than problems of knowledge (which are but an aspect of problems of living); giving intellectual priority to problems of living quite properly reflects this point.19

It may be objected that in employing aim-oriented rationality in an attempt to help create a more civilized world, in the way indicated above, the new Enlightenment falls foul of Popper's strictures against Utopian social engineering (Popper, 1969, vol. 1, ch. 9; 1962, pp. 64-92). I have three replies to this objection. First, to the extent that piecemeal social engineering, of the kind advocated by Popper, is indeed the rational way to make progress towards a more civilized world, this will be advocated by wisdom-inquiry. Second, when we take into account the unprecedented global nature of many of our most serious problems, indicated at the beginning of this essay, we may well doubt that piecemeal social engineering is sufficient. Third, Popper's distinction between piecemeal and Utopian social engineering is altogether too crude: it overlooks entirely what has been advocated here, aim-oriented rationalistic social engineering, with its emphasis on developing increasingly cooperatively rational resolutions of human

19 For a development of this point, see Maxwell (1984a, pp. 174-181, or 2007a, pp. 197-205).
conflicts and problems in full recognition of the inherently problematic nature of the aim of achieving greater civilization.20

All those to any degree influenced by Romanticism and the counter-Enlightenment will object strongly to the idea that we should learn from scientific progress how to achieve social progress towards civilization; they will object strongly to the idea of allowing conceptions of rationality, stemming from science, to dominate in this way, and will object even more strongly to the idea, inherent in the new Enlightenment, that we need to create a more aim-oriented rationalistic social world.21

Directed at the traditional Enlightenment, objections of this kind may have some validity; but directed at the new Enlightenment, they have none. As I have emphasized elsewhere, aim-oriented rationality amounts to a synthesis of traditional rationalist and romantic ideals, and not to the triumph of the first over the second. In giving priority to the realization of what is of value in life, and in emphasizing that rationality demands that we seek to improve aims as we proceed, the new Enlightenment requires that rationality integrates traditional Rationalist and Romantic values and ideals of integrity. Imagination, emotion, desire, art, empathic understanding of people and culture, the imaginative exploration of aims and ideals, which tend to be repudiated as irrational by traditional Rationalism, but which are prized by Romanticism, are all essential ingredients of aim-oriented rationality. Far from crushing freedom, spontaneity, creativity and diversity, aim-oriented rationality is essential for the desirable flourishing of these things in life.22

Many historians and sociologists of science deny that there is any such thing as scientific method or scientific progress, and will thus find the basic idea of this essay absurd.23 These writers are encouraged in their views by the long-standing failure of scientists and philosophers of science to explain clearly what scientific method is, and how it is to be justified. This excuse for not taking scientific method and progress seriously is, however, no longer viable: as I have indicated above, reject standard empiricism in all its forms, and it becomes clear how scientific method and progress are to be characterized and justified, in a way which emphasizes the rational interplay between evolving knowledge and evolving aims and methods of science.24 In a world dominated by the products of scientific progress it is quixotic in the extreme to deny that such progress has taken place.

20 For further discussion see Maxwell (1984a, pp. 189-198, or 2007a, pp. 213-21).
22 See Maxwell (1984a, pp. 63-64, pp. 85-91 and pp. 117-118, or 2007a, pp. 75-7, 98-104 and 129-32) for further discussion of this issue. See also Maxwell (1976a, especially chapters 1 and 8-10).
23 Bloor (1976); Barnes and Bloor (1981), Latour (1987), and Feyerabend (1978, 1987). These authors might protest that they do not deny scientific knowledge, method, progress or rationality as such, but deny, merely, that the sociology of knowledge can legitimately appeal to such things, or deny extravagant claims made on behalf of these things. See, however, the sparkling criticism by Sokal and Bricmont (1998 chapter 4).
24 See note 12.
Finally, those of a more rationalist persuasion may object that science is too different from political life for there to be anything worthwhile to be learnt from scientific success about how to achieve social progress towards civilization.\(^2^5\) (a) In science there is a decisive procedure for eliminating ideas, namely, empirical refutation: nothing comparable obtains, or can obtain, in the political domain. (b) In science experiments or trials may be carried out relatively painlessly (except, perhaps, when new drugs are being given in live trials); in life, social experiments, in that they involve people, may cause much pain if they go wrong, and may be difficult to stop once started. (c) Scientific progress requires a number of highly intelligent and motivated people to pursue science on the behalf of the rest of us, funded by government and industry; social progress requires almost everyone to take part, including the stupid, the criminal, the mad or otherwise handicapped, the ill, the highly unmotivated; and in general there is no payment. (d) Scientists, at a certain level, have an agreed, common objective: to improve knowledge. In life, people often have quite different or conflicting goals, and there is no general agreement as to what civilization ought to mean, or even whether it is desirable to pursue civilization in any sense. (e) Science is about fact, politics about value, the quality of life. This difference ensures that science has nothing to teach political action (for civilization). (f) Science is male-dominated, fiercely competitive, and at times terrifyingly impersonal; this means it is quite unfit to provide any kind of guide for life.

Here, briefly, are my replies. (a) Some proposals for action can be shown to be unacceptable quite decisively as a result of experience acquired through attempting to put the proposal into action. Where this is not possible, it may still be possible to assess the merits of the proposal to some extent by means of experience. If assessing proposals for action by means of experience is much more indecisive than assessing scientific theories by means of experiment, then we need, all the more, to devote our care and attention to the former case. (b) Precisely because experimentation in life is so much more difficult than in science, it is vital that in life we endeavour to learn as much as possible from (i) experiments that we perform in our imagination, and (ii) experiments that occur as a result of what actually happens. (c) Because humanity does not have the aptitude or desire for wisdom that scientists have for knowledge, it is unreasonable to suppose that progress towards global wisdom could be as explosively rapid as progress in science. Nevertheless progress in wisdom might go better than it does at present. (d) Cooperative rationality is only feasible when there is the common desire of those involved to resolve conflicts in a cooperatively rational way. (e) Aim-oriented rationality can help us improve our decisions about what is desirable or of value, even if it cannot reach decisions for us. (f) In taking science as a guide for life, it is the progress-achieving methodology of science to which we need to attend. It is this that we need to generalize in such a way that it becomes fruitfully applicable, potentially, to all that we do. That modern science is male-dominated, fiercely competitive, and at times terrifyingly impersonal should not deter us from seeing what can be learned from the progress-achieving methods of science—unless, perhaps, it should turn out that being male-dominated, fiercely competitive and impersonal is essential to scientific method and progress. (But this, I submit, is not the case.)

\(^{2^5}\) Nicholas Rescher (personal communication), Rescher & Durant (1997).
Implications

As I have already indicated, transforming universities so that they put wisdom-inquiry into practice instead of knowledge-inquiry would have implications and repercussions for every branch and aspect of academia—and for the great social world beyond. It would have dramatic consequences for the whole institutional and intellectual structure of academic inquiry, how it is related to government, industry, the public.26

To begin with, I must emphasize, there are intellectual consequences. Wisdom-inquiry is more rigorous than knowledge-inquiry. Whereas knowledge-inquiry violates three of the four most elementary rules of rational problem-solving conceivable, wisdom-inquiry implements all four. Again, whereas knowledge-inquiry disavows, or “represses” real, problematic aims of natural science, and of academic inquiry more generally, wisdom-inquiry acknowledges these aims, provides a meta-methodological framework for their imaginative and critical exploration, thus facilitating the progressive improvement of these aims. This has dramatic consequences for our understanding of science and social inquiry, and for science and social inquiry themselves.

Furthermore, as I have argued at length elsewhere,27 fundamental intellectual problems concerning the nature of science, and of inquiry more generally, are readily solved granted aim-oriented empiricism and wisdom-inquiry; these problems cannot be solved granted standard empiricism and knowledge-inquiry, and they have resisted resolution for centuries precisely because these latter views have been taken for granted. Most notably, the problems of induction, verisimilitude and simplicity, solved by aim-oriented empiricism, cannot be solved granted standard empiricism.28 This constitutes dramatic intellectual grounds for rejecting standard empiricism and adopting and implementing aim-oriented empiricism in its stead.

The transition from standard to aim-oriented empiricism has implications, not just for our understanding of science, but also for science itself. Aim-oriented empiricism, as a result of making explicit problematic and implicit metaphysical assumptions of physics, provides theoretical physics with a fallible, non-mechanical, but nevertheless rational method for the discovery of fundamental new theories. In requiring, for rigour, that theoretical physics should include discussion of metaphysical, methodological, philosophical and epistemological ideas, aim-oriented empiricism transforms physics into something close to the natural philosophy of Newton’s time. There is an astonishing extension in the scope of scientific knowledge: aim-oriented empiricism implies that science has already established (in so far as anything theoretical is established in science) that the universe is physically comprehensible. This is an item of

26 See especially Maxwell (1984a or, better, 2007a). See also Maxwell (2010a chapters 6 and 9).
28 The problem of induction can be formulated as the problem of how physical theories can be verified empirically granted we only ever have a vanishingly small amount of evidence in support of them. (Solution: Maxwell, 2005d, 2007a, pp. 400-430.) The problem of verisimilitude is the problem of what it means to say theoretical physics makes progress if it advances from one false theory to another. (Solution: Maxwell, 2007a, pp. 393-400 and 430-423.) The problem of simplicity is the problem of explicating what it means to say that a physical theory is simple, or unified, when any theory can be formulated in a variety of ways, some simple, many highly complex. (Solution: Maxwell, 1998 chapter 4, 2007a, pp. 373-386.)
current (conjectural) scientific knowledge (Maxwell, 1998). New possibilities emerge. I have indicated a way in which the universe may be physically comprehensible that differs dramatically from the traditional view. Instead of the underlying unity in the universe being the unity—the invariance—of basic dynamical laws, it rather consists in the unity of a very special state of the universe, namely the big bang state.29 Articulating implicit metaphysical ideas of physics even has potential implications for quantum theory. In a long series of papers, I have argued that adoption of a fundamentally probabilistic metaphysics provides a possible solution to the quantum wave/particle problem and leads to a fully micro-realistic version of quantum theory, free of defects that plague orthodox quantum theory, which captures all the empirical success of the orthodox theory but is empirically distinct from the orthodox theory for as yet unperformed experiments.30

Elsewhere, I have argued that aim-oriented empiricism and wisdom-inquiry have intellectual implications for a wide range of disciplines: for mathematics,31 for neuroscience,32 for evolutionary theory,33 for psychology, sociology, economics and political science,34 and for philosophy. The whole character of philosophy is transformed.35

Here, now, are fifteen broad ways in which academic inquiry must change if aim-oriented empiricism and wisdom-inquiry are to be put into academic practice.

1. There needs to be a change in the basic intellectual aim of inquiry, from the growth of knowledge to the growth of wisdom—wisdom being taken to be the capacity to realize what is of value in life, for oneself and others, and thus including knowledge, understanding and technological know-how. (Whereas knowledge-inquiry sharply distinguishes the intellectual and social aims of academia, wisdom-inquiry holds them to be one and the same: wisdom.)

2. There needs to be a change in the nature of academic problems, so that problems of living are included, as well as problems of knowledge. Furthermore, problems of living need to be treated as intellectually more fundamental than problems of knowledge.

3. There needs to be a change in the nature of academic ideas, so that proposals for action are included as well as claims to knowledge. Furthermore, proposals for action need to be treated as intellectually more fundamental than claims to knowledge.

29 See Maxwell (2004a, pp. 198-205).
31 Maxwell (2010c).
32 Maxwell (1985b, 2001 chapter 8).
34 Maxwell (1984a or 2007a chapters 4, 5, 7 and 8, 2001a chapter 3, 2004a chapters 3 and 4, 2010a chapters 6 and 9).
35 See, for example, Maxwell (2001a, pp. 3-6). Maxwell (2010a), especially, is intended to exemplify what I think philosophy ought to be: the attempt to clarify, and help solve, our most fundamental, urgent, general problems so that there are fruitful implications for diverse aspects of life. Indeed, all my books seek to do this. For too long, academic philosophy has been prevented from doing this, openly and clearly, by the lingering, crippling influence of “analytic philosophy” with its absurd idea that the basic task should be the analysis of concepts. This obscures rather than clarifies fundamental problems.
4. There needs to be a change in what constitutes intellectual progress, so that progress-in-ideas-relevant-to-achieving-a-more-civilized-world is included as well as progress in knowledge, the former being indeed intellectually fundamental.

5. There needs to be a change in the idea as to where inquiry, at its most fundamental, is located. It is not esoteric theoretical physics, but rather the thinking we engage in as we seek to achieve what is of value in life.

6. There needs to be a dramatic change in the nature of social inquiry (reflecting points 1 to 5). Economics, politics, sociology, and so on, are not, fundamentally, sciences, and do not, fundamentally, have the task of improving knowledge about social phenomena. Instead, their task is threefold. First, it is to articulate problems of living, and propose and critically assess possible solutions, possible actions or policies, from the standpoint of their capacity, if implemented, to promote wiser ways of living. Second, it is to promote such cooperatively rational tackling of problems of living throughout the social world. And third, at a more basic and long-term level, it is to help build the hierarchical structure of aims and methods of aim-oriented rationality into personal, institutional and global life, thus creating frameworks within which progressive improvement of personal and social life aims-and-methods becomes possible. These three tasks are undertaken in order to promote cooperative tackling of problems of living—but also in order to enhance empathic or “personalistic” understanding between people as something of value in its own right. Acquiring knowledge of social phenomena is a subordinate activity, engaged in to facilitate the above three fundamental pursuits.

7. Natural science needs to change, so that it includes at least three levels of discussion: evidence, theory, and research aims. Discussion of aims needs to bring together scientific, metaphysical and evaluative consideration in an attempt to discover the most desirable and realizable research aims. It needs to influence, and be influenced by, exploration of problems of living undertaken by social inquiry and the humanities, and the public.

8. There needs to be a dramatic change in the relationship between social inquiry and natural science, so that social inquiry becomes intellectually more fundamental from the standpoint of tackling problems of living, promoting wisdom.

9. The way in which academic inquiry as a whole is related to the rest of the human world needs to change dramatically. Instead of being intellectually dissociated from the rest of society, academic inquiry needs to be communicating with, learning from, teaching and arguing with the rest of society—in such a way as to promote cooperative rationality and social wisdom. Academia needs to have just sufficient power to retain its independence from the pressures of government, industry, the military, and public opinion, but no more. Academia becomes a kind of civil service for the public, doing openly and independently what actual civil services are supposed to do in secret for governments.

10. There needs to be a change in the role that political and religious ideas, works of art, expressions of feelings, desires and values have within rational inquiry. Instead of being excluded, they need to be explicitly included and critically assessed, as possible indications and revelations of what is of value, and as unmasking of fraudulent values in satire and parody, vital ingredients of wisdom.

11. There need to be changes in education so that, for example, seminars devoted to the cooperative, imaginative and critical discussion of problems of living are at the heart of all

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36 See Maxwell (1984a, pp. 171-189 and chapter 10, or 2007a, pp. 194-213 and chapter 10; and 2001a chapters 5-7 and 9).
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education from five-year-olds onwards.\(^{37}\) Politics, which cannot be taught by knowledge-inquiry, becomes central to wisdom-inquiry, political creeds and actions being subjected to imaginative and critical scrutiny.

12. There need to be changes in the aims, priorities and character of pure science and scholarship, so that it is the curiosity, the seeing and searching, the knowing and understanding of individual persons that ultimately matters, the more impersonal, esoteric, purely intellectual aspects of science and scholarship being means to this end. Social inquiry needs to give intellectual priority to helping empathic understanding between people to flourish (as indicated in 6 above).

13. There need to be changes in the way mathematics is understood, pursued and taught. Mathematics is not a branch of knowledge at all. Rather, it is concerned to explore problematic possibilities, and to develop, systematize and unify problem-solving methods.\(^{38}\)

14. Literature needs to be put close to the heart of rational inquiry, in that it explores imaginatively our most profound problems of living and aids personalistic understanding in life by enhancing our ability to enter imaginatively into the problems and lives of others.

15. Philosophy needs to change so that it ceases to be just another specialized discipline and becomes instead that aspect of inquiry as a whole that is concerned with our most general and fundamental problems—those problems that cut across all disciplinary boundaries. Philosophy needs to become again what it was for Socrates: the attempt to devote reason to the growth of wisdom in life.\(^{39}\)

In addition, the following four institutional innovations ought also to be made to help wisdom-inquiry to flourish:

16. Natural science needs to create committees, in the public eye, and manned by scientists and non-scientists alike, concerned to highlight and discuss failures of the priorities of research to respond to the interests of those whose needs are the greatest—the poor of the earth—as a result of the inevitable tendency of research priorities to reflect the interests of those who pay for science, and the interests of scientists themselves.

17. Every university needs to create a seminar or symposium devoted to the sustained discussion of fundamental problems that cut across all conventional academic boundaries, global problems of living being included as well as problems of knowledge and understanding.

18. Every national university system needs to include a national shadow government, seeking to do, virtually, free of the constraints of power, what the actual national government ought to be doing. The hope would be that virtual and actual governments would learn from each other.

19. The world’s universities need to include a virtual world government which seeks to do what an actual elected world government ought to do, if it existed. The virtual world

\(^{37}\) For wisdom-inquiry for five-year olds, see Maxwell (2005b).

\(^{38}\) For a sketch of wisdom-inquiry mathematics see Maxwell (2010e).

\(^{39}\) See especially Maxwell (1980 and 2010a). See, also, note 34.
government would also have the task of working out how an actual democratically elected world government might be created.  

**Recent Indications that the Revolution May Be Underway**

My efforts to start up a campaign to transform academia so that it becomes an educational resource to help humanity learn how to create a better world have not met with much success. I am not aware of any discipline, or any department in any university, that has changed as a result of my work. Few academics have even heard of my work. Even philosophers, aside from a few notable exceptions, seem to be, by and large, ignorant of it, or indifferent to it—especially disappointing in view of the fact that the argument for the intellectual revolution is profoundly philosophical in character. And not just the argument: the outcome, the new conception of inquiry I argue for—*wisdom-inquiry* as it may be called—is, I claim, quintessentially philosophical in that it is the solution to a profoundly significant philosophical problem: *What kind of inquiry can best help us make progress towards a civilized world?*

Viewed from another perspective, however, my call for a revolution, for the implementation of wisdom-inquiry, has been astonishingly successful. During the last 10-20 years, numerous changes have occurred in academia that amount to a shift towards wisdom-inquiry—whether or not in response to any of my work. In what follows I concentrate on universities in the UK.

Perhaps the most significant of these steps is the creation of departments, institutions and research centres concerned with social policy, environmental degradation, climate change, poverty, injustice and war, and other matters such as medical ethics and community health.

At Cambridge University, one can see the first hints of the institutional structure of wisdom-inquiry being superimposed upon the existing structure of knowledge-inquiry. As I have emphasized, wisdom-inquiry puts the intellectual tackling of problems of living at the heart of academic inquiry, this activity being conducted in such a way that it both influences, and is influenced by, more specialised research. Knowledge-inquiry, by contrast, organises intellectual activity into the conventional departments of knowledge: physics, chemistry, biology, history and the rest, in turn subdivided, again and again, into increasingly specialised research disciplines. But this knowledge-inquiry structure of ever more specialised research is hopelessly inappropriate when it comes to tackling problems of living. In order to tackle environmental

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40 For further discussion of changes that would need to be made for universities to implement wisdom-inquiry, see Maxwell (1984a or 2007a, 2004, 2010a especially chapter 9).
41 Mary Midgely (1986), said of my *From Knowledge to Wisdom*, “a strong effort is needed if one is to stand back and clearly state the objections to the whole enormous tangle of misconceptions which surround the notion of science today. Maxwell has made that effort in this powerful, profound and important book”. Others who have published highly favourable comments on my work include: Leemon McHenry, George F. Kneller, Christopher Longuet-Higgins, J. J. C. Smart, Daniel Dennett, Alasdair MacIntyre, David Hodgson, Brian Easlea, John Hendry, Jerry Ravetz, Noretta Koertge, Cory F. Juhl, Anjan Chakravartty, Sherrilyn Roush, F.A. Muller, Niall Shanks, Clare McNiven and Margret Grebowicz (see www.nick-maxwell.demon.co.uk/Reviews.htm). Iredale (2007) discusses some work influenced by my ideas. See, too, Leemon (2009).
42 See Iredale (2007) and Macdonald (2009) for developments of this point.
problems, for example, in a rational and effective way, specialized research into a multitude of different fields, from geology, engineering and economics to climate science, biology, architecture and metallurgy, needs to be connected to, and coordinated with, the different aspects of environmental problems. The sheer urgency of environmental problems has, it seems, forced Cambridge University to create the beginnings of wisdom-inquiry organization to deal with the issue. The “Cambridge Environmental Initiative” (CEI), launched in December 2004, distinguishes seven fields associated with environmental problems: conservation, climate change, energy, society, water waste built environment and industry, natural hazards, society, and technology, and under these headings, coordinates some 102 research groups working on specialized aspects of environmental issues in some 25 different (knowledge-inquiry) departments. The CEI holds seminars, workshops and public lectures to put specialized research workers in diverse fields in touch with one another, and to inform the public.

A similar coordinating, interdisciplinary initiative exists at Oxford University. This is the School of Geography and the Environment, founded in 2005 under another name. It is made up of five research “clusters”, two previously established research centres, the Environmental Change Institute (founded in 1991) and the Transport Studies Institute, and three inter-departmental research programmes, the African Environments Programme the Oxford Centre for Water Research, and the Oxford branch of the Tyndall Centre (see below). The School has links with other such research centres, for example the UK Climate Impact Programme and the UK Energy Research Centre.

At Oxford University there is also the James Martin 21st Century School, founded in 2005 to “formulate new concepts, policies and technologies that will make the future a better place to be”. It is made up of fifteen Institutes devoted to research that ranges from ageing, armed conflict, cancer therapy and carbon reduction to nanoscience, oceans, science innovation and society, the future of the mind, and the future of humanity. At Oxford there is also the Smith School of Enterprise and the Environment, founded in 2008 to help government and industry tackle the challenges of the 21st century, especially those associated with climate change.

Similar developments have taken place recently at my own university, University College London. Not only are there over 141 research institutes and centres at UCL, some only recently founded, many interdisciplinary in character, devoted to such themes as ageing, cancer, cities, culture, public policy, the environment, global health, governance, migration, and security. In addition, very recently, the attempt has been made to organize research at UCL around a few broad themes that include: global health, sustainable cities, intercultural interactions, and human wellbeing. This is being done so that UCL may all the better contribute to solving the immense global problems that confront humanity.

On the UCL website, the rationale for the global challenges initiative is spelled out in a way which echoes the case for wisdom-inquiry:

43 For the fundamental importance of interconnecting work on broad and specialized problems, see Maxwell (1980).
44 See www.cei.group.cam.ac.uk/.
The world is in crisis. Billions of us suffer from illness and disease, despite applicable
preventions and cures. Life in our cities is under threat from dysfunctionality and climate
change. The prospect of global peace and cooperation remains under assault from tensions
between our nations, faiths and cultures. Our quality of life—actual and perceived—
diminishes despite technological advances. These are global problems, and we must
resolve them if future generations are to be provided with the opportunity to flourish.45

These developments, echoed in many other UK universities, can be regarded as first steps
towards implementing wisdom-inquiry.

Equally impressive is the John Tyndall Centre for Climate Change Research, founded by 28
scientists from ten different institutions in 2000. It is based in six British universities, has links
with six others, and is funded by three research councils: the Natural Environment Research
Council (NERC), the Engineering and Physical Sciences Research Council (EPSRC) and the
Economic and Social Research Council (ESRC). The centre “brings together scientists,
economists, engineers and social scientists, who together are working to develop sustainable
responses to climate change through trans-disciplinary research and dialogue on both a national
and international level [including] […] with business leaders, policy advisors, the media and the
public in general”.46 It is clear from the centre’s own account47 that innovations in its work are
strikingly in accordance with basic features of wisdom-inquiry. We have here, perhaps, the real
beginnings of wisdom-inquiry being put into academic practice.

A similar organisation, modeled on the Tyndall Centre, is the UK Energy Research Centre
(UKERC), launched in 2004, and also funded by NERC, EPSRC and ESRC. Its mission is to be
a “centre of research, and source of authoritative information and leadership, on sustainable
energy systems”.48 The UKERC coordinates research in some twelve British universities or
research institutions and has also launched the National Energy Research Network (NERN),
which seeks to link up the entire energy community, including people from academia,
government, non-governmental organisations and business.

Another possible indication of a modest step towards wisdom-inquiry is the growth of peace
studies and conflict resolution research. In the UK, the Peace Studies Department at Bradford
University has quadrupled in size since 1984,49 and is now the largest university department in
this field in the world. INCORE, an International Conflict Research project, was established in
1993 at the University of Ulster in Northern Ireland, in conjunction with the United Nations
University. It develops conflict resolution strategies and aims to influence policymakers and
others involved in conflict resolution. Like the newly created environmental institutions just
considered, INCORE is highly interdisciplinary in character, in that it coordinates work across
the traditional knowledge departments of history, policy studies, politics, international affairs,

45 http://www.ucl.ac.uk/grand-challenges/. I gather this grand challenges initiative has been influenced by
my work.
46 www.tyndall.ac.uk/general/about.shtml.
47 Tyndall Centre, ed., Truly Useful, (UK, Tyndall Centre).
49 Professor Paul Rogers, personal communication.
sociology, geography, architecture, communications and social work as well as in peace and conflict studies.

Peace studies have also grown during the last two decades at Sussex University, Kings College London, Leeds University, Coventry University and London Metropolitan University. Recently created UK centres in the field include the Centre for Peace and Reconciliation Studies at Warwick University; the Desmond Tutu Centre for War and Peace at Liverpool Hope University; the Praxis Centre at Leeds Metropolitan University; the Crime and Conflict Centre at Middlesex University; and the International Boundaries Research Unit at Durham University.50

There are further indications of a general movement towards aspects of wisdom-inquiry. Demos, an independent UK think tank has, in recent years, convened conferences on the need for more public participation in discussion of the aims and priorities of scientific research and greater openness of science to the public.51 This has been taken up by the Royal Society, which, in 2004, published a report on the potential benefits and hazards of nanotechnology produced by a group consisting of both scientists and non-scientists. The Royal Society also created a ‘Science in Society Programme’ in 2000, with the aims of promoting ‘dialogue with society’, of involving ‘society positively in influencing and sharing responsibility for policy on scientific matters’, and of embracing ‘a culture of openness in decision-making’ which takes into account ‘the values and attitudes of the public.’

A similar initiative is the “science in society” research programme funded by the ESRC, which, in late 2007, produced six booklets on various aspects of the relationship between science and society. Many scientists now appreciate that non-scientists ought to contribute to discussions concerning science policy. There is a growing awareness among scientists and others of the role that values play in science policy, and of the importance of subjecting medical and other scientific research to ethical assessment. That universities are becoming increasingly concerned about these issues is indicated by the creation, in recent years, of many departments of science, technology and society in the UK, the USA and elsewhere, their focus being interactions between science and society.

There are two initiatives that I have been involved with personally. The first is a new international group of some 230 scholars and educationalists called Friends of Wisdom, “an association of people sympathetic to the idea that academic inquiry should help humanity acquire more wisdom by rational means”.52 The second is a special issue of the journal London Review of Education, which was devoted to the theme ‘wisdom in the university’, and which appeared in June 2007.53 By coincidence, another academic journal, Social Epistemology, brought out a special issue on a similar theme in the same month.54 Later that year, History and Policy was

50 For an account of the birth and growth of peace studies in universities see Rogers (2006).
51 See Wilsdon Willis (2004).
52 See www.knowledgetowisdom.org/.
launched, a new initiative that seeks to bring together historians, politicians and the media, to work “for better public policy through an understanding of history.”

**Conclusion**

Our only hope of solving our problems successfully lies in tackling them *democratically.* This in turn requires that a majority of people on earth have a good understanding of what our problems are, and what we need to do about them. Democratically elected governments are unlikely to be able to do what is required if the people who elect them do not understand what our problems are, and what we need to do to resolve them. This in turn requires that we have in existence institutions of learning rationally devoted to helping humanity come to understand what our problems are, and what needs to be done to solve them. It is just this that we do not have at present. Instead we have institutions of learning devoted to the pursuit of *knowledge.* But it is knowledge and technological know-how, and the power that these engender in the absence of wisdom, that have made possible the creation of our current global problems.

We urgently need to bring about a revolution in our schools and universities so that they come to seek and promote wisdom by rational means. Almost every branch and aspect of academic inquiry needs to change.

This revolution—intellectual, institutional and cultural—if it ever comes about, will be comparable in its long-term impact to that of the Renaissance, the scientific revolution, or the Enlightenment. The outcome will be traditions and institutions of learning rationally designed to help us realize what is of value in life. There are a few scattered signs that this intellectual revolution, from knowledge to wisdom, is already under way. It will need, however, much wider cooperative support—from scientists, scholars, students, research councils, university administrators, vice chancellors, teachers, the media and the general public—if it is to become anything more than what it is at present, a fragmentary and often impotent movement of protest and opposition, often at odds with itself, exercising little influence on the main body of academic work. I can hardly imagine any more important work for anyone associated with academia than, in teaching, learning and research, to help promote this revolution.

**Epilogue**

A few words, finally, about developments that have, and have not, taken place during the two years since the above was finished in 2010. I have continued to publish articles expounding the argument for the urgently needed revolution from knowledge-inquiry to wisdom-inquiry whenever the opportunity presented itself (see Maxwell, 2010f; 2010g; 2010h; 2011a; 2011b; 2011c; 2012a; 2012b; 2012c). Julian Baggini, editor of *The Philosophers’ Magazine,* asked me to contribute to a special issue devoted to “The best ideas of the 21st century”. I contributed an exposition of wisdom-inquiry (Maxwell, 2010i). A mini-symposium took place in the pages of *Philosophia* on the book *Science and the Pursuit of Wisdom,* edited by Leemon McHenry (2009), devoted to my work, see Vicente (2010), Pandit (2010), and my reply (Maxwell, 2010j). During this period, I have given lectures on the profoundly important need to revolutionize academia

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55 See www.historyandpolicy.org/.
and put wisdom-inquiry into practice in Boston, London, Brighton, Poznan, Newport, Cambridge, Winchester, Warsaw, Taiwan, Toronto, Loughborough, the Hay-on-Wye Festival, and up a tree in Regents Park, London. I have held a seminar on “Thinking about Fundamental Problems” at the Free University, an offshoot of the Occupy the City of London movement. *Friends of Wisdom* has grown during the two years in question from 230 members to 312. The Grand Challenges Programme at University College London, under the excellent directorship of David Price, vice-provost for research, continues to be influenced by my work. On the UCL website, there is a heading “the wisdom agenda”\(^5^6\) which, if clicked, brings up a policy document which spells out the need to develop a culture of wisdom at UCL. In June 2010 I interviewed David Price and his team about the Grand Challenges Programme for a chapter of a book (see Maxwell, 2012d, pp. 171-177, for the text of the interview).

Perhaps most remarkably, from my point of view at least, is the publication of my intellectual autobiography, “Arguing for Wisdom in the University” which, together with an accompanying paper “In Praise of Natural Philosophy” comes to over 30,000 words. What is remarkable is that these papers are published in an academic journal—the philosophy journal *Philosophia* (see Maxwell, 2012e; 2012f). The autobiography begins as an outraged cry of protest at the way philosophers especially have ignored the argument for the urgent need for an academic revolution. I then give an account of how I came to develop the argument, going back to my childhood. It has been a life’s work. I explain how, after I had made the first explosive discovery, I came across the work of Karl Popper and was led to revise and develop my ideas as a result of what I learned from him.

I am not alone in appreciating the almost desperately urgent need to transform academia world-wide. Others too can see, all too clearly, what is so clear to me. We are heading towards disaster.\(^5^7\) Much of the fault lies with our institutions of learning which at present betray both reason and humanity. In order to solve the immense global problems we face, we need to learn how to do it, which in turn means that our institutions of learning, our universities and schools, need to be well-designed, rationally designed and devoted to helping us tackle our problems of living, personal and global, in increasingly cooperative, intelligent, effective and humane ways—in increasingly *wise* ways. It is this that we do not have. Instead our universities seek knowledge and technological know-how. Both are vital. But the pursuit of knowledge dissociated from the more fundamental search for what is of value in life and how it is to be realized—dissociated from a more fundamental concern to help solve problems of living—is a *recipe for disaster*. Knowledge brings power to act, but not of itself power to act *wisely*. The genesis of all our current and impending global problems can be traced back to the profoundly damaging irrationality of our universities, devoted as they are to the pursuit of knowledge dissociated from the more fundamental concern to help solve problems of living.

Those of us who see all this are scattered about in and out of universities. We are relatively few and far between, and the existing channels of communication work against us. So far we have failed to get an awareness of the profound importance of transforming universities so that they put wisdom-inquiry into practice, into the public arena. The idea, at present, is simply not

\(^{56}\) See [www.ucl.ac.uk/research/wisdom-agenda](http://www.ucl.ac.uk/research/wisdom-agenda)

\(^{57}\) Anyone who has any doubt about this should read Bill McKibben’s article ‘Global Warming’s Terrifying New Math’ (McKibben, 2012).
available, even for public debate and discussion. It does not even get a mention in academic courses on philosophy. Stanford’s online Encyclopedia only has an entry on “wisdom” because I suggested it to them. I feel—as no doubt others do too—an almost crushing burden of responsibility for this failure to get the basic idea into the public arena. What we need is for a sufficiently large group of high-profile academics and others to make out the case, again and again, in as public a way as possible, for the urgent need for change. Then the revolution we require might begin to come about. In the absence of such a high-profile campaign, we will continue to go along the path we pursue at present: heading towards disaster, academia making one step forwards in a muddled, ad hoc fashion, and two steps backwards.

What we need are academics that begin to shout from the rooftops about the desperately urgent need for the revolution in our universities.

References


Maxwell, N. (1999a). Has science established that the universe is comprehensible?. *Cogito*, 13, 139-145.


Maxwell, N. (2004c). Non-empirical requirements scientific theories must satisfy: simplicity, unification, explanation, beauty (available online at: http://philsci-archive.pitt.edu/archive/00001759/).


Towards A New Art of Integration

Ananta Kumar Giri

Everlastingly chained to a single little fragment of the Whole, man himself develops into nothing but the little fragment; everlastingly in his ear the monotonous sound of the wheel he turns, he never develops harmony of his being, and instead of putting the stamp of humanity upon his own nature, he becomes nothing more than the imprint of his occupation or of his specialized knowledge. But even that meager, fragmentary participation, by which individual members of the State are still linked to the Whole, does not depend upon forms which they spontaneously prescribe for themselves [...] it is dictated to them with meticulous exactitude by means of a formulary which inhibits all freedom of thought. The dead letter takes the place of living understanding [...]. (Friedrich Schiller, 1982 [1795]), p. 43)

The present profound malaise is really a form of growing pains. The new world for which the old world is in travail is still like an embryo. The components are all there; what is lacking is the integration, the completeness which is organic consciousness, binding together of the different elements, making them breathe and come to life. (S. Radhakrishnan, 1940, p. 91)

[...] integration need not demand a unitary singularity but can find expression in partial, local and even fractal possibilities. Such a soft wholeness joyfully embraces difference and multiplicity as expressions of the possibilities of wholeness where the uni-versal allows in the multi-versality of the kaleidoscopic dance of consciousness. (Marcus Bussey, 2012, p. 3)

Introduction and Invitation

Integration is an important calling of life, self, culture, society and the world. But its significance is rarely realized especially in our present day world as we live a fragmentary existence and valorize differences. Social and discursive movements in the last half a century have rightly challenged us to cultivate differences but cultivation of difference is different from valorization. Differences also have threads of connections among them—they also seek to be part of a respectful and dignified emergent wholeness. Differences are also part of an emergent journey of integration, an integration which does not suppress differences but which build upon their flourishing. This calls for a new art of cultivation of identity and differences and making both co-travelers and co-painters in a new art of integration which may be called differential

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integration. It is a new art of integration which is not totalitarian and oppressive but rather seeks to help us realize our connectedness and potentiality. This can help us in creatively crossing our boundaries and learn across.

This new art of integration which invites us now is different from the earlier discourses and practices of integration which were imprisoned in a logic and machinery of strong integration. It is an art of weak and gentle integration compared to the telos of strong integration in modern self, society and polity. The discourse of integration in social sciences as well as in the wider public discourse in modernity, for example, in the discourse of nationalism and self, has been imprisoned in a logic of strong integration which has been source of much violence, suffering and annihilation of potentiality. It has been imprisoned in a logic of assertive and exclusionary sovereignty (cf. Giri, 2009a). In this place we need to cultivate an art of weak and gentle integration where integration begins with realization of weakness\(^2\) and vulnerability and where this acknowledged vulnerability becomes the lubricant and binding thread for integration as an unfolding, evolving and emergent journey of realization of connectedness and wholeness. This is facilitated by transformation of sovereignty to shared sovereignties and realizing non-sovereignty (cf. Dallmayr, 2005). If sovereignty propounds the cult of mastery, non-sovereignty urges us to serve and share which help us in our art of gentle and weak integration. This involves artistic processes of creativity and nurturance and is facilitated by the work of creative art in politics, society and spirituality (cf. Ankersmit, 1996).

In this essay I explore pathways of a new art of integration and then explore how it can help our learning across boundaries.

Cultivating Weak and Gentle Integration

As we explore pathways of a new art of integration, it is helpful to begin with earlier sociological discourses about it. David Lockwood had distinguished between social and system integration:

Social integration refers to the principles by which individuals or actors are related to one another in a society; system integration refers to the relationships between parts of a society or social system. Despite the use of the word ‘integration’ there is no assumption that the relationships so described are harmonious. The terms social integration and system integration can embrace both order and conflict, harmony and contradiction. (Scott & Marshall, 2009, par. 2)

This distinction has influenced the subsequent distinction of Habermas between system world and life world. But in this essay I am concerned not only with the distinction between life world or system world nor between social and system integration. I explore a new art of integration in

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\(^2\) Cultivating weakness becomes a deliberate act of choice and responsibility given the cult of mastery and strength throughout histories especially in the modern times. Cultivating weakness belongs to long spiritual traditions of humanity where one wishes not to have an overbearing and overpowering presence rather than be weak.
both the spheres of the social and the systemic, life world and system world, in the process helping us to overcome the boundaries between them and learn across.

A new art of integration is a weak and gentle one. Cultivating weak and gentle integration is facilitated by building on and cultivating weakness in different domains of life and thought, for example, weak naturalism, weak nationalism, weak epistemology, weak ontology, weak identity, weak difference, weak theology and weak pedagogy. Weak naturalism as a companion in quest for weak integration helps us realize that we are part of nature but we are not determined by it and we should eschew the arrogance of human mastery and social control (Habermas, 2003; Strydom, 2009, 2011). Habermas has recently explored weak naturalism which tells us how we are socialized into an irreducible normative ‘space of reasons’ in a way that is consistent with our being products of natural evolution thereby reconciling Kant with Darwin and establishing the ‘right way to naturalize the mind.’ (Flynn, 2009, par. 4)

Habermas also talks about a “soft naturalism” which “embraces a non-reductionist account of human language and thought in which normativity and intersubjectivity are central” (Flynn, 2009, par. 1).

Cultivating weak naturalism building upon works of scholars such as Habermas can be accompanied by cultivating weak nationalism which interrogates the construction of nation-state as a naturalized entity propagating the cult of unitary strength at the expense of the plurivocity of beings, societies, languages, nations and cultures. Weak epistemology in this journey makes our epistemic certainty humble and urges us to realize the limits of methods in our scientific understanding as well as social life. All these are accompanied by weak ontology which urges us to realize that ontological cultivation is not only a cultivation of mastery of the self but also cultivation of its humility, fragility, weakness and servanthood facilitating blossoming of non-sovereignty and shared sovereignties (cf. Vattimo, 1999). Weak ontology helps us realize that both identities and differences have inbuilt limitations and they ought to realize their own weakness as a starting point for communication and sharing through cultivation of weak identities and weak differences. This, in turn, is facilitated by realizing that all identities have a dimension of non-identity as differences have also a dimension of non-difference. If we realize relationship between identity and difference from the starting points of non-identity and non-difference it helps us realize a new art of relationship rather than just the relationship between identity and difference which is often talked about now (cf. Connolly, 1991).

Gianni Vattimo is noted for nurturing pathways of weak ontology. Vattimo’s ontology is weak as opposed to a strong one. It also brings a post-metaphysical engagement to religion; it does not

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3 Regarding weak naturalism what Piet Strydom (2011, p. 329) recently writes is helpful: By contrast with strong naturalism and anti-naturalism, weak naturalism allows two things at once and at the same time: ontological continuity between nature and socio-cultural life, within the framework of which an evolutionary explanation of the grounds of human sociality is certainly possible; and epistemological discontinuity according to which the socio-cultural world, without denying the interference of neutral or biological factors and the need to take such restraints into account under certain conditions, must be studied in the irreducible pertaining to it as the special world in which social actors become involved.
dismiss religion, rather pleads for weakening some of its entrenched belief systems. That way there is an important connection between weak naturalism of Habermas and weak ontology of Vattimo but this has been rarely explored in the field of contemporary critical theory. Habermasian weak naturalism is part of his recent effort to create pathways of dialogue among naturalism, religion, science, religion and the secular public sphere. Weak naturalism is connected to multidimensional learning processes across borders especially between the religious and the secular where they are not fixed entities or finalities. Similarly Vattimo’s project of weak ontology weakens fixed construction of religious identities and has a potential to make them partner in learning though both Vattimo and Habermas mainly operate within a Judeo-Christian frame and they could embody much more concretely learning from different religious, secular and spiritual traditions of the world, which we witness in a contemporary seeker such as Fred Dallmayr (1991, 2007) who also talks about practical ontology. Dallmayr’s practical ontology is an ontology of learning, action and meditation and is part of what I have elsewhere called meditative verbs of co-realizations (Giri, 2012). Weak ontology and practical ontology have an integral dimension of transcendence as an ongoing journey of overcoming the existing closures and that way is related to what Victor Frankl (1967) had long ago called “dimensional ontology” which is animated by striving for transcendence.4

With weak ontology and dimensional ontology with its striving to realize the spiritual dimension of being, we can cultivate weak theology as a companion in the journey of weak integration. This makes theology weak rather than strong which then facilitates border-crossing dialogues among religions and theological systems. Weak theology is also facilitated by the rise of practical spirituality in religions which relativize pronounced religious beliefs and dogmas and lay stress on practice, especially transformative practice, to transform suffering.5 Finally weak pedagogy helps us realize that as educators we can not perpetuate the logic of strength imposing our views on others, especially children, but persuade them to take part in collective transformative co-learning where as educators we realize, as Sri Aurobindo challenges us to realize, “nothing can be taught” (cf. Giri, 2009b). Weak pedagogy can transform all of us, including some who fashion themselves as teachers, into learners—co-learners.

4 In the words of Frankl:

One characteristic of human existence is its transcendence. That is to say, man transcends his human existence towards the world; but more than this he also transcends his being towards an ought. When he does this, he rises above the level of the somatic and the psychic and enters the realm of the genuinely human. This realm is constituted by a new dimension, the noetic, the dimension of the spirit. Thus there can be no talk of parallelism in the sense of dualism, nor of an identity in the sense of monism. Nevertheless, in spite of all the ontological variations of the somatic, psychic, and noetic, the anthropological unity and wholeness of a human being are preserved and saved as soon as we turn from an analysis of existence to what I call dimensional ontology.

Rising spiritually above one’s psychopathological condition might also be called the existential act. By this very act man opens and enters the noological dimension of being; nay, he even creates this dimension as a dimension of his own. (Frankl, 1967, pp. 129-130)

5 Weak theology is at works in movements such as Habitat for Humanity (cf. Giri, 2002a) and Swadhyaya (cf. Giri, 2008) where participants emphasize not so much belief or doctrinal content but the need for building homes and collective institutions of well-being. We can look at Bellah’s project of beyond belief as also contributing to the art of weak theology.
Cultivating Differential Integration, Dynamic Harmonization and Dynamic Emptiness

Processes of weakening of entrenched identities and differences through cultivation of non-identities and non-differences lead to a new art of differential integration. Our earlier models of integration were based upon annihilation of differences. But the new art of integration builds upon our differences both in the ordinary sense as well as in the sense Derrida (1990) talks about it. Difference in Derrida is characterized by both spatial and temporal refusal to be incorporated into dominating systems. But what Derrida and followers of Derrida have not explored is the emergent art of communication among differences as well as difference. Differential integration transforms both identities and differences as it challenges both identity and difference to realize the responsibility that they have to each other, come out of their closures, embrace each other and learn together.

Cultivating weak and gentle integration is animated by work of dynamic harmony which is different from static harmony which perpetuates the existing logic of status quo and oppressive and humiliating modes of integration. In fact, it is not only dynamic harmony but harmonization as an ongoing process of unsettling and establishing rhythmic connections. Realization of dynamic harmony is an animating concern in many religious and spiritual traditions, for example in Kashmiri Saivism (cf. Deheja, 2006) and Zen Buddhism and a new art of integration as it seeks to realize dynamic integration can build upon dialogue among these traditions of practices and reflections. The theme of dynamic harmonization can be found in many religious, spiritual and political traditions of the world and for cultivating it as an aspect of a new path of integration we need to learn across boundaries. There is a tradition of quest for dynamic sunyata

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6 In his work on Japanese religion Bellah (1985) presents us the work of dynamic harmony in the following way:

What has been said about the unity of man, nature and divinity should not be interpreted as a static identity. Rather it is a harmony in tension. The gratitude one owes to superordinate benevolent entities is not an easy obligation but may involve the instant sacrifice of one’s deepest interests or even of one’s life. Union with the ground of being is not attained in a state of coma but very often as the result of some sudden shock in daily living. Something unexpected, some seeming disharmony, is more apt to reveal the Truth than any formal orderly teaching. Japanese art and aesthetic attitude toward nature are also concerned with the unexpected … (pp. 62-63)

7 Realization of dynamic harmony is also an animated aspiration in paths of Kashmir Saivism. As Harish Deheja (2006) writes about it:

Kashmir Saivism postulates that Parama Shiva contains the entire universe, pulsating within it, just as the seed of the mighty nyagrodha potentially contains the entire tree. At the immanent level, the transcendent prakshavimarshamaya splits into prakasha and vimarsha, Shiva and Shakti, aham and idam, I and this, subject and object, held together in pulsating, dynamic harmony […] At every level there is differentiation into subject and object, aham and idam, but the differentiation is based in, and unified by the non-duality of consciousness. (p. 422; emphasis added)

Kashmir Saivism seeks to realize dynamic harmony by realizing differentiation without dualism. Realization of non-duality is also an animated goal in the paths of Buddha and Kashmiri Saivism possibly has contributed to this pursuit of non-duality the work of dynamic consciousness.

8 Note for example the teachings of Jesus when he says that he has not come to establish peace but set the father and son against each other. What Jesus is suggesting that unless we transform existing structures of
(emptiness) in Buddhism and it is important to understand the significance of dynamic *sunyata* or dynamic emptiness for realization of dynamic harmony. Dynamic emptiness helps us realize that reality has an integral dimension of emptiness: “things and events are ‘empty’ in that they do not possess any immutable essence [...]” (Dalai Lama, 2005, p. 49). Dynamic emptiness and dynamic harmony contribute to realizing what Sri Aurobindo talks about as dynamic unity as contrasted with unity as a fixed thing or a static state (see Das, 2009).

Dynamic harmony and dynamic emptiness also help us overcome what Arjun Appadurai (2006) calls “anxiety of incompleteness” which generates a propensity to violence. Anxiety of incompleteness as it works through production of majorities and minorities creates anger, terror and violence and a new art of integration urges us to cultivate the fertility and the festivity of incompleteness in place of anxiety of incompleteness. Festivity of incompleteness in place of anxiety helps us to relate to each other in a more open-ended way working through our given prejudices and learn across boundaries. In such modes of engagement and relationship, participants complete each other.9

**A New Art of Cross-Fertilization, Solidarization and Cultivation of Weak Strength**

Cultivating weak and gentle integration is accompanied by cross-fertilization in knowledge, self and society. In the domain of knowledge, there is need for cross-fertilization between the cognitive and the emotional (cf. Bellah, 1970; Giri, 2009c) and also between faith and knowledge. It also calls for cross-fertilization between the religious and secular (cf. Ratzinger & Habermas, 2006). Such cross-fertilization calls for us to be agents and midwives of cross-fertilization by making our identities, differences and fields of habitation, co-habitation and interaction fertile by ourselves becoming “earthworms” (Giri, 2009c). In the dimension of self there needs to be cross-fertilization between different dimensions of the self, for example the unconscious and the conscious, the rational and the spiritual which then facilitates creativity and helps in learning across boundaries in transformative ways. In the sphere of society, different social groups are also called upon to cross-fertilize their experiences, ideas and interests. For cross-fertilization and learning across boundaries we need to be earthworms making our soils fertile. If Socrates had urged us to be gadflies a new art of integration as it calls for cross-domination we cannot realize peace. We can look at the spirit of Marx in this way as well in a spirit of dynamic harmonization.

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9 This can be better understood by drawing on the work of Vygotsky who talks about the process of completion. Building upon Vygotsky, we can cultivate and relate to situations of learning as processes of completion in which we complete each other as in Vygotsky’s pathways “thought is not expressed but completed in the word” (Vygotsky, quoted in Holzman, 2010, p. 33). For Vygotsky,

The relationship of thought to word is not a thing but a process, a movement from thought to word and from word to thought [...] Thought is not expressed but completed in the word. We can, therefore, speak of establishment (i.e. the unity of being and non-being) of thought in the word. Any thought strives to unify, establish a relationship between one thing and another. Any thought has movement. It unfolds. (quoted in Holzman, 2010, p. 33)

The attitude of completion entails upon us to create processes in which we help each other to complete our initial incompletion. As Louis Holzman argues: “Completion is far more than a critique of dualism. It is a positive (postmodern) move (an activist move) beyond dualism” (Holzman & Newman, 2004, p. 9).
fertilization urges us also to be earthworms thus helping us overcome the limits of anthropocentrism and realizing “cross-species dignity” (cf. Nussbaum, 2006).

The logic and machinery of strong integration in modernity has created many wounds in self and society and a new art of integration is also an art of healing our many wounds. It is confronted with the challenge of reconciliation and transformation. Through healing and reconciliation it seeks to realize a new solidarity, a solidarity which is beyond the absolutism of both the collective and the individual. It is a solidarity which nurtures the creative solitude of individuals, at the same time, urging them to be part of vibrant sociality—a soulful togetherness—to realize their potentialities. Solidarity is part of nurturing solidarity praxis and multiple journeys of solidarization (see Brunkhorst, 2005). It is a new solidarity which seeks to realize a new strength which is at the same time gentle and weak. If traditions such as Tantra had helped us cultivate strength then the called for new solidarity which cultivates weak strength calls for a new Tantra of human and social development which helps us cultivate weak strength.

A new art of integration also builds upon integration of personality about which Carl G. Jung had taught us a long ago. A new art of integration on the way to realizing a new art of wholeness and solidarity also seeks to integrate the vertical and the horizontal dimensions of self and society. Modern knowledge guided by critical rationality and democratic mobilizations has challenged us to realize the significance of the horizontal. Habermas’s communicative rationality is part of the much needed democratic transformation for horizontal dignity, justice and equality. Religions and spiritual quest have always challenged us not to forget the significance of the vertical and depth dimension of our lives. But in traditional religions and spirituality the vertical

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10 We should note here the work of social therapy which goes beyond an individualistic model of therapy and creates spaces of togetherness where people can share their pangs, understand each other and heal together. This helps to weaken the egotistic construction of self, other, society and the world and embrace alternative points of view, subjectivity and intersubjectivity. Earlier this was being in the lone encounter between the psychoanalyst and the patient but now it is done in a space of caring and concerned togetherness. Lois Holzman who has pioneered such efforts tells us that this is based upon process ontology which in turn is linked to weak ontology. In her essay, “Activating Postmodernism,” Holzman (2006) writes that social therapy re-examines “the very concept of boundaries if new postmodern and relational psychologies are to exist” (p. 14). Social therapy helps us cultivate relational responsibility. For Holzman, “we begin to see social therapy as a method to help ordinary people get free from the constraints of language and from various philosophical pathogens that permeate everyday life” (p. 8). She further writes that social therapy focuses “on the group activity without subjugating the individual.” Social therapy uses a performance and activistic models drawing upon thinkers such as Vygotsky: “[...] performance is an alternative to individualistic, behavioral and cognitive views of what it means to be a person” (p. 16).

11 Durkheim (1984) had made the distinction between mechanical and organic solidarity. The proposed solidarity builds upon organic solidarity. While earlier conceptions of organicity and organic solidarity were bound to varieties of dominating hierarchies, as Durkheim himself had warned us of the dangers of forced division of labour, the proposed solidarity is an ongoing journey of transformation of hierarchy and realization of potential of individuals and societies. Here we can remember what Durkheim had written more than a century ago:

[...] the division of labour only produces solidarity if it is spontaneous, and the degree to which it is spontaneous. But spontaneity must mean not the absence of any deliberate, formal type of violence, but of anything that may hamper, even indirectly, the free unfolding of the social force each individual contains within himself. (Durkheim, 2004, pp. 312-313)
has got imprisoned within many hierarchies of domination and it has also been accompanied by world-rejecting renunciation and flight from responsible and transformative engagement with the world. Ascent has rarely been accompanied by descent and horizontal solidarity with fellow beings. But now we are called for a new art of integration of the vertical and the horizontal as part of an ever-evolving, expanding and mutually interpenetrative circle of the vertical and the horizontal. This calls for bringing together practical discourse and practical spirituality which involves boundary-crossing dialogues, mediations and transformations (cf. Strydom, 2011).

### A New Art of Learning Across Boundaries

Such an art of integration helps us to learn across boundaries in creative ways. It invites us to rethink the very concept and reality of borders and boundaries. Our boundaries are zones of necessary closures and indispensable opening. Without the work of both closure and opening life is not possible as the dance of life in self, culture and society. But unfortunately throughout histories as well as in modernity our borders and boundaries have been made entrenched and inviolable but despite this multiple movements across them do take place.

A new art of integration transmutes existing borders into flows of communications. It also helps us to create cross-border spaces as spaces of communication and learning. We can create cross-border spaces as what Vygotsky calls “zones of proximal development” where we help each other to learn and unfold our potential. For example, we can look at interdisciplinary spaces as spaces creatively nurtured to create zones of proximal development in which different disciplines help each other to develop their potential through mutual interaction. The same can be cultivated vis-à-vis other boundaries such as religions, nations and individuals. Weak and gentle integration and differential integration as emergent processes of self-unfoldment, embrace of the other and conjoint mutual transformations are helpful companions in creating spaces of transformative co-learning and collaborative learning across and inside boundaries in the process transforming entrenched boundaries into zones of necessary closures and transformative openings.

### References


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12 For Vygotsky, What we call the Zone of Proximal Development [...] is the distance between the actual development level as determined by independent problem solving, and the level of potential development as determined through problem solving under the guidance or collaboration with more capable peers. (quoted in Holzman, 2010, p. 29)

We can also look at Zones of proximal development as zones of cross-fertilization.


Against Consilience: Outsider Scholarship and the Isthmus Theory of Knowledge Domains

Mike King

Abstract: The endless proliferation of human knowledge within sub-disciplines represents not so much a tree structure of knowledge from which we can stand back and admire some organic unity as the tentacles of an octopus dragging us down into anguished division. The anguish is genuine and has been expressed since the Enlightenment by many types of thinker. This paper argues however that the anguish does not in fact arise from the nature of human knowledge but from the mistaken belief in the possibility of its unification. The desire for the unitive has been erroneously transplanted from its proper context – the mystical – to the domain of knowledge, as the latter – particularly under the rubric of “science” – has become the only culturally legitimised stance towards the world. Conventional scholarship, while busy creating sub-branches and sub-sub-branches on which the leaves of new knowledge sprout with vigour and abandon, is powerless to avoid this feeling of anguish. It feels compromised in the thwarted longing for a lost sense unity.

“Outsider scholarship” – of the type practiced by Koestler, Schumacher and Pirsig – is often preoccupied with just this question, but is free to propose various taxonomies of knowledge, often of an unfashionably hierarchical kind, that cut across conventional boundaries and which provide a basis for an uncompromised relationship with knowledge. This paper starts with a brief consideration of outsider scholarship, including its anachronistic characteristics, and then turns to Pirsig’s meditation on the technologies behind the word-processor, which lead to an “isthmus theory of knowledge domains.” It then considers Steven Jay Gould’s non-overlapping magisteria, and the hint from Ken Wilber about epistemological pluralism. These are then used to show why E. O. Wilson’s consilience is misguided: it represents the final triumph of logical positivism – a takeover bid for the humanities by the sciences – but couched in terms apparently irresistible to fashionable thought.

Keywords: Consilience, epistemology, isthmus theory, knowledge domain, outsider scholarship, Pirsig.

Why should the division of human knowledge be a bad thing, and the putative unification of knowledge be a desirable goal? What could it mean, to walk into a university library and unify its contents? Obviously, it would mean nothing. (King, 2009, p. 108)

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Introduction

Many notable thinkers have attempted to tackle what they see as the problem of the proliferation of human knowledge. What we know collectively seems to be growing exponentially in increasingly specialized sub-disciplines. But...why is it a problem?

Philosophy at the time of Aristotle meant the mastery of all knowledge, but the Greek mode of thought was first rejected entirely by the early Church Fathers, and then later transformed under Christianity into Scholasticism, an Aristotelian thought-world subservient to religion. In the Enlightenment philosophy was freed of religion but recoiled from the natural sciences to become, not the mastery of all learning – as this was quickly becoming impossible – but the court to which all disciplines must submit their truth-claims. Unfortunately disciplines like physics didn’t bother. No over-arching framework for knowledge could exist henceforth, and increasingly no individual could hope to master all knowledge.

Yet, if knowledge is a good thing, why on earth should more of it be a bad thing? Imagine a young sapling with only three branches and several dozen twigs. Do we not celebrate the mature tree, a hundred years later with a hundred branches and thousands of twigs? Why isn’t the proliferation of knowledge seen in the same positive light? Clearly it isn’t. One can speculate that in some sense great thinkers feel humiliated by their incapacity to master all knowledge; for example Dostoevsky was famously unhappy at being unable to acquire any proficiency with the differential calculus. Whatever the reason, the consensus became that knowledge was fragmented, and the call has been made from many quarters to address this problem, or even to see that its solution was the important contemporary problem. Erwin Schrödinger, Paul Ricoeur, the Frankfurt School and Ken Wilber all have made such calls.

Schrödinger (2007, p. 1) says “We have inherited from our forefathers the keen longing for unified, all-embracing knowledge.” He adds: “We feel clearly that we are only now beginning to acquire reliable material for welding together the sum total of all that is known into a whole, ...” At the start of a book on Freud and philosophy Ricoeur says “We have at our disposal a symbolic logic, an exegetical science, an anthropology, and a psychoanalysis and, perhaps for the first time, we are able to encompass in a single question the problem of the unification of human discourse” (Ricoeur, 1970, p. 3). A large part of the efforts of the Frankfurt School can be understood as the attempt to unify Marxist and Freudian thought, which in the first instance are often antithetical. Ken Wilber has worked tirelessly to devise a theory of everything in which all knowledge has a home.

Schrödinger, Ricoeur and Wilber are poles apart in their respective worldviews, but share the idea of an all-embracing knowledge, the welding together of all that is known, the unification of human discourse. The precise term varies but the idea is the same. Knowledge is fragmented, and – to use the most common term here – it must be integrated. The integration of knowledge sounds in the first instance like a good thing, but what, more precisely, do its proponents claim for such integration?

Turning to Edward O. Wilson, in anticipation of introducing his consilience later on, it is interesting to see what motivates him. For example, he says, “only unified learning, universally
shared, makes accurate foresight and wise choice possible” (Wilson, 1998, p. 297). Clearly, he thinks that the unification of knowledge will aid planning. In the same vein he talks about the dropping costs of distributing knowledge, so we are “drowning in information, while starving for wisdom. The world will henceforth be run by synthesisers…” (Wilson, 1998, p. 269). By synthesisers he means people who have access to “unified” knowledge and will be able make “important choices wisely.” (Note that the term synthesis will become increasingly important in this discussion as the alleged corollary of analysis.) Everywhere Wilson confirms for us his belief in knowledge as utility, for example he says that people expect the social sciences to deliver “the knowledge to understand their lives and control their future” (Wilson, 1998, p. 181).

For Basarab Nicolescu – a scientist with a very different agenda – the purpose of unified knowledge is similar, but it comes from another source: Marxism. Writing around the turn of the twenty-first century he says: “The contemporary growth of knowledge is without precedent in human history” (Nicolescu, 2002, p. 6). One specialist cannot even know everything in a colleague’s brain, he points out, let alone across all the disciplines. “Yet, a true decision maker must be able to have a dialogue with all of them at once” (Nicolescu, 2002, p. 41). The Babelization of knowledge, as he puts it, is dangerous, “because the decision maker becomes increasingly more incompetent regardless of his or her intention” (p. 41). Although never stated explicitly, one cannot help detecting in his work a respect for top-down planning largely absent in non-communist circles, though perhaps a common motivating factor with Wilson.

Perhaps we should now turn to physics now to discover a site of intense efforts to unify theories that have so far remained stubbornly irreconcilable. These are quantum theory and gravitation, and their would-be reconciliation is called the unified field theory. Stephen Hawking’s well-known popular science book, A Brief History of Time finishes with a short paean to its virtues:

However, if we do discover a complete theory, it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all, philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist. If we find the answer to that, it would be the ultimate triumph of human reason – for then we would know the mind of God. (Hawking, 1988, p. 175)

These are an astonishing set of claims – all totally unfounded. In particular, the idea that the solution of the most difficult problem in physics – a problem that takes a person decades of scientific study to understand as a problem – would yield something comprehensible to lay people is mystifying. After all, the great British thinker John Locke could not comprehend a key text at the dawn of modern physics, the Principia of his friend Newton. But the grandiosity of Hawking’s statement is not unique, and is typical of the way some scientists talk. Wilson expresses the same idea, only a little less grandly; “When we have unified enough certain knowledge, we will understand who we are and why we are here” (Wilson, 1998, p. 7). In the game of futurology one is supposed to have some vectors to hand to indicate a general direction, particularly if it is of such importance. But there are no vectors in the history of science to support either Hawking’s or Wilson’s claim about the glorious outcomes of unifying knowledge. The one vector we do have is the accelerating proliferation of learning, which is the very trend causing anxiety.
This discussion so far anticipates a little my argument here, but lays out the ground for the following enquiry. We are asking: what is the effort to unify knowledge and why has it arisen; what would unified knowledge look like and yield as an outcome; and finally, how can we resist what looks like a takeover by science of the humanities?

**Outsider Scholarship and Hierarchical Knowledge Structures**

Most scholarship takes place within disciplines, or, perhaps more accurately these days, microdisciplines. There is also much interdisciplinary work, and Nicolescu (2002, pp. 43-45) usefully distinguishes for us between multidisciplinary, interdisciplinary, and his proposed transdisciplinary form of scholarship. But what kind of scholar is likely to address the question of the integration or unification of all knowledge, given that they must live somehow beyond all the disciplines? Clearly the philosopher is engaged in this to some degree, but academic philosophy has increasingly specialised itself as the other disciplines have, and is increasingly interested in its own preoccupations. In general it falls to various kinds of free-lance or maverick thinkers to really pursue our question, and in recognition of Colin Wilson’s *The Outsider*, it is useful to call such thinkers “outsider scholars.”

Colin Wilson published *The Outsider* in 1956 at the age of twenty-four. The book was an instant success, but this soured quickly as the political left were alienated by his obvious religious interests, and his second book was universally panned. What makes *The Outsider* so unusual is the extraordinary range of reading that Wilson had undertaken to research it. This would be remarkable enough in one so young, but his gift as a scholar emerges in his capacity to place the reading. He had the critic’s gift to take in a whole play, novel, painting – whatever – and in a few words place it in context, characterise it, and make its relevance to his thesis clear. Wilson achieved all of this with no university education, and with early marriage and family commitments forcing him to work at low-paid jobs. He was an outsider to any conventional form of scholarship.

The thesis of *The Outsider* does not concern us here, as Wilson was not interested in the theme of the unification of knowledge. But his outsider status and form of scholarship is one that is crucial to this question, and he points us to other twentieth-century thinkers who could be classed as outsider scholars, and who are directly interested in our question. These include, in order of birth date, Arthur Koestler, Douglas Harding, E. F. Schumacher, Robert Pirsig, and Ken Wilber.

Arthur Koestler was a Hungarian-born writer who, like Wilson, became the object of suspicion from the left. In this case it a number of books including *The Yogi and the Commissar* which set out an explicitly anti-communist stall. He didn’t belong to the intellectual left any more, and his engineering studies in Vienna were likewise no basis for his broad intellectual searchings. He was an outsider to the university system, but attained perhaps the status of public intellectual that Gore Vidal, Naom Chomsky and similar figures occupy. His relevance to our theme is his coinage of the holon, an entity that is a self-contained whole at one level in a hierarchy and at the same time a component of a greater whole. Koestler stands as a bridge between Renaissance ideas of hierarchical knowledge that found its peak of expression in Leibniz’s *Monadology*, and the work of Ken Wilber.
Douglas Harding was a British architect and mystic, whose “headless way” was a teaching system for enlightenment that never reached the mainstream. His first book The Hierarchy of Heaven and Earth (1952) was enthusiastically endorsed by C. S. Lewis, and set out a hierarchy of human knowledge that has occasional resemblance to Koestler’s and Wilber’s, though published decades earlier. He was an outsider scholar because, while he pursued his day-job as an architect, his broad reading in religion and science was untrammelled by the constraints of university research programmes.

E. F. Schumacher was an economist and protégé of Keynes, best known for his 1973 publication Small is Beautiful. It is in his last book however, A Guide for the Perplexed, that we see a mind at work on complete span of human knowledge and the construction of a hierarchical ordering of it. Like Harding he was not exactly an outsider as Colin Wilson defined it: both Schumacher and Harding were professionals in their chosen fields, and therefore insiders in that respect. But Schumacher’s broad scholarship owed nothing to the university or convention, and, like Colin Wilson, he seems to have the habit of placing material quickly and accurately. A Guide for the Perplexed was written, like Leibniz’s Monadology, at the end of his life, and likewise probably summed up all this thinking.

Robert Pirsig is famous for his first novel Zen and the Art of Motorcycle Maintenance: An Inquiry into Values. He studied and taught at various universities, but rejected their assumptions and values, and eventually suffered a nervous breakdown. He fits most of Wilson’s criteria for an outsider, and formal recognition was slow for his ideas. In 1974 however he was awarded a Guggenheim Fellowship for a follow-up novel, which became Lila: An Inquiry into Morals. Pirsig is greatly exercised in it over the fragmentation of knowledge, and his ideas will be explored shortly as the basis for an approach to knowledge integration.

Wilson was lucky with The Outsider: Victor Gollancz was the first publisher he sent it to, and was immediately accepted. Pirsig had one hundred and twenty-one rejections for Zen and the Art of Motorcycle Maintenance before it found a publisher. Ken Wilber’s seminal book The Spectrum of Consciousness was rejected by more than twenty publishers before Quest Books took it on. Like Pirsig, Wilber trained in science, but was disillusioned with it, and subsequently developed his own broad-based scholarship with a particular interest in developmental psychology and Eastern mysticism. His own attempts to integrate knowledge almost define an industry, and culminated in his 2000 book A Theory of Everything.

We can now give a provisional definition of outsider scholarship. From these few examples it is clear that outsider scholars operate mostly outside of academia. They pursue big-picture thinking which the specialist has not the time or perhaps inclination to do. Obviously they are extra-disciplinary, but less obvious is the often anachronistic nature of their thinking. By this I mean that they are not bound to the intellectual fashions of their period, and are readily inclined to rove across all historical periods and cultures. Because older thought-systems are often associated with the oppression intrinsic to feudalism, this makes the outsider scholar sometimes suspect to fashionable left-wing thought.

The outsider scholar must have the capacity to encounter a domain of thought or a cultural artefact and place it with precision, and with rapidity. This means an instinctive eye for quality, the eye of the critic. Otherwise they would soon drown. It is this that perhaps separates their
thinking from that of the professional philosopher who generally tackles technical problems in philosophy, with little obligation to survey outside fields of study, let alone gain competence within them.

So, if the outsider scholar is extra-disciplinary, pursues big-picture thinking, is anachronistic yet a gifted critic (which implies a sensitivity to the Zeitgeist), what term would properly encapsulate the opposite? I am going to suggest the term “incremental scholarship” to stand in contrast to outsider scholarship. Clearly, incremental scholarship is intra-disciplinary, and is additionally characterised thus: it is mostly cognisant of recent scholarship, makes small contributions to a collective effort, and is highly specialised. The Harvard referencing system has been perfected for this kind of scholarship: at a glance one can tell what other workers in the field are being drawn upon to reinforce an argument – or, more rarely – for refutation. The chief quality of incremental scholarship is that it generally fails to spot the larger picture even within its own discipline, and fails to get quickly to the essence of anything. That job therefore must fall to the outsider scholar.

The above writers as outsider scholars, with the exception of Wilson, are of interest because they propose hierarchical systems for the organising of knowledge. Before investigating this, it is useful to look at a non-hierarchical system used for taxonomising knowledge: the Dewey Decimal System. Here, just as a reminder, are its ten major divisions:

- 000 – Computer science, information & general works
- 100 – Philosophy and psychology
- 200 – Religion
- 300 – Social sciences
- 400 – Language
- 500 – Science (including mathematics)
- 600 – Technology
- 700 – Arts and recreation
- 800 – Literature
- 900 – History, geography, and biography

There is nothing hierarchical about this system, which is used in most libraries in the world. Of course, there is nothing to prevent certain hierarchies being proposed within one of the ten categories, for example it is common to hear “physics explains chemistry explains biology” as a hierarchy in the hard sciences. The ten Dewey subdivisions for science don’t suggest this however. What Koestler, Schumacher, Wilber, Harding and Pirsig are sure of however that such a flat approach to knowledge is wrong.

While Wilber’s hierarchy owes much to Koestler, he tells us that he researched several hundred hierarchies out of which he developed his well known “four quadrants” (Wilber, 1998, p. 63). Schumacher’s 1977 work seems to owe nothing to Koestler’s 1967 The Ghost in the Machine, where he introduces the holon, while Harding’s scheme predates all of them. Pirsig’s approach to the question is unique, in that he deliberately restricted his reading of other philosophers, and so draws on very little material that is otherwise common to those in this group.
The hierarchies of all of these writers firmly place them as outsiders because the mainstream has largely bought the idea of a hierarchy defined solely in physical terms. Schumacher, as unsatisfied as any in this group with conventional knowledge structures, or maps as he calls them has this to say; “The maps of real knowledge, designed for real life, did not show anything except things that allegedly could be proved to exist” (Schumacher, 1978, p. 11). He is complaining of an essentially positivist approach to knowledge, which requires the quantitative empirical proof of the hard sciences, and so makes maps leaving out all that is important to him: what he insists are “higher things.”

The hierarchy in science, which builds from sub-atomic particles upwards, comprises the conventional view, and is unchallenged by the humanities. A. N. Wilson (1998, p. 81) is clear that this hierarchy is based on the scale of time and space. Harding and Wilber also use this as a starting point, but their cosmology of knowledge includes the spiritual as well as the material.

So far we have seen that the outsider scholar, as defined here, approaches the question of integrating knowledge from a hierarchical perspective. But does the hierarchy in some form or another really solve the problem? Crucially, does it achieve integration? To answer this, we look in more detail now at how knowledge is conventionally seen to fracture, and how Pirsig’s particular hierarchy gives rise to an ‘isthmus’ theory of knowledge.

The Isthmus Theory of Knowledge Domains

If the Dewey decimal system taxonomises knowledge for the convenience of the librarian into ten major division, each with ten subdivisions and so on, then in the broader public sphere the initial division is just two-fold: between science and the humanities. This was highlighted in an influential lecture in 1959 by the British scientist and novelist C. P. Snow entitled The Two Cultures (Snow, 1993). Since then the term The Two Cultures Debate has encapsulated a set of positions on the division. Snow was exercised by the harm that the division would do in terms of effective government: if we live in a highly technological age, then what is the implication of having the administration run largely by humanities graduates with little understanding of science? Here he is on common ground with E. O. Wilson and Basarab Nicolescu.

Forty years later Melvyn Bragg wrote that the term was “stapled to the English language” and that Bertrand Russell and John F. Kennedy were equally impressed with its significance (Bragg, 1999). Yet at the time the literary critic F. R. Leavis dismissed Snow as a “public Relations man” for science. Snow is an example of what I call the “bi-literate” scientist, and in the intervening half-century there is evidence that such scientists are on the increase. But is literary awareness by scientists mirrored by scientific awareness in the humanities? Perhaps, but Leavis’s criticism needs to be taken seriously. Make no mistake he warned: science is attempting the colonisation of the humanities.

The campus novel Thinks... by David Lodge is a remarkable illustration of this situation. There is no doubt that Thinks...is a Two Cultures novel because it pits male cognitive scientist Ralph Messenger against female creative writer Helen Reed. Their developing affair allows Lodge to examine the new claims of science to investigate consciousness, the field he believes to be traditionally the domain of the reflective arts such as literature. Helen resents Messenger’s
scientism; “Hasn’t science already appropriated enough of reality? Must it lay claim to the intangible invisible essential self as well?” (Lodge, 2001, p. 62). This is Lodge’s basic assumption; that the “intangible invisible essential self” is the “province of the arts, especially literature, and most especially the novel” (p. 62). Helen, representing the arts, is seduced and abandoned by Messenger, representing science. Lodge is clearly against the move by science to co-opt the arts, but the very attention he gives to the cognitive sciences strengthens their cultural reach. His novel, and also essays on the same subject suggest that cognitive science and neurology are the glittering snakes in whose glare the rabbits of art and poetry are, it seems, transfixed. His attempts at resistance are perhaps no more effective than Helen’s. The relationship is asymmetrical.

The novel leaves us with the specific possibility: is brain science going to colonise the humanities? This is a serious issue. Basarab Nicolescu, in his manifesto of transdisciplinarity, states that one of its imperatives is the unity of knowledge, but also warns that “any attempt to reduce reality to a single level governed by a single form of logic does not lie within the scope of transdisciplinarity” (Nicolescu, 2002, Article 2). So far so good, but he also says that transdisciplinarity demands of the exact science “their dialogue and their reconciliation with the humanities and the social sciences, as well as with art, literature, poetry and spiritual experience” (Nicolescu, 2002, Article 5). Shouldn’t alarm bells ring here? After all, isn’t Lodge’s novel a parable of how that ‘reconciliation’ may be firstly seduction, and then abandonment?

In Bragg’s 1999 review of the Two Cultures debate he lists a series of bi-literate scientists, including Stephen Jay Gould. Gould is important to this discussion because of his book Rocks of Ages (2001), which this time is about the two cultures of science and religion. He puts forward the concept of Non-Overlapping Magisteria (NOMA) to describe these domains, with the implication of entirely separate epistemologies and methodologies. The term magisterium and its plural suggest domains distinct and worthy of respect, which is Gould’s point. He is not arguing for any kind of integration or synthesis at all, rather the need, in the first instance, for both domains to be considered equal, separate, and answering different human needs. Unsurprisingly NOMA is disliked by a wide range of thinkers, both scientific and religious. The atheist Sam Harris agrees with Richard Dawkins that NOMA is not an option, though he does not mention it by name. Harris (2006) says “And yet, intellectuals as diverse as H. G. Wells, Albert Einstein, Carl Jung, Max Planck, Freeman Dyson, and Stephen Jay Gould have declared the war between reason and faith to be long over. On this view there is no need to have all of our beliefs about the universe cohere” (p. 15). Harris talks about the kind of mentality that can maintain disparate systems of knowledge as partitioned. Clearly, for Harris, knowledge must cohere, whatever that means exactly. Dawkins (2007) is blunt: “Gould carried the art of bending over backwards to positively supine lengths in one of his less admired books, Rocks of Ages” (p. 78). Daniel Dennett (2007) calls NOMA a political hypothesis, adding that Gould’s proposal “found little favour on either side” and that “few readers were persuaded” (p. 30). Dennett (2007) later adds; “the disciplinary isolation it creates has become a major obstacle to good scientific practice” (p. 71).

Clearly, most scientists found Gould’s idea of NOMA repulsive. But why? If there are two cultures as Snow lamented, then why not be realistic about it? The answer of course is that the glittering eyes of the snake of science are fixed on the rabbit of the humanities. It won’t do to grant autonomy to a whole world of knowledge, beyond the reach of science. While amongst
scientists there is talk of “physics envy,” amongst the bi-literate scientists it seems there is more than a hint of “poetry envy.” Richard Dawkins (1998) for example says that “word for word, I wish I had written the following famous quatrain …: (p. 16) referring to a passage from William Blake’s poem *Auguries of Innocence*.

Ken Wilber is also not the sort of thinker to allow religion and science to be non-overlapping. On the contrary he seeks their marriage. Early in *The Marriage of Sense and Soul* (1998) he lists different ways in which science and religion are viewed, including a peaceful coexistence based on the Great Chain of Being. This allowed for a hierarchy or nested structure of knowledge in which the higher domain – religion, spirituality or mysticism – enfolded the lower material orders, the study of which include the sciences. He calls this coexistence an ‘epistemological pluralism’, but claims that when modernity rejected the Great Chain of Being it also rejected epistemological pluralism (Wilber, 1998). He says, “All the past forms of epistemological pluralism failed the test of modernity because science itself did not and would not fundamentally doubt its own competence to reveal all important forms of truth” (Wilber, 1998, p. 141; emphasis in the original).

In this quote we find an attitude that perhaps rules Wilber out from consideration as a true outsider scholar. An outsider would not say that epistemological pluralism failed the test of modernity, but that *modernity failed the test of epistemological pluralism*. Outsiders are not committed to the period in which they live. And the outsider has of course an ally here in postmodernism: it criticises modernity for epistemological monism. Where Wilber is of course right is to say that science, or perhaps better scientism, believes that it has or will reveal all important forms of truth. His strategy is to offer modernity, i.e., science, a better position than “low man on the totem pole” (Wilber, 1998, p. 24), the place it occupied in the Great Chain of Being of classical theory. Wilber believes, rightly, that science won’t accept its relegation to a lower form of knowledge, and that by allowing science a role in all the levels of the Great Chain, it will somehow play ball. Wilber want science to be an equal partner in the realm of the senses, the realm of the arts, and the realm of religion, what he calls the Big Three.

Wilber’s four quadrants apparently allows him to include scientific and spiritual hierarchies in a single scheme, thus retaining his epistemological pluralism while not offending science by placing it at the lowest level of a classical hierarchy. Here is his attempt to unite science and religion, but the question remains: what does unite mean here? Perhaps it does achieve what Harris denies, that the two domains now cohere – meaning stuck together. They have after all been stuck together on the page. But the doubt must surely remain: is this any more than a *taxonomisation* of knowledge domains? Worse, is this not a taxonomy designed to avoid offending science? In the term ‘epistemological pluralism’ Wilber seems to acknowledge a Gouldian NOMA, but then backs off very fast so as not to lose the cachet of scientific.

Snow laments the reality of the two cultures, Gould celebrates different magisteria, and Wilber re-orders a hierarchical structure so as not to offend modernity and science. If Snow and Gould are bi-literate scientists, which makes them outsiders to some degree, at least to science, and their scholarship shows many such traits. But Pirsig can be considered as one of the purest cases of outsider scholarship. For a start he feels more like the outsider of Colin Wilson’s description, one who is disenchanted with any establishment account of reality, and thus feels utterly alone. Yet the intensity of Pirsig’s searching, particularly in *Lila* (1991), and the nature of his scholarship,
yield a compelling and radical insight into the relationship between knowledge domains, which we can now turn to.

Pirsig naturally gravitates to a hierarchical account with four levels: Inorganic, Biological, Social and Intellectual, not in fact that far removed from Schumacher’s four levels of mineral, plant, animal and man. But Pirsig not only demonstrates but carefully argues for another trait of outsider scholarship: the care taken not to read the “authorities” on a subject, at least not before rigorously investigating it. Hence Pirsig’s scheme owes nothing to any other hierarchical scheme, and is certainly no grand synthesis of them as Wilber claims for his quadrants.

Pirsig’s real contribution is to make a tightly illustrated argument for the separation of levels within his hierarchy. This is not NOMA, because his higher levels enfold the lower levels, as a hierarchy must. But the different levels operate independently of each other, sometimes in opposition, but always in ignorance of each other. Whatever values or goals our cells have, they are not the same as that of the human. Whatever values or goals a society of humans has, they are not coterminous with that of the individual. Schumacher (1978, p. 35) makes the same point when he says that there can be no links or transitional forms between the major stages of the hierarchy. But Pirsig shows what the nature of a legitimate link must be between any two knowledge domains. His best illustration of this comes from computer science, and the division between hardware and software. Pirsig muses on how the hardware or circuit designer learns nothing of programming, while the programmer doesn’t generally even know how the bistable device – at the core of all computers – works. What connects these two cultures is the tiny common ground of machine code instructions, a list so small you can write it on a single page. He calls this the isthmus that joins these two levels of knowledge, but more importantly goes on to say that there is no direct interchange of meaning through this isthmus for the two communities. He takes this as the analogy for all separated knowledge domains when he concludes, “Trying to explain social moral patterns in terms of inorganic chemistry is like trying to explain the plot of a word-processor novel in terms of the computer’s electronics” (Pirsig, 1991, pp. 179-182).

Pirsig and Schumacher are not embarrassed to relegate the physical sciences to a low level in the hierarchy. The explanations of the hard sciences are fine for the inorganic and to some extent for the biological, but the higher orders of social and intellectual are radically different worlds. Chemistry cannot explain a novel or a morality. However, Pirsig’s isthmus is very interesting, because it shows how a legitimate and very limited ‘integration’ of knowledge can come about or be tested for. For example, the social domain is a magisterium unto itself, but there has to be an isthmus – perhaps the DNA – out of which the higher domain arises from the lower one. Let us consider a few more such isthmuses.

In the relationship between physics and chemistry we can spot an obvious isthmus: the origins of the periodic table in the Schrödinger equation. Given that the nuclei of atoms are forged in the fusion reactors of stars, they then attract electrons equal in number to the protons in the nucleus. The Schrödinger equation then describes how these electrons settle into stable configurations, upon which all of chemistry rests. But in practice the Schrödinger equation is intractable for all but the smallest atoms, and three elements of the periodic table do not fit correctly. The isthmus is there, but in reality the two domains operate with rather different cultures. Chemistry remains a more taxonomical science than physics, while biology is more taxonomical still, and is also in
large parts a descriptive science: the morphology of organisms having yielded little to reductive methods for example. We can say that even within the hard or exact sciences there are different cultures, different epistemologies and different methodologies.

But the search for isthmuses turns up interesting problems even within domains. In physics, the queen of the sciences, there is a domain-rupture which no isthmus has yet been found to bridge. As we saw earlier this is the gulf between quantum theory and relativity, hence the piquancy of the practical joke played by Sokal on the cultural studies community in his *Hermeneutics of Quantum Gravity*. (His subsequent book, with Jean Bricmont, rather backfires as it shows that he has as little insight into the epistemologies and methodologies of cultural studies as cultural studies does of physics. The Two Cultures remain.) While Hawking may claim that string theory ‘unites’ quantum theory and relativity this claim is denied by others because the empirical studies have not yet confirmed the theory. It may even be that the construction costs of particle colliders required to carry out the investigation would amount to orders of magnitude more than humanity’s projected maximum collective economic activity. The “don’t know” rules for the foreseeable future.

Turning back to possible isthmuses between physics and chemistry, we find not one but several: for example physical chemistry is an entire branch drawing heavily on thermodynamics, while isotopic chemistry relies on knowledge of the atomic nucleus. Similarly the isthmuses between chemistry and biology are numerous, and perhaps smeared out in a discipline such as biochemistry. The same is true for isthmuses between completely different domains such as science and fine art, or religion and fine art. Algorithmic computer art is an example I happen to have written about in detail, and I have also made a lengthy study of religion and film. In the first case the algorithm is the common ground between the computer artist such as Roman Verostko, John Whitney Snr. or Jean-Pierre Hérbert, and the computer scientist such as John von Neumann (King, 2002). For the artist the algorithm has morphological meaning; for the scientist it has formal meaning in the abstract realm of a universal computer programming language. In the second case the *script* is the isthmus between religion and film. For the religionist the script carries religious or spiritual meaning, adumbrated through human drama, while for the director the script is a key part of the blueprint for a dramatic work of art. A good example would be Bresson’s *Diary of a Country Priest* (1951), where the cinematic artwork is a fine example of Bresson’s spare style, and which happens almost accidentally to convey some of the deepest truths of the Christian concept of grace. The film is highly regarded by most writers on religion and film, who at the same time are mostly agreed that the interdiscipline, as they call it, is at the meeting of two worlds that are *sui generis*: neither begets the other.

Ever since Fritjov Capra’s seminal *Tao of Physics* was published in 1975 a veritable industry has been spawned commending quantum theory as the bridge between science and religion, or science and consciousness. It is effectively the physics-proves-mysticism thesis. This idea is now an orthodoxy of the New Age, but Wilber was a lone voice publishing a book called *Quantum Questions* (1985) that challenged this view. All credit to him. But how would isthmus theory, as I have developed it so far, cast light on this issue? Pirsig’s original isthmus, the single page of machine code instructions, links two domains, as we saw. But would the higher domain, the software, fall apart if the machine code isthmus was not there to connect it to the lower domain, the hardware? The answer is yes. In the example of chemistry, would it fall apart if there were no electrons with stable configurations described by the Schroedinger equation? The answer is yes.
Would algorithmic computer art disappear without the algorithm? Obviously. Would religious films disappear without the script? Obviously – or at least all that might be left would be Dogme 95-style improvised ramblings.

But would consciousness or religion disappear without the fundamental particles described by quantum theory? The answer now is not clear cut. On a hierarchical model, whether Wilber’s, Koestler’s, Schumacher’s or Pirsig’s there is a chain upwards from the inorganic level all the way to consciousness, or intellect, or mind. So, without an inorganic substrate on this model, nothing higher can exist, true. But is quantum theory the legitimate *isthmus* that takes us to consciousness or the realm of religious experience? In Pirsig’s example there is a natural bridge or isthmus between two realms, because both communities are intimately bound up with it, even if, as he says, it means different things to the two communities. Machine code is common to both. But quantum theory is not like that for science and religion: only one community is bound up with it, and it means something to only one of the two communities. It is not common to both. The continents are on other sides of the world. When the (largely) New Age communities claim quantum theory as the isthmus between science and spirituality we can see this as merely the harmless adoption of a metaphor: for example Dana Zohar’s “quantum hussy” – who could bilocate and therefore have an undetected multiple marriages – is amusing enough (Zohar, 1991, p. 17). But isn’t this use of quantum theory more like a Trojan horse, an infiltration of science into domains where it does not belong?

Many people have been impressed by Einstein’s dictum; “Science without religion is lame, religion without science is blind” (Einstein, 1988, p. 46). I disagree with it: science without religion is what enables science to run so fast (just think of Galileo), while religion without science is what enables religion to see so far. The attempted integration of the two would yield a blind cripple, not a far-sighted sprinter. Adopting the methodologies and epistemologies of the one would ruin the other. They are non-overlapping magisteria. But why does the dictum appeal? Perhaps we don’t read it literally like I have done here, but accept that an individual needs to pursue both science and religion to lead a balanced life. Even that is dubious though, if one accepts that religion – at least in the sense that Colin Wilson, Wilber, Koestler, Schumacher or Pirsig understand it – is at a higher level on the hierarchy. In this mode of thought the higher contains the lower, but not the other way round. In crossing a major division in the hierarchy, there are no links or transitional forms as indicated by Schumacher, or isthmuses as indicated by Pirsig. When a higher order enfolds a series of lower orders there is a kind of minimum integration offered by the specific proposed taxonomy. *Intellectually*, we can roam across the orders, though even this requires proper rigour, as isthmus theory shows. But when faced by what is a mounting take-over bid for the humanities by the sciences, we will discover that the issue is what level of organisation do humans exist at, *experientially*?

Before looking at this question, and before examining Wilson’s consilience as the paradigmatic take-over bid for the humanities by the sciences, let us recap a little. We are taking a radical look at the field of ‘integration’ in the fields of human knowledge, against a background perception that the fragmentation of knowledge makes it hard to meet the challenge of contemporary life. While it is clear that this “integration” might be better understood as the taxonomisation of knowledge domains, it does seem that outsider scholars have contributed greatly to important taxonomies that go beyond the Dewey flatland. The isthmus theory deriving from Pirsig helps us discover real contiguities between knowledge domains. When attempting to
solve problems it is clearly useful to be able to reach to a discipline which has one or more genuine isthmuses to the problem domain. Without a proper isthmus one is simply reaching for metaphors, which may be useful of course, but tell us nothing about the real integration of knowledge. Beyond these rather practical issues there does seem another force at work however: the idea that the integration of all knowledge will somehow yield a mystical breakthrough. This is just a misplaced mysticism, an understandable human longing, but irrelevant to the question of knowledge domains. Unfortunately it seems to cover up, or even drive, a much more regrettable process: the colonisation of the humanities by the sciences in the name of integration.

To make a Toyota car one needs all the Toyota parts for that model. Parts for a different make or model will not, generally, fit. The parts that do properly belong to that car are integrated into a whole in the assembly process, and have no utility, generally, outside that particular whole. Can all of knowledge be integrated in the same way, into a whole? Do we have a name for the entity so constructed? The answer, bafflingly, seems no. All the models of knowledge, whether flat or hierarchical, which claim to properly relate all knowledge domains, cannot somehow assemble an entity from the parts, which is then a whole, like the Toyota car. The term integration means to ‘make one’, and in the case of the car, it means that all the parts fit together correctly, and that the new entity correctly functions as a higher-order entity of that type – a car. But we don’t have an entity of any type that could be the sum total of all knowledge, and if we did, we would stand round it and wonder what it was for. The search for union in mysticism, and the whole that is its goal, are nothing like this quest for the integration of knowledge.

The quantum-theory-proves-mysticism community is largely New Age, and so quantum theory as an isthmus between science and religion is not part of the mainstream. However the idea that neuroscience can bridge the Two Cultures divide is more commonly found. “Neuro-” as a prefix is now being found in disciplines as far apart as neuro-aesthetics and neuro-theology, suggesting that neuroscience is set to be the grand isthmus to bridge the two cultures of science and everything else. But, just as with quantum theory and religion, we note that this apparent isthmus is not like Pirsig’s: it is not in the first instance shared between the two communities, not even if we grant it radically different meanings in them. Only one community is bound up with it and finds meaning in it beyond mere metaphor: science. Could the alleged isthmus here be no natural joining of continents, but in fact the bridgehead for an attempted takeover?

What isthmus theory would suggest in this scenario is that knowledge domains are not like car parts, designed to fit together to make a whole of a higher order. It suggests instead that domains can be taxonomised into a hierarchical structure, but that for one domain to have kinship with another requires a common isthmus. An isthmus joining domains further down the chain has no relevance for domains higher up, and a proposed isthmus may be no more than a take-over bid in disguise, if it is not truly common to both domains. Isthmus theory does not provide for the unification of all knowledge domains, but examines kinships or contiguities between domains that remain far more separate than connected.

But what of those who insist, in intellectual acts of the most daring futurology, that the unification of all knowledge is possible and will give rise to a glorious new entity? We have encountered thinkers who certainly believe this but are rather vague about the teleology of it. And we only have to turn to religious thinkers like Teilhard De Chardin and Sri Aurobindo, and scientific thinkers like Frank Tipler and Ray Kurzweil to discover visions of this final union, and
names for the ultimate entity. De Chardin came up with the term Omega Point, also taken up by Frank Tipler. Aurobindo uses ‘Supermind’, while Kurzweil uses ‘Singularity.’ There is no doubt that the works of these thinkers is inspirational to many, but the truth remains that the discovery of any trajectory that proves these outcomes is yet to come. What persuades them all, of course, is the accelerating nature of human knowledge discovery. However an acceleration proves no asymptote, and certainly cannot disprove a later deceleration. The jury has to be out on these assumptions. As yet there is no plausible entity that would be the ultimate integration of all knowledge.

In the meantime, however, as the world’s knowledge communities wait for the holy grail of the unified field theory in physics and a convincing ‘theory of everything’ across the remaining knowledge domains, a danger grows. Along the road to integration the very effort is creating a huge opportunity for science to make a take-over bid for other knowledge domains. In the name of integration scientism – and its philosophical basis in Logical Positivism – is encroaching on knowledge domains where it has no business. The consilience of biologist E. O. Wilson is a good example.

Against Consilience

In Richard Feynman’s autobiographical work Surely You’re Joking Mr Feynman (1988) he tells us how he made a deal with a painter friend to trade expertise. Feynman learned painting while the painter learned quantum theory. However the mutuality of it was lost when the painter gave up on the physics after a period, where Feynman continued to paint and exhibit his work in galleries long after. It is the same lost mutuality between the protagonists in Lodge’s novel. This proves one thing: it is easier for a scientist to apparently master the humanities or an aspect of it than vice versa. We saw that Bragg’s 1999 article included Gould among scientists literate in the humanities. He also cited Dawkins, Hawking, Penrose, Pinker, and Greenfield admiringly but wondered if it was not just a passing fashion: what I am calling the bi-literate scientist. More than ten years on my conclusion is that the phenomenon is here to stay, partly bolstered by the aftermath of 9/11.

In the rush to examine religious fundamentalism there emerged what is now called the new atheist – highly literate scientists like Dawkins, who received fresh impetus to furiously research religion and the humanities. In turn these provoked what I have called the new defenders of faith, who are bi-literate humanists. They in turn have been furiously researching science. (For a detailed account of this see Part Two of my book Postsecularism: The Hidden Challenge to Extremism.) Schumacher (1978) cites Victor Frankl for us on this subject; “What we have to deplore therefore is not so much the fact that scientists are specialising, but rather the fact that specialists are generalizing” (p. 13). The fact that Feynman took up painting is one thing, simply a second specialism, but what the bi-literate scientists are now doing is to generalise from their scientific specialism. They pontificate on all possible subjects and, as Bragg shows, they are well received. Dawkins for example was voted Britain’s top intellectual by Prospect magazine in 2005, coming third on the world stage after Noam Chomsky and Umberto Eco.
It is the bi-literate scientists who are threatening a unification of all knowledge as *science*, and E. O. Wilson is amongst the most persuasive of them in his book *Consilience: The Unity of Knowledge*.

Wilson (1998) sums up his project as follows; “The central idea of the consilience world view is that all tangible phenomena, from the birth of stars to the workings of social institutions, are based on material processes that are ultimately reducible, however long and tortuous the sequences, to the laws of physics” (p. 266). This would be laughable for Pirsig. As he shows, there may be isthmuses all the way up on the journey from quarks to social institutions, but each isthmus is also a kind of meaning exchange: the inhabitants of the domains may interpret the narrow common ground that connects them quite differently. For Pirsig, to jump from quarks all the way up the chain to the moral questions of society is to abandon all hope of meaning, or in his terms, *quality*. Schumacher also disposes of Wilson’s proposition in the most elegant of terms, and so do all the outsider scholars we have mentioned.

So why take Wilson seriously? Because of Lodge, not Pirsig. Lodge’s campus novel *Thinks…* is that of the literary insider who finds rather delicious the novel terrain of cognitive science, perceives perhaps some kind of threat in it, but is ultimately not disturbed. Pirsig, as the outsider, does not have to take on the assumptions of any discipline, and hence can see clearly the absurdity of attempting to explain such a thing as consciousness in terms of quarks. But Lodge as the insider represents the mainstream, and in his parable of the take-over bid from science the feminine principle of the humanities, particularly the creative arts, is overwhelmed by the masculine principle of the sciences. Lodge’s defense is simply inadequate against the onslaught typified by Wilson’s consilience.

We have seen that Wilson (1998) justifies his mission as follows; “When we have unified enough certain knowledge, we will understand who we are and why we are here” (p. 8). Elsewhere he says; “The greatest enterprise of the mind has always been and always will be the attempted linkage of the sciences and humanities” (p. 8). Wilson acknowledges the importance of Dawkins’ memes in his programme for the unification of science and culture. He understands the meme to be the ‘unit of culture’ and wants it to stand at the base of semiotics, which in turn he considers to be at the basis of a scientific explanation of culture. He says he wants “to establish the plausibility of the central programme of consilience, in this instance the causal connections between semiotics and biology” (Wilson, 1998, p. 136). Wilson has a hierarchy: quarks at the bottom, working up the scale of size and complexity to biology, then a leap to semiotics, and from there to mental processes. He says; “Belief in the intrinsic unity of knowledge rides ultimately on the hypothesis that every mental process has a physical grounding and is consistent with natural science” (Wilson, 1998, p. 96).

Wilson’s programme is not that different to Dawkins’ or Dennett’s, but is on a grander scale, and is specific about the attack on the social sciences, economics, the arts, and religion. For each of them he has a bridgehead, or alleged isthmus.

Wilson does make the valuable point that consilience within the social sciences is nowhere near as pronounced as in the exact sciences. What is more there is a gulf between them: he laments how little the social sciences draw on the hard science. However the thinks that is changing with the recent advances in science, and proposes four bridges across the divide: brain
science, human behavioural genetics, evolutionary biology and the environmental sciences (Wilson, 1998, p. 192). His bridges are of course proposed isthmuses, and we will gradually focus down on brain science as the key bridgehead of his assault. Welcome to the world of neuro-everything.

Genetics in one form of other is of course the preferred bridgehead for Dawkins, Dennett, Crick and other biological materialists, though the gene itself has morphed into the meme in order to carry through the attack. Evolutionary biology, if it gains ground in the social sciences, will be persuasive to some simply because of the enormous cachet given to the word ‘evolutionary’: it has come to mean progressive. In turn the environmental sciences seem a good candidate for a field where the integration of knowledge is progressing apace. In reality however environmental science is an interdisciplinary branch of the natural sciences, and as such will always fails to capture Pirsig’s quality: it offers analysis but no synthesis, and even Wilson inadvertently proves this, as we shall see shortly.

On another subject Wilson (1998) says “The enterprise within the social sciences best poised to bridge the gap to the natural sciences, the one that most resembles them in style and self-confidence is economics” (p. 195). In fact Wilson is least convincing here, particularly after the so-called Credit Crunch of 2008-2010. Even without this economics as a science has had a predictive power so low as to make it a laggard even in the relatively undemanding domain of the social sciences.

Wilson is conscious of the contrast made between science as an activity of analysis – breaking down into parts, and that of the arts as a creative act. He admits that while science “advances by reducing phenomenon to their working elements,” he is adamant that it “does not aim to diminish the integrity of the whole.” We now come to his important statement on synthesis which then follows: “On the contrary, synthesis of the elements to re-create their original assembly is the other half of scientific procedure. In fact it is the ultimate goal of science” (Wilson, 1998, p. 211: emphasis added).

If so, then Frankenstein.

In fact the goal of the hard sciences has never been, and never will be, synthesis. If there is a domain where the working elements are built into larger structures, it is engineering. It is true of course that the engineer often needs to draw on a wide variety of scientific knowledge – in addition to the craft of that particular branch of engineering – but this does not represent a synthesis of knowledge, merely the skillful application of it. And the unskillful application potentially leads to horrors such as Frankenstein, and social engineering experiments such as eugenics and forced migrations.

In fact, Wilson does not suggest that synthesis is the isthmus between science and the arts: instead, it is interpretation. It seems that for Wilson, criticism will have attained legitimacy when it is based, ultimately, in physics. He says; “Interpretation is the logical channel of consilient explanation between science and the arts” (Wilson, 1998, p. 211). It is significant then, that the outsider, so gifted in criticism, is the one who rejects such consilience.
Here Wilson has fallen into a common trap for scientists: he understands all knowledge domains as predicated on explanation. The sciences are successful to the degree of their explanatory and predictive powers – which is why, on either count, economics cannot be classed as an exact science. But the arts are successful for quite different reasons, and criticism or interpretation in this field is likewise not successful as explanation, but as exegesis perhaps, or as polemic, or even as an art in its own right.

On religion Wilson (1998) has this to say: “The eventual result of the competition between the two world views, I believe, will be the secularisation of the human epic and of religion itself” (p. 265). Here Wilson has lost patience it seems with the project of unification: religion is a knowledge too far for him, and deserves only secularisation. He fails to find any isthmus here, however implausible. (Instead we have to rely on Dennett (2007), who is cheerfully convinced that memes will come to the rescue).

Wilson’s take-over bid is consistent with those mounted by Dawkins and Dennett, and attempted in countless small thrusts from bi-literate scientists and others who, even if not trained in the sciences, believe in its domination. We have seen that Wilson is systematic in a way that others probably are not, in that he constructs isthmuses or variants of his strategy for each of the domains of the social sciences, economics, the arts and religion, though the last will simply be swept away. The integration of all knowledge, its unity as he prefers, is this: to be reframed as science, science and more science.

The outsider scholar, armed with various hierarchies, and a consideration of the isthmus as a legitimate but narrow bridging idea between knowledge domains, resists consilience. In contradiction to Wilber the outsider scholar is not afraid of offending science or modernity in placing science at the bottom of a hierarchy of understanding, and sternly resisting its upwards and usurping climb.

But how exactly? How is the take-over bid of consilience to be resisted?

*With the confidence that Wilson’s supposed isthmuses are going to let him down.*

We have already hinted at the weakness of some of them, but we can start by properly disposing of synthesis as any kind of isthmus. Although he uses interpretation as his bridge from science to the arts, it is the discussion of the arts that prompted him to declare that the goal of science is synthesis, as mentioned above. Yet if this were so, the environmental sciences would be able to construct ecosystems, for example. The analysis of all the parts of an ecosystem gives proper scientific knowledge about the interaction of living things, so why should a synthesis not be able to put together novel ecosystems with existing organisms? This does not sound too ambitious perhaps, no hint yet of attempting to make a living organism from inorganic components. Wilson himself describes the most ambitious attempt yet to build an ecosystem, Biosphere 2, as “not a failure” despite the collapse of the artificial ecosystem within it and the extremes of physical and emotional discomfort experienced by its inhabitants. But even he concludes; “The living world is too complicated to be kept as a garden on a planet that has become converted into an artificial space capsule” (Wilson, 1998, p. 280).
On this basis Wilson very rightly gives up on synthesis, as he also does, for example when he muses that the 3D structure of a protein cannot be predicted from a knowledge of its atoms. Pirsig is way ahead of him on the impossibility of predicting anything substantive about a higher-order world from its lower-order constituents. This leaves Wilson’s other big bridges: brain science, human behavioural genetics, and evolutionary biology. These are really just two: neuroscience and genetics, of which the latter can be challenged more easily. For Wilson, Dennett and Dawkins, the gene is the key to biological life, but poses a problem for their take-over bid: it works too slowly to account for changes in human culture, the very bit they are staring at longingly with those glittering snake-eyes. Hence the gene has become the meme. This, being a non-material entity, is not a proper object of science, so the necessary step is to imagine the neuroscience of the meme, or to put it another way, its neural correlate.

So, as suggested earlier, it all boils down to the brain, or in other terms, neuro-everything. Here is the grand proposed isthmus of the take-over: the brain science that says the brain is material, and is built from quarks upwards. However, the mind, which is at the pinnacle of the hierarchy, must be somehow winched down into brain. Perhaps the best expression of this ambition comes from the neuroscientist Antonio Damasio:

From my perspective, it is just that soul and spirit, with all their dignity and human scale, are now complex and unique states of an organism. . . . And this is of course the difficult job, is it not: to move the spirit from its nowhere pedestal to a somewhere place… (Damasio, 1996, p. 252)

I have called the whole attempt to move mind from its “nowhere pedestal” into the brain “Damasio’s error” (King, 2007, p. 257), and am not alone apparently. What brain science does is to make correlations between mental content and brain state, and is increasingly successful in doing so. The crucial question here is as follows: is a correlation a legitimate isthmus between knowledge domains? Is the neural correlate a sufficient reason, not so much to winch down mind into brain, but to winch up biological science into contact with mind? Does it convince, like the machine code as the isthmus between hardware and software, the Schroedinger equation as the isthmus between physics and chemistry, the algorithm as the isthmus between computer science and computer art, and the script between religion and film?

I argue no. A correlation isn’t good enough. There has to be a common ground between two domains that explorers of both can meet at. No philosopher, mystic, novelist, poet or psychologist will ever encounter ‘synapse’ or any other term belonging to brain science in their investigations of mind. And no brain scientist will ever encounter consciousness in the brain. The isthmus simply isn’t there. They are non-overlapping magisteria, simply because human experience operates at a certain order of description. As Pirsig or Harding say the human is not the quark, atom, cell, organ, society, planet, galaxy or universe: human experience is human. Perhaps cells and galaxies feel, know and experience, but that must remain pure speculation, because they belong to different orders.

Consilience, then, is a plan to unify all knowledge as science, and its outcome is mind-brain identity. More broadly it represents a take-over of all the humanities by science, and as such should be resisted. Before considering the shape of that resistance, it is worth briefly considering why science has the exalted place it does in contemporary culture. In the first instance, clearly, its
predictive power, and the technologies that ride on that predictive power, give us immense physical freedoms from drudgery, pain, boredom and even oppression, as richer societies can afford welfare, human rights and so on. But its utility alone cannot explain the fascination we have for it. It is also beautiful.

It is this more than anything else that is so breathlessly present in the works of the bi-literate scientists: they are aching to share the beauty of science with us. Now, Max Weber used the interesting term ‘musical to religion’ to describe what he personally lacked: a feel for the lived religious life. One can extend this expression to any field: one can be musical or musical to anything, and that includes science. Those in the humanities who are inspired by science writing, including Melvyn Bragg, are clearly musical to science. Many are not, but they remain silent. It is unfashionable to say with Yeats that science is the opium of the suburbs.

But the beauty of science should be placed in perspective. No one denies that the good life for an individual might variously include a fine wine, a rare cheese, a new chess opening, a murder mystery, a visit to an exhibition of modern art, or the appreciation of architecture. Or music or religion. Science as an aesthetic experience can be included in these pursuits as expansive of the human sensibility, just like the others, and a writer like Richard Dawkins can be a magnificent expositor of it. But to give it priority where it insists that the fine wine, rare cheese, painting or whatever are states of the brain is to allow it as one aesthetic to dominate and de-aestheticise other experiences. Science should take its turn alongside the cheese-board, for those musical to it. And as to its utility, sure: if one’s brain goes wrong, let’s have the mechanic in.

Hence the first form of resistance to science is to recognise that utility is utility, and that any one aesthetic pleasure has no right to lord it over another. But I am going to offer a more active form of resistance: to actively fight brain, neuron, synapse, peptide and the whole caboodle. It is instructive to start with Aristotle, who thought that the brain was an organ for cooling the blood, in carrying out which function it also produced snot. In the Middle Ages only the latter function was attributed to the brain. It seems that the most subtle of intellects have no particular reason for associating mind with brain. However, the issue is not as laughable as Aristotle unfortunately made it. In the exact sciences term like brain, neuron, synapse, peptide and so on do not refer so much to things as to processes. The brain, out of this collection, is large enough to see with the naked eye, but its functioning is a matter of inference. Things that cannot be seen are totally a matter of inference, not at just one remove, but often down a long chain. The electron for example is made known to science through a long inferential chain which starts with experimental phenomena like the photoelectric effect or observations of the gold-leaf electroscope.

When we see red, brain science tells us that signals pass along the optic nerve into the visual cortex, and various neurons fire up. Once we have a full description of the pattern of neuronal activity we will have the neural correlate of red, allegedly. But the neuron as a concept is a composite of its form as revealed in a microscope, and the function ascribed to it, involving electrons, and arrives at our understanding by not just one inferential chain, but a series of interlinked ones. Now here is the point of this discussion: “red” is a direct experience, but ‘neuron’ is a construct – albeit maybe a true one – that is present in our experience only as the mental rehearsal of a complex inferential chain. There is no direct experience of neuron. Or for that matter, brain, synapse, peptide and so on. Red exists as a direct experience and also as a
construct (for example I can rehearse its place in the electromagnetic spectrum and the sensitivity of certain receptors to its wavelength), but neuron and electron exist only as construct. There may be neural correlates to the experience of red, but there is no experiential correlate to brain, neuron, synapse, peptide and so on. Aristotle had no reason at all to think that the brain was the seat of mind – let alone posit the absurdity of mind-brain identity – because there was nothing in his immediate experience corresponding to brain. Maybe neurons experience other neurons; maybe distant galaxies experience other distant galaxies. But human experience is on a human scale and at a human organisational level: for all else only inference remains, and inference cannot replace experience.

Here is the arrogance of science as uttered by Wilson (1998); “Without the instruments and accumulated knowledge of the natural sciences – physics, chemistry, and biology – humans are trapped in a cognitive prison” (p. 45). On the contrary, I assert, science traps humans in an inferential prison, where they are so busy rehearsing inferential chains that they neglect immediate experience. The blackbird sings on the window ledge, a jazz line rendered in an improbable melodic baritone, but the scientist, wants us, not to experience this directly, but to rehearse with him or her such things as the audio spectrum, sympathetic vibrations, neural transmission, auditory centres and a total brain activity more complex than the workings of a nuclear power station. In the meantime the bird is gone. So is life. To put it simply, what really matters to us are not the things that entail long inferential chains, but the things for which there are experiential correlates. Red, pain, and the blackbird’s song matter, long explanations don’t, except for utility, and for the fun of it if you are so inclined. If you are more musical to the long inferential chains of science than you are to the blackbird, or the cheeseboard, fine. Just don’t foist your hobby on me as an ultimate truth.

Conclusions

The question of the integration of all knowledge is an important one of our times. In this investigation I have started with a certain scepticism that one cannot unify knowledge, only taxonomise it. However, in looking at some hierarchical schemes for taxonomising knowledge as elaborated on by various ‘outsider’ scholars there is much at stake, beyond the mere selection of the best possible taxonomy. Of particular value is the ‘isthmus’ concept as offered by Pirsig, as a way of discovering whether any two knowledge domains can be legitimately related to each other, and thus in some limited way integrated. It turns out that isthmus theory also becomes valuable in countering attempts by scientists to integrate knowledge which are often nothing more than a take-over bid for the humanities by science. In arguing against one of the most sophisticated such attempts – the consilience of biologist E. O. Wilson – we discover that his proposed isthmuses are bogus, and are more like military bridgeheads or Trojan horses. The chief of these is the attempted insertion of brain science into every aspect of the humanities, based on the argument of the neural correlates. An opposing argument is developed here to turn the scientists’ move against them: that of examining concepts for their experiential correlates. It turns out that brain, neuron, synapse, and peptide are not objects in our direct experience. They have no experiential correlates and hence cannot be ranked with the objects of the humanities which do. The objects of science mostly remain products of lengthy inferential chains, and, while their rehearsal has utility, and even, for the right kind of mind, beauty, the single-minded pursuit of these rehearsals would be the death of all experience.
But the energy that drives the integration of knowledge has a source beyond mere utility, or a rarefied kind of intellectual aesthetics: it also derives from a misplaced mystical impulse for unity. It is misplaced because the analytic mode of thought of the sciences has no synthetic counterpart: one cannot find mystical union by first dissecting the whole into parts, and then re-assembling the parts into a whole. The mystical status for this misplaced search for the union of all knowledge is perhaps why few convincing arguments have so far been assembled against the takeover bid by the sciences of the humanities. I hope that the ideas presented here provide some grounds for serious opposition to this attempted colonisation in the name of integration.

References


Global Knowledge Futures: Articulating the Emergence of a New Meta-level Field

Jennifer M. Gidley

Abstract: In this paper I articulate a new meta-level field of studies that I call global knowledge futures—a field through which other emerging transdisciplinary fields can be integrated to cohere knowledge at a higher level. I contrast this with the current dominant knowledge paradigm of the global knowledge economy with its fragmentation, commodification and instrumentalism based on neoliberal knowledge capitalism. I take a big-picture, macrohistorical lens to the new thinking and new knowledge patterns that are emerging within the evolution of consciousness discourse. I explore three discourses: postformal studies, integral studies and planetary studies—using a fourth discourse, futures studies, to provide a macro-temporal framing. By extending the meta-fields of postformal, integral and planetary studies into a prospective future dimension, I locate areas of development where these leading-edge discourses can be brought into closer dialogue with each other. In this meeting point of four boundary-spanning discourses I identify the new meta-level field of global knowledge futures, grounded in human thinking capacities, such as creativity, imagination, dialogue and collaboration.

Keywords: Foresight, futures studies, integral, knowledge economy, planetary, positivism, postformal, post-positivism.

Introduction

Imagination is more important than knowledge. For while knowledge defines all we currently know and understand, imagination points to all we might yet discover and create.

(Albert Einstein)

We hear a lot today about the knowledge economy yet this economistic framing fails to attend to the richness and diversity of knowledge creation that is being enacted on a planetary scale. We also hear the term information era as if it were a complete encapsulation of the present phase of

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1 This paper draws from and extends earlier published research by the author (Gidley, 2007a, 2007b, 2010c, 2012a, 2012b).
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3 My use of the term planetary studies includes newly recognized fields such as global studies, and discourses that refer to planetization (Teilhard de Chardin, 1959/2004), planetary futures, planetary culture and planetary consciousness (Gangadean, 2006a; Montuori, 1999).
cultural evolution. The proponents of the information era generally fail to attend to the evolutionary move beyond mere information to new ways of knowing, new knowledge patterns and the emergence of several discourses that attempt to cohere knowledge.

At the close of the first decade of the 21st century, some of the most creative, innovative, and dynamic knowledge around the globe is being produced and disseminated outside mainstream universities. Academic researchers and research council bureaucrats need to take heed. Now that “knowledge production”, “knowledge transfer”, and “knowledge dissemination” have become core commodities of the increasingly competitive global knowledge market economy, how will universities and their research centers keep up?

In the last few decades there has been a proliferation of new terms and concepts emerging at the periphery of the academic landscape—all pointing in diverse ways to the need to move beyond fragmented thinking and hyper-specialization. Such terms include complexity, paradox and systems thinking; holism and wholism; integral and integrative; multidisciplinary, transdisciplinary and postdisciplinary, to name a few. Some of these terms are used in specific contexts with a variety of different meanings; others claim to cover the whole of the knowledge domain. Confusion abounds in this new thinking era.

While the juggernaut of old-paradigm thinking seems intent on holding on to educational institutions, there is a burgeonning of new knowledge paradigms breaking through from the periphery. A plethora of private providers, social movements, niche research institutes, open source resources, edutainment and, of course, the ubiquitous information kaleidoscope of the world wide web, make it increasingly difficult for the former bastions of knowledge production and dissemination—formal educational institutions to compete for “market-share.” But is competition the best way forward? Could it be that the leadership of universities and research councils need to listen more deeply to the periphery—to the new, unorthodox developments in the creation and dissemination of knowledge?

A preliminary global environmental scan of the emerging discourses that refer to new knowledge suggests that much of what is called “new knowledge” more accurately relates to new technologies—both hard and soft. These include the global proliferation of high-tech toys, cynically designed to become obsolescent within ever-shorter time-spans from their release, and the moment-by-moment updates and upgrades of every imaginable kind of software. This type of “new knowledge” is actually not-so-new knowledge, simply repackaged in new technologies. But this techno-knowledge revolution is deeply grounded in the fragmentation, commodification and instrumentalism of knowledge by neoliberal capitalist ideologies. By contrast, the resources required for the flourishing of global knowledge futures are intrinsically human faculties, which are not so dependent on economic and material resources and are thus potentially more sustainable. Creativity and innovation; imagination, inspiration and intuition; anticipation and foresight; dialogue and collaboration are all human capacities that know no bounds except those we self-impose.

My interest in this paper is not in new knowledge technologies per se, but in new thinking capacities grounded in evolving human consciousness—this is what I mean by global knowledge futures (Gidley, 2007b, 2010b). The paper is underpinned by a meta-question: “What are the
leading-edge discourses that identify new paradigms of thinking and how can they be articulated and meta-cohered?"

This special issue of Integral Review, based on the Research Across Boundaries Symposium in Luxembourg (2010), is a pioneering attempt to cross boundaries and build bridges—not just between and across disciplines—but between theories and perspectives that are already in themselves meta-theoretical. In this paper I take a big-picture, macrohistorical lens to the new thinking and new knowledge patterns that are emerging, and contextualize them within the evolution of consciousness discourse. I offer a broad overview of several meta-theoretical approaches, including postformal, integral, and planetary studies, and project them into their possible futures using the prospective reasoning of futures studies.

These areas of research—postformal, integral, planetary, and futures—are relatively new transversal fields, having arisen in their academic forms over the last five decades, notwithstanding earlier proto-forms. In spite of the breadth and depth of these meta-theoretical approaches in their own right, there is a tendency among proponents of these approaches to isolate themselves within their own discourse and not allow the cross-fertilization that could mutually enrich their research. At best this does not enable appropriate knowledge sharing; at worst it can lead to ideological siloism—thus limiting the larger development of the project of knowledge coherence.

I also briefly identify and articulate my own boundary-crossing theoretical contributions in each area and how my research takes additional steps towards further levels of dialogue and potential coherence within and between these approaches. Through my boundary-crossing endeavors, I have begun to create a new meta-level field that I call global knowledge futures.

An Evolutionary Spin on Global Knowledge Futures

Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?
(T. S. Eliot, 1934, The Rock, lines 12-13)

One of the greatest problems we face today is how to adjust our way of thinking to meet the challenge of an increasingly complex, rapidly changing, unpredictable world. We must rethink our way of organising knowledge. (Morin, 2001, p. 5)

Both of these quotes speak of knowledge. The first is from American-British poet, T. S. Eliot, and the second is from French philosopher, Edgar Morin. Eliot bemoans the loss of wisdom while Morin hints at its re-awakening. Perhaps it takes the eye of an artist, a poet, to perceive the loss of wisdom in the stripped-down, prosaic pragmatism of the Information Era. Yet it is a philosopher—a lover of wisdom—who actively thinks towards more complex ways of organizing knowledge in the Planetary Era.

In my reading of Morin’s work it becomes immediately evident through the philosophical and poetic richness of his language and concepts that his notion of knowledge is already filled with the type of postformal, integral, planetary wisdom and foresight that is being gradually
articulated here. As Eliot indicates, the modern era of hyper-rationality and hyper-specialization has been a reductive process in which the pre-modern unitive world-view of inherited, or revealed, “wisdom” has been superseded by bits—and, more recently, bytes—of information.

In addition to this fragmentation, commodification of knowledge abounds as a socio-cultural by-product of globalization. Borrowing heavily from industrial era metaphors, education is now marketed as the product in a globally competitive “knowledge industry.” The insinuation of neoliberal economic theory into all walks of life—including education—has led to the reframing of education as a subset of the new “knowledge economy.” In this new knowledge economy we can witness nations and regions scrambling to grab market-share through creating “science parks”, “education cities” and “knowledge hubs.” The most disturbing aspect of this “globalization of knowledge” is that it frequently reflects homogenization. This McDonaldization (Ritzer, 2008) of education transplants outmoded models and approaches as if they were fast-food franchises with little regard to the quality of the learning experience for students or the cultural context in which the model is implanted. In the rush to the top of the globally competitive league tables there appears to be a blind disregard for epistemological and cultural diversity, through alternative ways of knowing. With their embeddedness in the global economy such approaches to global knowledge are also locked into short-termism, stasis and homogenization, see Figure 1.

\[ \text{Figure 1: Global Knowledge Economy – Ideological Stasis and Homogenisation} \]

In contrast to the reductive and economistic ideologies underlying the notion of the global knowledge economy my term global knowledge futures is intended to unsettle those who use the term knowledge reductively and/or prescriptively. My research and writing over the last decade has primarily involved identifying and drawing together the ideas, ideals and insights of numerous avant-garde thinkers—across various disciplinary boundaries, across macrohistorical and future time frames and across diverse cultures and worldviews (Gidley, 2007b, 2010b, 2010d). My primary intellectual and cultural interest is in people—and ideas—that eschew the mechanistic, instrumental, reduced versions of knowledge and humanity and have sought to go beyond, to go deeper, to imagine longer time-scales and planetary spaces, to develop and enact more coherent meta-theories and practices.

My notion of global knowledge futures is framed within the understanding that human consciousness is evolving and for the first time in history we can actively participate in co-
creating our futures through conscious evolution—that is, consciously working on our own personal development. Although the notion of evolution is frequently attributed to Charles Darwin, the concept was originally seeded by several integrally-oriented German Idealists and Romantics, towards the end of the 18th century. Almost a century before Darwin published his *Origin of Species* (1859), philosopher/ poet/ theologian Johann Gottfried von Herder claimed that “there exist radical mental differences between historical periods, that people's concepts, beliefs, sensations, etc. differ in important ways from one period to another” (Forster, 2001). Herder’s ideas on the evolution of consciousness were extended by Goethe, Hegel and Schelling—the latter foreshadowing current notions of conscious evolution (Teichmann, 2005). Although inspired by earlier unitive worldviews, these integral philosophers also took a long-term futures perspective. They pointed beyond the limitations of both pre-modern, mythic consciousness and formal, modernist rationality, towards a more conscious awakening of a postformal, integral consciousness. David Ray Griffin refers to this as “constructive” or “reconstructive postmodernism,” which Arran Gare traces to Schelling (Gare, 2002; Keller & Daniell, 2002).

In parallel with the dawning of integral evolutionary thinking in the German states, the Industrial Revolution—a key marker of modernity—was brewing in Britain, with both progressive and disruptive socio-cultural impact. Grounded in the paradigm of logical positivism, which spawned scientific materialism and analytic philosophy, mechanistic notions of human nature cast a shadow on idealist and spiritual notions of human being and consciousness. Since Darwin—and in spite of his under-appreciated writings on love and moral evolution (Loye, 1998, 2004)—the dominant evolution discourse has privileged materialistic biomechanical worldviews. More philosophical and spiritual worldviews were pushed to the margins being regarded as unscientific. However, several leading thinkers in the early to mid 20th century carried forward the philosophical and spiritual evolutionary ideas of the idealists and romantics (Aurobindo, 1914/2000; Gebser, 1949/1985; Steiner, 1904/1993, 1926/1966; Teilhard de Chardin, 1959/2004). They kept alive the notion that human consciousness is evolving beyond materialistic, instrumental rationality to embrace more complex, creative, integral, spiritual ways of thinking and knowing. Yet overall their work has been largely academically ignored.

More recently, evolution of consciousness theories have been picked up and further developed—being ripe for more comprehensive and collaborative articulation through the 21st century. Numerous contemporary theorists from a variety of disciplines have begun to research the evolution of consciousness from a more integral perspective (Bamford, 2003; Bocchi & Ceruti, 2002; Christiansen & Kirby, 2003; Conway Morris, 2007; Cousins, 1999; Donald, 2001; Earley, 1997; Eisler, 1987; Elgin, 1993, 1997; Eliade, 1954/1989; Firestone, West, & Warwick-Smith, 2006; Gangadean, 2006a; Gidley, 2007b; Grof, 1988; Grossinger, 2000; Habermas, 1979; Hart, 2001; Heftner, 1998; Inayatullah, 2004; Jantsch, 1980; Loye, 1998; Montuori, 1999; Morin & Kern, 1999; Nelson, 2005; Neville, 2006; Ornstein & Ehrlich, 1991; Russell, 2000; Saloff-Coste, 2001; Subbiondo, 2003; Swimme, 1992; Thompson, 1998; Wade, 1996; Wilber, 1980/1996, 1981/2006).

The philosophical and theoretical writings that discuss the emergence of a new movement/stage/structure of consciousness are also supported by some longitudinal research. An
emerging change in consciousness was proposed in a study undertaken in the USA over ten years, reporting on the rise of “integral culture”, and identifying almost a quarter of Americans as “cultural creatives” (Ray, 1996). In addition, a 43-nation World Values Survey, including Scandinavia, Switzerland, Britain, Canada and the United States concluded that: “a new global culture and consciousness have taken root and are beginning to grow in the world”—the postmodern shift (Elgin & LeDrew, 1997, p. 2).

Building on the evolution of consciousness literature my notion of global knowledge futures be clearly distinguished from the hyper modernist notion of the global knowledge economy. The cultural pluralism implied in my notion of global, and the ideological diversity in my notion of futures, fold back into the term knowledge, enriching it and opening it up to insights from the leading-edge discourses discussed below, see Figure 2.

Figure 2: Global Knowledge Futures – Dynamic Unity in Dialogue with Diversity

Where the term global in Figure 1, referring to global knowledge economy has a reduced meaning that often infers a homogenized world with growing cultural uniformity, the term global in Figure 2, referring to global knowledge futures infers pluralism and cultural diversity. In Figure 1 the term knowledge is used in a way that it is viewed as a commodity, a part of the economy, whereas in Figure 2 the term knowledge is used in a way that infers multiple ways of knowing and multiple perspectives, as found in integral, transdisciplinary and postformal perspectives. Finally, in Figure 1, the aim and purpose of a global knowledge economy is about making money and profits. By contrast, in Figure 2, the aim and purpose of developing global knowledge futures is to enrich individuals, cultures and societies in ways that develop whole persons (as in the German Bildung), that nurture cultural diversity, and that promote alternative futures of knowledge that is increasingly complex, multi-perspectival, integrated and coherent, to better understand a world that is increasingly complex, multi-faceted, diverse and unpredictable.
Leading-edge Discourses as Facets of Global Knowledge Futures

Arising from my evolution of consciousness research I became aware of the significance of several discourses that either identify and/or enact new stages/structures/movements of consciousness. Each of these discourses has a complex inter-relationship with a mode of thinking or way of knowing that bears its name. I will briefly discuss what I mean by each field of study—postformal, integral, global/planetary and futures—and then articulate in more detail the way of knowing that I see as being identified and/or enacted in each field.

By postformal studies I am referring to 1) the theoretical and empirical research undertaken by positive adult developmental psychologists who identify one or more stages of reasoning beyond Piaget’s formal operations. They use the term postformal reasoning to refer to these higher forms of cognitive and psychological development; 2) the educational research building on critical theory and postmodernism which is referred to as post-formal education or postformality; and 3) my own transdisciplinary postformal approach in which I bring these two discourses together via the term “postformal pedagogies”, build conceptual bridges between postformal reasoning and other avant-garde approaches, that enact postformal reasoning.

By integral studies I include the various discourses that explicitly refer to their theoretical approaches as integral (Aurobindo, 1914/2000; Gebser, 1949/1985; László, 2007; Wilber, 2000b) and also those that can be regarded as integral according to the integrality of their approaches (Morin, 2001; Nicolescu, 2002; Steiner, 1926/1966). The first group explicitly identifies integrality and to greater and lesser degrees also enacts it. The second group—while not so explicit about the term—enact integrality.

By global/planetary studies I refer to the emerging discourses that use the term planetary in the following contexts: critical environmental (biosphere), transcultural (anthro-p socio-sphere), philosophical (noosphere) and spiritual interests (pneumatosphere). I also include the political science and international relations literature that points to the shift from nationalistic to transnational and planetary/global imaginaries (Gangadean, 2006a; Montuori, 1999; Swimme & Tucker, 2006).

By futures studies I refer to the transdisciplinary, transnational and multi-sectorial field, which includes thousands of academics and practitioners, globally. The field is diverse, including some who take an empirical and economistic stance, while I take a pluralistic approach to the field and propose below a new typological framing of its epistemological diversity (See Table 2).

I will now expand on each of these leading-edge discourses, introducing the type of new thinking that each promotes and embraces.

Postformal Reasoning

Postformal in psychology: Postformal is the most widely used psychological term to denote higher developmental stages beyond Piaget’s formal operations—other terms include “post-conventional” (Cook-Greuter, 2000), “hierarchical complexity” (Commons, Trudeau, Stein, Richards, & Krause, 1998) and “vision-logic” (Wilber, 2000a). Adult developmental
psychologists have been researching postformal reasoning for several decades, identifying up to four stages of postformal development. They identify numerous features of postformal reasoning—including complexity, contextualization, creativity, dialectics, dialogue, holism, imagination, construct awareness, paradox, pluralism, reflexivity, spirituality, values and wisdom (Arlin, 1999; Campbell, 2006; Cartwright, 2001; M. Commons et al., 1990; M. L. Commons et al., 1998; Cook-Greuter, 2000; Falcone, 2000; Kegan, 1994; Kohlberg, 1990; Kramer, 1983; Labouvie-Vief, 1990, 1992; Riegel, 1973; Sinnott, 1998, 2005; Yan & Arlin, 1995). Michael Commons has identified a hierarchical complexity of stages of postformal thinking, including systematic, metasystematic, paradigmatic and cross-paradigmatic reasoning (Commons & Richards, 2002; Commons et al., 1998).

Postformal in education: Several educational researchers have also identified the terms postformal and post-formality in relation to critical and postmodern approaches to education (Horn, 2001; Kincheloe & Steinberg, 1993; Kincheloe, Steinberg, & Hinchey, 1999; Rose & Kincheloe, 2003). Kincheloe and Steinberg proposed four key components of postformality: etymology (origins of knowledge, imagination, problem detecting); pattern (deep structures, metaphoric cognition, mind-ecosystem links); process (deconstruction, logic-emotion links, non-linear holism); and contextualization (context, particular-general links, and power issues) (Kincheloe et al., 1999, p. 62-81). Kincheloe referred to post-formality as “the socio-cognitive expression of postmodernism”5 (Kincheloe & Steinberg, 1993, p. 309).

Transdisciplinary postformality: My approach to the term postformal is not limited by the parameters of the developmental psychology or education uses. My use of postformal is transdisciplinary and includes a macrohistorical futures perspective (Gidley, 2007b, 2008b).

There are several features of postformal reasoning that have migrated beyond the postformal psychology literature into the boundary crossing discourses of integral studies, planetary studies and futures studies. The postformal features I want to highlight include: complex thinking (Morin, 2008; Sinnott, 2005), paradoxical reasoning (Griffin et al., 2009), creativity (Montuori, 1998; Montuori, Combs, & Richards, 2004; Salooff-Coste, 2001), dialogue (Gangadean, 1998) and imagination (Gidley, 2009, 2010c; Nielsen, 2004). Complex thinking involves the ability to hold multiple perspectives in mind while at the same time being able to meta-reflect on those perspectives and the potential relationships among them. This is also referred to as metasystemic thinking (Commons & Ross, 2008). Paradoxical thinking is one of the expressions of complex postformal logic. Authors of a recent study that explores the application of postformal reasoning in non-cognitive settings make the following connections between postformal thought, complexity and ability to deal with paradox.

4 The terms spiritual or spirituality, are used in this research, unless otherwise specified, to reflect worldviews that acknowledge that there is more to existence than matter. This could be discussed at length but it is beyond the scope of this dissertation to do so. The use of spiritual is not intended to denote any particular theological or religious view.

5 Postmodernism—a term to denote a critical or deconstructive philosophical perspective in relation to modernism (Keller & Daniell, 2002). While postmodernism is not always regarded as a new stage, structure or movement of consciousness, I note Hampson’s recent paper pointing to the construct awareness of Jacques Derrida (Hampson, 2007). I support the notion that much of French philosophical postmodernism or deconstruction could be regarded as an expression of aspects of the new consciousness.
One general aspect of post-formal thought is that one can conceive of multiple logics, choices, or perceptions of an event or relationship, even if seemingly paradoxical, in order to better understand the complexities and inherent biases in “truth.” Relationships work on shared “truths” and resolution of logical conflicts. (Griffin et al., 2009, p. 173)

Postformal logics go beyond Aristotelian formal logic, which requires an either/or response thus creating what is called an “excluded middle.” Paradoxical thinking refers to the ability to hold in mind the apparently illogical possibility that two contradictory statements can both be true—or indeed both false. This paradox of the included middle allows for both/and and neither/nor to be correct (Nicolescu, 2002). Sardar notes that this “four-fold logic enables us to think in multiples and thus get a better grip on contradictory tensions” (Sardar, 2010). I would also suggest that the attempt to “hold in mind the paradox of contradictory truths—or non-truths” creates uncomfortable tension in the minds and emotions of people only accustomed to using formal logic. It is beyond the scope of this paper to fully discuss the ways that dialogue, creativity and imagination can be regarded as imaginaries that cohere. These postformal features have been discussed in more detail elsewhere (Gidley, 2007a, 2007b, 2008b, 2009, 2010a, 2010d).

Furthermore, this literature raises the question of how we facilitate the ability of people today to think more complexly, creatively, imaginatively and to dialogue rather than debate their differences. I see it as a global educational priority to lay foundations in childhood and adolescence for the unfoldment of postformal reasoning capacities in adults. In this light, we need to develop postformal pedagogies (Gidley, 2007a, 2009).

In summary, my boundary-crossing contribution to the postformal studies field includes:

- Bringing together the postformal psychology and education notions of postformal through my concept of postformal pedagogies.
- Identifying in the broader leading-edge literature the enactment of postformal reasoning features, such as complexity, paradox, creativity, dialogue and imagination, to name a few.

There are important implications of the first point for both the psychology and education fields, in that they may be inspired to cross-fertilize ideas; and also for other fields, in that they may be influenced by learning about the wider potential applications of postformal reasoning. The second point facilitates greater awareness and self-reflection about their participation in a global consciousness shift among thinkers enacting postformal qualities.

**Integral Consciousness**

The genealogy of the term *integral* is somewhat contested among contemporary integral theorists and researchers. As noted elsewhere, before Sri Aurobindo began writing about integral yoga and knowledge, Steiner⁶ was already using the term *integral*⁷ in a similar way at the turn of

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⁶ Steiner also philosophically used terms such as integration, synthesis and unity to express integrative concepts.
the 20th century (Gidley, 2007b). Steiner’s earliest use of integral, to my knowledge, is the following comment he made on integral evolution in a lecture in Paris on the 26th May 1906.8

The grandeur of Darwinian thought is not disputed, but it does not explain the integral evolution of man… So it is with all purely physical explanations, which do not recognize the spiritual essence of man's being. (Steiner, 1928/1978, para. 5. Italics added)

Steiner also used the term integral in a way that foreshadowed Gebser’s use of the term. The latter (Gebser, 1949/1985) claimed that the integral structure of consciousness involves concretion of previous structures of consciousness, whereby “the various structures of consciousness that constitute him must have become transparent and conscious to him” (p. 99). Gebser used the term “integral simultaneity” (p. 143) to express this. This echoes Steiner’s characterization of “the stages on the way to higher powers of cognition … [where one eventually reaches] a fundamental mood of soul determined by the simultaneous and integral experience of the foregoing stages” (Steiner, 1909/1963, § 10, para. 5) [Italics added].

The term integral has been popularized over the last decade by Ken Wilber and Ervin László with their respective integral theories of everything9 (László, 2007; Wilber, 1997, 2000b). Much of the contemporary evolution of consciousness discourse that uses the term integral to point to an emergent, holistic/integrative and spiritually-aware consciousness—draws on the writings of Gebser and/or Sri Aurobindo, either directly, or indirectly through reference to Wilber’s integral theory (Anderson, 2006; Combs, 2002; Earley, 1997; Feuerstein, 1987; Montuori et al., 2004; Murray, 2006; Neville, 2006; Roy, 2006; Swanson, 2002; Thompson, 1998; Wilber, 1997).

In summary, Wilber has made a significant contribution to the integral studies discourse by drawing attention to the emergence of integral consciousness, contemporizing and popularizing it. Wilber’s notion of integral drew from Gebser’s extensive research on what he called ‘integral-aperspectival’ consciousness. Gebser’s major contribution, apart from formally identifying this structure, was to note its emergence in the world in various fields in the first half of last century. Prior to Wilber, Gebser, and even Sri Aurobindo, Steiner had begun in the early 1900s, to identify the emergence of a stage of consciousness beyond abstract, formal, intellectual thinking. Steiner proposed a stage of self-reflective consciousness that he called “consciousness soul” that is not only able to perceive and know the world but to become conscious of itself (Steiner, 1909/1963). This resembles the “double I” identified by the late postmodernists: particularly Foucault and Derrida (Benedikter, 2005). Wilber similarly uses the abbreviation “I-I” to refer to

7 I have identified seventeen texts in which Steiner uses integral similarly to Sri Aurobindo, Gebser and integral theorists today. This matter will be the subject of further research.
8 A comprehensive genealogy of integral thinking is yet to be undertaken. However, there are several key thinkers who must be considered as serious contributors. These include: Russian philosopher Vladimir Sergeyevich Solovyov (1853-1900) whose thesis on “The philosophical principles of integral knowledge” was published as a series of articles as early as 1877; Russian sociologist Pitirim Alexandrovich Sorokin (1889-1968) and Saint Thomas Aquinas (1225-1274). Some consideration has been given to the influence of these early thinkers on integral education by Markus Molz and Gary Hampson (2010).
9 The integral approaches I consider, including my own, need to be contextualized as post-positivist, in contrast to the early 20th century strivings of the Vienna Circle to create a unified science through logical positivism.
the “I” who reflects on itself, sometimes also called the witness (Wilber, 1995/2000 ). Effectively, Steiner identified the imminent emergence of the postformal reasoning feature of self-reflexivity over a century ago. Steiner arguably also contributed the most substantial material in terms of how we can actively develop this new stage of consciousness (Steiner, 1904/1993, 1926/1966, 1934/1983), and how we can educate for it, including dozens of volumes of educational lectures.

As my contribution to further the development of integral theory, I have developed a layered framing through which to view the complementary nature of several significant integral theorists (Gidley, 2010a).10 For the purposes of this schematic summary I have chosen to focus on five integral theorists: Gebser, László, Sri Aurobindo, Steiner and Wilber; and two transdisciplinary theorists: Morin and Nicolescu.11 I propose to view the contributions from several metaphoric perspectives, introducing five—mostly new—terms to integral theory: macro-integral, meso-integral, micro-integral, participatory-integral, and transversal-integral.12 Based on this new framing I intend to demonstrate how the various integral approaches need not be seen to be in competition with each other but rather as complementary aspects of a broader articulation of noospheric breadth that is seeking living expression. Without implying that any of these terms represent closed, fixed categories or that any of the integral approaches could be contained completely within any of these concepts, I have theorized the following provisional mosaic of integral studies as it stands today (Gidley, 2007b, pp. 125-130).

By macro-integral I am referring to the extent to which the integral theorist includes all major fields of knowledge. I suggest that at this level of conceptual integration, Wilber’s AQAL framework makes a highly significant contribution and this is where his strength lies. The breadth of Steiner’s theoretic contribution to the understanding and integration of knowledge is at least as vast as Wilber’s, however it has been largely ignored by both the academy and integral theorists, perhaps to their detriment. Gebser also made an impressive, but largely under-appreciated theoretic contribution to articulating the emergence of integral consciousness in numerous disciplines and fields in the early 20th century. In summary, I see Steiner, Gebser and Wilber as three of the most significant macro-integral theorists of the 20th century with Wilber being the most accessible of the three (Gidley, 2007b, pp. 125-130).

By meso-integral I am referring to the extent to which the integral theorist contributes significantly to theory building within particular fields or theories. I propose that László’s (László, 2007) contribution is highly significant at this level. Having followed a rather more formal, European, academic-scientific approach to theory building, László has taken a general systems approach to integral theory. Although it can be critiqued from a Wilberian view as being partial, it appears more successful than most integral approaches at being taken seriously from an academic perspective. Although Wilber and Steiner have both made numerous theoretic

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10 I am using the terms theorists and theory in this section broadly to cover philosophy, epistemology and methodology.
11 The atypical nature of this list can be accounted for in two ways: My reasons for including transdisciplinary theorists will become evident and other integral theorists who have been considered elsewhere are generally aligned to one or more of these major theorists.
12 I recognize that some of these terms have technical meanings in mathematics, engineering and computer sciences, however, I am using them metaphorically in this context.
contributions to various disciplines, their contributions remain marginalized within mainstream approaches. Sri Aurobindo’s integral approach could also be regarded as a significant contribution at this level—albeit also a marginalized one—given that his philosophy provides a foundation for much of the later integral theory development (Anderson, 2006).

By micro-integral I am referring to the extent to which the integral theorist makes detailed contributions to specific disciplines or fields through the application of their integral theory. I propose that at this level of detailed application of integral theory to a wide range of disciplines and professional fields, Steiner’s extraordinary contribution can no longer continue to be ignored by integral theorists. Although it is beyond the scope of this paper to consider all the fields of application of his theory, extensive reference to the integral nature of his theory and particularly of its pedagogical application can be found elsewhere (Gidley, 2007a, 2008a, 2008b, 2009). By comparison, Gebser’s, Wilber’s and László’s theories are largely conceptual, although Gebser enacts his integrality in the style of his writing, Wilber is making moves towards the application of his theory in various fields and László’s Club of Budapest has an activist dimension.

The notion of participatory-integral is represented here by the integral transformative education theory of Ferrer (Ferrer, 2002; Ferrer, Romero, & Albareda, 2005). Ferrer’s participatory approach13 is inspired by Sri Aurobindo’s integration of the three yogas of knowledge, love and action, which is in turn aligned to Steiner’s thinking/head, feeling/heart and willing/hands (Gidley, 2007b, p. 111). Ferrer emphasizes the importance of the participation of the whole human being (body, vital, heart, mind and consciousness) and claims that most integral education theories are either too cognicentric or too eclectic. He provides an alternative framing, based on Wexler’s notion of horizontal integration, as “the way we integrate knowledge” and vertical integration, as “the way we integrate multiple ways of knowing” (Ferrer et al., 2005, p. 309). Based on this framing Ferrer places most integral, holistic and even transdisciplinary approaches within horizontal integration. My interpretation is that this framing is too simplistic: firstly, because there are other unacknowledged ways that the terms vertical and horizontal are used in integral theory and other theories; and secondly, much depends on how the approach to integrating knowledge is applied. Such a dichotomy could not reasonably be applied to the writings of Steiner, Gebser or Morin.

I also propose a new concept via the term transversal-integral that refers to integral approaches that include and cut across these vertical and horizontal levels/dimensions. While it could be argued that all the integral theorists mentioned cut across these different dimensions to a greater or lesser degree—particularly Steiner and Wilber—I acknowledge two other significant integral thinkers who enact transversal14 reasoning and relationships through their transdisciplinarity. Morin and Nicolescu do not tend to use the term integral, nor are they cited

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13 The term participatory in relation to integral theory is also used in a different way to refer to self-reflective enactment (Hampson, 2007; see also Gidley, 2008b, pp. 13, 110, 124).

14 Professor of science and theology, J. Wenzel Van Huyssteen draws attention to the role of transversality in postfoundational approaches to interdisciplinarity: “Transversality in this sense justifies and urges an acknowledgment of multiple patterns of interpretation as one moves across the borders and boundaries of different disciplines” (van Huyssteen, 2000, abstract).
as integral theorists in much of the integral literature. I suggest the latter is an unfortunate oversight based on semantic and cultural misunderstanding, rather than philosophical and conceptual understanding. From my planetary scanning of the research it is apparent that the term integral is much more widely used in North America than in Europe. By contrast the term transdisciplinary appears to be used in Europe, particularly by Nicolescu and Morin, with similar integral intent. A special feature of both Nicolescu’s and Morin’s transdisciplinary philosophies is their attention to transversal relationships.

In summary, my boundary-crossing contribution to the integral studies field includes:

- An integration of integral theories that deepens integral evolutionary theory by honoring the significant yet undervalued theoretic components of participation/enactment and aesthetics/artistry via Steiner and Gebser as a complement to Wilber’s conceptual emphasis.
- A meta-framing of interrelationships among significant integrative approaches that are: inclusive of the vastness of noospheric breadth (macro-integral); that provide rigorous theoretic means for cohering it (meso-integral); that attend to the concrete details required for applying the theories (micro-integral); that encourage the participation of all aspects of the human being throughout this process (participatory-integral); and that are able to traverse and converse across these multiple dimensions (transversal-integral).

The significance implications of my contributions are that if proponents of the different streams of integral theory are able to see that they are not necessarily “in competition with each other” but rather are providing complementary perspectives that each support the other, then this can only benefit the growth of global knowledge futures in its broadest sense.

Planetary Consciousness

In addition to bringing the postformal literature into dialogue with integral perspectives, this paper also introduces a third strand of literature—the planetary consciousness literature. While the psychological literature on postformal reasoning primarily focuses on empirical and analytic articulation of higher stages of reasoning, and the integral literature—particularly Wilberian integral—tends to emphasize the epistemological crisis and how this can be transformed by integral consciousness, the literature on planetary consciousness introduces a much stronger

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15 However, integral theorists from the California Institute of Integral Studies, Alfonso Montuori and Sean Kelly, have been translating Morin’s writing over the last decade and clearly appreciate its significance for integral studies.
16 A lack of clarity on these matters within integral theory may result from a conflation by some American integral theorists of transdisciplinarity with the concept interdisciplinarity, which is more widely used in the US. From my reading of these terms, Nicolescu’s transdisciplinarity is closer in meaning to integral than it is to interdisciplinarity.
17 The Charter of Transdisciplinarity developed in 1994 by Nicolescu, Morin and others acknowledges the horizontal integration of the exact sciences, humanities, social sciences, art, literature, poetry and spirituality (p. 149); the vertical integration of intuition, imagination, sensibility, and the body in transmission of knowledge (p. 150); and also the significance of broader, transversal integration through a “transcultural, transreligious, transpolitical and transnational attitude” (Nicolescu, 2002, p. 140).
critical, normative element. In my view this must be a vital component of boundary-crossing conversations in the 21st century, given the complexity of our world and the multiple crises that exist.

The critical element is lacking in much of the psychological literature on postformal thinking18 and much of the integral theory,19 particularly that based on Wilber, with some exceptions (Esbjörn-Hargens, 2005; Hochachka, 2005; Zimmerman, 2005). Although Wilber repeatedly claims that his AQAL framework includes “body, mind, and spirit in self, culture, and nature” the strength of his critiques of the eco-philosophies of the romantics and the contemporary “green movements” potentially undermine the critical efforts of environmental ecologists to re-prioritize the needs of nature as part of a fully integral agenda (Hampson, 2007). The planetary scale and urgency of our current crises need to be foregrounded and brought into intimate relationship with the epistemic shift in consciousness. This critical component is more evident in the evolution of consciousness literature that favors the term planetary—rather than postformal or integral—to denote the emergent consciousness.

The use of the term planetary has been increasing within evolution of consciousness discourse. The semiotic pluralism of its contemporary usage provides a counterbalance to the more politico-economic term, globalization. Many researchers who use the term planetary have been inspired by Teilhard de Chardin’s notion of the planetization of mankind (Teilhard de Chardin, 1959/2004). The phrase planetary consciousness is emerging as an alternative to the terms postformal or integral to characterize the new consciousness, particularly in the light of our current planetary crisis. In addition to its popular use by environmental activists it is used in academic contexts by a range of philosophers, scientists, educators and sociologists (Earley, 1997; Gangadean, 2006a; László, 2006; Miller, 2006; Montuori, 1999; Morin & Kern, 1999; Swimme & Tucker, 2006). This critical use of planetary has been emphasized in the philosophical writings of Morin who refers to the present times as the Planetary Era, which he claims began around five hundred years ago (Morin, 2001, 2005a, 2005b; Morin & Kern, 1999). Several other contemporary writers have also been influenced by Morin’s concept of planetary (Bocchi & Ceruti, 2002; Ceruti & Pievani, 2005; De Siena, 2005; Montuori, 1999; Poletti, 2005; Saloff-Coste, 2001).

Although the term globalization is often used in the politico-economic discourse where the term global may be tacitly infused with notions of homogenization, several researchers have also use the term global to represent more pluralistic notions. Political scientist Manfred Steger refers to the “rise of the global imaginary” which he regards as having both reactionary elements such as those reflected in fundamentalist global religious groups, and radically progressive elements such as those expressed in the justice globalism movement (Steger, 2008). Systems engineer and former president of the Noetic Sciences Institute, Willis Harman (1988) was referring to the

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18 Notably some of the pioneering post-formal educational literature has a critical element (Kincheloe & Steinberg, 1999; Kincheloe et al., 1999).
19 As indicated above, Laszlo’s integral theory of everything is infused with a critical awareness of planetary issues as is Gandagean’s integral philosophy. Their works already represent an integration of integral and planetary perspectives, however, they are less explicit about the developmental perspectives reflected in the postformal literature.
emerging “global mind change” over twenty years ago. A recent special issue of the journal *Futures* is focused on “global mindset change” (Kapoor & Gidley, 2010).

Harman conceived a hierarchical model of science drawing on Popper’s *three worlds* (Popper & Eccles, 1977) which is helpful in demonstrating my layered view of the elements of the planetary studies field. I have adapted Harman’s model (see Table 1) to include the notions of *geosphere*,20 *biosphere*, *noosphere* and *pneumatosphere*.21 This framing also parallels Steiner’s layered view of science (Gidley, 2008b).

In summary, my boundary-crossing contribution to the planetary studies field includes:

- The development of a multi-layered framing of the different streams within the discourse, incorporating critical environmental (biosphere), transcultural (anthropo-socio-sphere), philosophical (noosphere) and spiritual interests (pneumatosphere).

This contribution has significant implications for a number of fields. A greater understanding of the importance of using adequate epistemologies and methods for each level of reality may have an impact of the way that global crises are dealt with, the way that international relations are conducted, even in terms of the futures of world governance and collaboration amongst historically divided domains and sectors.

**Futures Studies, Foresight and Anticipation**

While acknowledging that thinking about the long-term futures has a much longer tradition than the late twentieth century, its presence in the academic literature has only arisen since the 1960s. There are several typologies22 to describe the different futures epistemologies and how they have emerged. The typology below builds on earlier models developed over the last twenty years—most of which build on Habermas and propose three or four different futures paradigms (Inayatullah, 1990; Slaughter, 2008a). I propose a five-stranded futures typology, beginning with a single bifurcation between positivist and post-positivist (see Figure 3).

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20 There is a complex genealogy to the terms geosphere, biosphere and noosphere. The terms *geospheres* (sic) and *biosphere* were coined by Austrian geologist Eduard Suess (1831-1914) as correctly attributed by both Teilhard de Chardin and Vladimir Vernadsky who have both been incorrectly attributed with coining the terms (Vernadsky, 1967/1998 ). In 1943, Vernadsky attributed the coining of *noosphere* to Bergsonian philosopher Le Roy and to Teilhard de Chardin, in 1927 (Vernadsky, 1943/2005 ).

21 In 1929, Russian philosopher Pavel Florenskij coined the term *pneumatosphere*, in correspondence with Vernadsky (Ivashkin, 1990). Florensky included “works of art” within the *pneumatosphere*, as in Popper’s evolutionary Stage 6 (Ivashkin, 1990). Other terms have been used to refer to the *spiritual sphere* beyond the noosphere, notably *Theosphere* (Wilber, 1995/2000 ) and *LogoSphere* (Gangadean, 2006b).

22 Note that other typologies have also been developed but it is beyond the scope of this paper to explore them further (Bell, 1997/2003 , 1997/2004 ; Masini, 1993).

<table>
<thead>
<tr>
<th>Domains of Interest</th>
<th>Harman: Levels of Science \textsuperscript{[Bracketed points added by Gidley]}</th>
<th>“Spheres” of Suess, Le Roy, Teilhard de Chardin, Florensky</th>
<th>Popper’s 3 worlds\textsuperscript{24}</th>
<th>Popper’s Cosmic Evolutionary Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain of spirit</td>
<td>Spiritual sciences [anthroposophy]\textsuperscript{25}</td>
<td>Pneumatosphere</td>
<td>World 3 (products of the human mind)</td>
<td>(6) Works of Art and Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>World 2 (the world of subjective experiences)</td>
<td>(5) Human Language. Theories of self/death</td>
</tr>
<tr>
<td>Domain of language, thinking, culture</td>
<td>Human sciences [psychology, anthropology, philosophy]</td>
<td>Noosphere</td>
<td>World 1 (the world of physical objects)</td>
<td>(4) Consciousness of self/death</td>
</tr>
<tr>
<td>Domain of life</td>
<td>Life sciences [biology]</td>
<td>Biosphere</td>
<td></td>
<td>(3) Sentience (animal consciousness)</td>
</tr>
<tr>
<td>Domain of physical</td>
<td>Physical sciences [physics, geology]</td>
<td>Geosphere</td>
<td></td>
<td>(2) Living Organisms</td>
</tr>
</tbody>
</table>

\textsuperscript{23} In Table 1, it can be seen that these models are isomorphic with each other. In each model the layers do not represent discrete, bounded categories, but rather interpenetrate each other.

\textsuperscript{24} Foreshadowing philosopher of science Sir Karl Popper’s notion of *three worlds*, Steiner also referred to *three worlds*, noting: “a clear understanding of them and of [our] share in them can only be obtained by means of three different modes of observation” (Steiner, 1904/1971, pp. 4-6). He elaborated: “the biologist is concerned with the body, the investigator of the soul—the psychologist—with the soul, and the investigator of the spirit with the spirit” (Steiner, 1904/1971, p. 10). He called for a *spiritual science* (or *Geist* science), which he later developed (see also Gidley, 2008b).

\textsuperscript{25} *Anthroposophy*—wisdom of the human being—is the term Steiner used for his *spiritual science*. It is an interesting lexical combination of anthropology and philosophy.
These approaches are not mutually exclusive, nor should this conceptualization imply a linear developmental model. These are all suitable pathways to futures research depending on the context. Well-informed futures researchers may utilize any or all of these futures approaches depending on their operational context. Each approach represents different epistemological underpinnings, which, to some degree, parallel similar developments in other knowledge fields (see Table 2). As indicated below each of these approaches has strengths and limitations as does the futures studies field as a whole.

**Positivist Approaches to “the Future”**

*The predictive-empirical tradition* originated in the USA. It arose initially from US defense intelligence but was supported as a methodology with broader purposes by the formation of the World Future Society in the late 1960s. This research refers to a one and only future that empirical trends suggest, and is often referred to as the (singular) ‘probable future.’ This approach still dominates the literature base. One of the strengths of this approach is its perceived objectivity and values neutrality. Its weaknesses may include narrowness in focus and lack of contextual awareness. It also implies that trends are inevitable and this can be disempowering if the trends are negative.

**Post-positivist Approaches to “Multiple Futures”**

*The critical-postmodern tradition* originated in Europe, particularly France, growing out of a critical social theory tradition which sought to balance what it perceived as the overly empiricist approach of many futurists in the USA. This led to the foundation of *Mankind 2000* in the late 1960s, which led among other initiatives to the founding of the World Futures Studies Federation (WFSF) in the early 1970s. This approach is normative and is often referred to plurally as ‘preferred futures.’ A strength of this approach is that it makes explicit the—often tacit—contextual and values dimensions and thus leads to a questioning of ‘business as
usual.’ A weakness is its perceived subjectivity, which can sometimes lead to excessive relativism.

The cultural-interpretive tradition arose in large measure from the work of those futures researchers who sought to include non-Western cultures and to invoke a deeper consideration of civilizational futures (Inayatullah, 1995, 2000; Milojevic, 2005; Nandy, 2000; Sardar, 1994). This approach opens up the possibilities of alternative, particularly non-Western and feminist futures, and is a crucial part of the dimension that may be referred to as ‘possible, or alternative, futures.’ Strengths of this approach include its creativity and engagement of multiple perspectives. A weakness is that proposed alternatives may lack feasibility, or be overpowered by the more dominant empiricist approach.

The prospective-action research approach seeks to facilitate empowerment and transformation through engagement and participation. It was initially developed by French and later Swedish futurists and has been emphasized in Australia (Berger, 1964; Bjerstedt, 1982; Boulding, 1988; Hutchinson, 1992; Wildman & Inayatullah, 1996). This could be referred to as ‘prospective’ or ‘participatory futures,’ depending on context. The most obvious strength of this approach is that it engages participants in research projects, empowering them to question and act on alternatives to ‘business as usual.’ A weakness is that if it does not also take account of relevant empirical research, it may lack legitimacy in the dominant positivist scientific circles.

The integrative-holistic futures approach is a relatively new and somewhat contested territory. It is potentially the broadest and deepest possible approach to futures as it can integrate aspects of all the other approaches (Gidley, 2010c; Slaughter, 2003; Voros, 2001). Because of its grounding in complex, integrative and transversal epistemologies it maximizes potential for facilitating and enabling normative ‘planetary futures.’ The strength of this approach is its breadth of scope, which may enable the integration of different methods as appropriate to different contexts (Gidley, 2010c; Hampson, 2010). However, too much breadth may also be perceived as a weakness in that it may sometimes lead to a lack of depth. There is also an ideological trap, which can lead to contested claims about integrality of approaches (See two special issues of Futures, Inayatullah, 2010; Slaughter, 2008a).

Being a transdisciplinary field, the insights and methods of futures studies can be applied within many fields and across multiple issues. However, its contributions are yet to be widely adopted in much academic discourse. At a time when the pace of change is accelerating, and environmental issues such as anthropogenic climate change are upon us, both the natural sciences and social sciences could benefit from a greater understanding of how to think about alternative futures using longer time frames. The ontological, epistemological and methodological contributions of futures studies have been overlooked, resulting in too much research mirroring the short-termism of share markets and electoral-cycle-driven government policy-making. Futures studies as a field is not without its drawbacks. Unfortunately its reputation as a serious academic field has been tainted by the uptake and over-use of well-known futures methods such as scenarios in a non-scientific and uncritical manner by consultants, market researchers and journalists. Futures researchers often focus on very complex themes and, consequently, not all relationships can be fully teased out and conclusions have to be recognized.
as reflecting a degree of uncertainty. These issues are addressed in discussions of validity and trustworthiness in the futures studies literature. Taking these issues into account, policy and planning initiatives based upon futures approaches do need to be implemented within cautionary frameworks.

Table 2: A Typology of Positivist and Post-positivist Futures Approaches (Sources: Gidley, 2009; Gidley, Bateman, & Smith, 2004; Inayatullah, 1990; Slaughter, 2008b)

<table>
<thead>
<tr>
<th>Futures Studies Approaches</th>
<th>Key Terms</th>
<th>Underlying Theories and/or Paradigms</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positivist Approach to “the Future”</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictive/ Empirical</td>
<td>‘probable future’</td>
<td>Positivism Empiricism</td>
<td>Trend Analysis Prediction/Control</td>
</tr>
<tr>
<td><strong>Plurality of Post-positivist Approaches to “Multiple Futures”</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical/ Postmodern</td>
<td>‘preferred futures’</td>
<td>Critical Theory Deconstruction</td>
<td>Normativity Emancipation</td>
</tr>
<tr>
<td>Cultural/ Interpretive</td>
<td>‘possible or alternative futures’</td>
<td>Constructivism Hermeneutics</td>
<td>Alternatives “Other” futures</td>
</tr>
<tr>
<td>Prospective/ Participatory</td>
<td>‘prospective or participatory futures’</td>
<td>Action Research Hope Theories</td>
<td>Empowerment Transformation</td>
</tr>
<tr>
<td>Integrative/ Holistic</td>
<td>‘planetary or integral futures’</td>
<td>Integral Theories Planetisation Theories</td>
<td>Global Justice Planetary Era</td>
</tr>
</tbody>
</table>

Futures studies makes a significant contribution to global knowledge futures in that it stretches the boundaries of time and its modernist conceptualization. It applies a futures lens to a number of discourses that do not appear to have a conscious sense of the temporal dimension in which they operate. While many disciplines and fields have a sense of the past, very few appear to have a sense of their potential futures. Ironically, even within the evolution discourse, which is clearly embedded in the time dimension, there appears to be little regard for the decades of academic research that has been undertaken in the futures studies field. By introducing futures perspectives into the boundary-crossing discourses, I take both a macrohistorical time perspective and also make explicit the significance of future time sense as a balance to the over-valuing of the past. All forms of development, growth and progress are embedded in the time dimension and thus need to take into account the future time dimension as well as the past.

By applying futures thinking to the three meta-theoretical approaches that I am highlighting—postformal reasoning, integral consciousness and planetary awareness—I am crossing the boundary that ties us and limits us to what we already know in the present.
Since postformal reasoning refers to the developmental stage after the establishment of formal operational thinking, it can be conceptually situated in the temporal dimension as a psychological stage that points to the future of human development.

The notion of integral consciousness is closely tied to postformal reasoning as it refers in much of the integral studies literature to a stage/structure or movement of consciousness beyond formal thinking and is reflected in both cultural evolution and individual psychological development.

The rise of planetary awareness can also be situated in the temporal dimension most frequently associated with the 15th century where the European journeys of discovery enabled a broader communication between the peoples of all continents.

If one takes a big picture macrohistorical view of time, it may be that these new ways of thinking are only in their early stages of development.

The significance of stretching our concept of time through futures studies is of great potential value to education and many other disciplines and fields, such as the sciences, philosophy, and the arts in relation to considerations of the evolution of these disciplines. Even a cursory glance at possible futures in the context of the rapid emergence of more integral and transdisciplinary approaches, suggests that disciplinary knowledge itself may soon become “history.”

Paradoxically, these temporal conceptualizations rely on the three-part model of time—past, present and future. Elsewhere I have made a philosophical contribution to the reconceptualizing of this default modernist notion of linear time on which western culture depends (Gidley, 2007b, appendix 1). Several other ways of conceptualizing time need to be considered, pointing again to the complexity and paradoxical nature of time.

In summary my boundary-crossing contribution to the futures studies field includes:

- Offering a further development of earlier typologies of approaches with the field, with particular emphasis on the bifurcation between positivist and post-positivist approaches;
- Taking a futures lens to the other meta-theoretical approaches that are the focus of the paper, in particular to the postformal studies field.

The implications of my contribution include the realization that futures studies is not immune to other epistemological developments, nor is it necessarily leading the way. For further discussion of this issue, see Gidley (in press).

Reflections and Proflections

This paper takes the dominant discourse on the information era with its focus on the new global knowledge economy and turns it on its head. Unpacking the economistic and reductive notions of knowledge that flood the literature, and the homogenization inferred in many uses of the term global, the innovative concept of global knowledge futures broadens the discourse on knowledge futures in many fruitful directions. The paper discusses the state of play in several leading-edge discourses: postformal studies, integral studies, global/planetary studies and
futures studies. It also offers new boundary-crossing theoretical contributions to them all, gently nudging them ever closer towards a greater coherence—both within and across these fields.

Divergences and convergences are identified in the process of the analysis and synthesis. While the psychological literature on postformal thinking primarily focuses on identifying the features of higher stages of reasoning, and the integral theories primarily focus on inclusiveness of conceptual breadth, and/or inclusiveness of different aspects of the human being, the planetary consciousness literature tends to emphasize the urgency of our planetary crisis and the importance of a plurality of perspectives.

My philosophical interest in this paper is in thinking these threads together as facets of our emerging consciousness that reflect the dynamic diversity that can be in dialogue with unity. As Plato said: “Thinking begins when conflicting perceptions arise” (Plato’s Republic, VII, 523, cited in McDermott, 2005, p. 8).

By working at the creative margins of these boundary-crossing fields, and seeking out and identifying the territory beyond them where they begin to touch each other, I am initiating the development of a new meta-level field of studies: global knowledge futures.

References


Gidley, J. M. (2012b) Re-imagining the role and function of higher education for alternative futures through embracing global knowledge futures. In P. Scott, A. Curaj, L. Vlăsceanu & L. Wilson (Eds.), European higher education at the crossroads: Between the Bologna process and national reforms (pp. 1019-1037). Dordrecht: Springer.


Towards an Integral\textsuperscript{1} Meta-Studies: Describing and Transcending Boundaries in the Development of Big Picture Science

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Abstract: We are entering a period in human civilisation when we will either act globally to establish a sustainable and sustaining network of world societies or be enmired, for the foreseeable future, in a regressive cycle of ever-deepening global crises. We will need to develop global forms of big picture science that possess institutionalised capacities for carrying out meta-level research and practice. It will be global in that such research cannot be undertaken in isolation from practical global concerns and global social movements. In this paper I propose a general schema, called integral meta-studies, that describes some of the characteristics of this meta-level science. Integral here refers to the long tradition of scientific and philosophic endeavours to develop integrative models and methods. Given the disastrous outcomes of some of the totalising theories of the nineteenth century, the subsequent focus on ideas of the middle-range is entirely understandable. But middle-range theory will not resolve global problems. A more reflexive and wider conceptual vision is required. Global problems of the scale that we currently face require a response that can navigate through theoretical pluralism and not be swallowed up by it. In saying that, twenty-first-century metatheories will need to be different from the monistic, grand theories of the past. They will have to be integrative rather than totalising, pluralistic rather than monistic, based on science and not only on philosophy, methodical rather than idiosyncratic, find inspiration in theories, methods and interpretive frameworks from the edge more than from the centre and provide means for inventing new ways of understanding as much as new technologies. Integrative meta-studies describes an open system, inquiry space or clearing that has a place for many forms of scientific inquiry and their respective theories, methods, techniques of analysis and interpretive frameworks.

Keywords: Global crises, meta-data-analysis, meta-hermeneutics, metamethod, meta-studies metatheory, middle-range theory.

\textsuperscript{1} The word “integral” is used here to refer to the long tradition of integrative big pictures as exemplified in the work of such figures as Thomas Aquinas, Georg Hegel, Michil Bakunin, Vladimir Solovyov, Pitirim Sorokin, Rudolph Steiner, Jean Gebser, Aurobindo Ghose, Jacques Maritain, Bill Torbert, Ken Wilber, Ervin László, Fred Dallmyr, Ronnie Lessem and Alexander Schieffer.

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Introduction

We are entering a period in human civilisation when we will either act globally to establish a sustainable and sustaining network of world societies or be enmired, for the foreseeable future, in a regressive cycle of ever-deepening global crises. If we are to take the former pathway then we must, as a matter of some urgency, develop and institutionalise integrative and meta-level forms of scientific sense-making. This meta-level form of sense making will complement existing disciplines to establish a multi-layered understanding of science that will have the capacity to take a reflexive perspective on current scientific and philosophical theory building and testing. We will need to develop global forms of big picture science that possess institutionalised capacities for carrying out meta-level research. It will be global in that such research cannot be undertaken in isolation from practical global concerns and global social movements. In this paper I propose a general schema, called integral meta-studies, that describes some of the characteristics of this meta-level science. Integral here refers to the long tradition of scientific and philosophic endeavours to develop integrative models and methods. There are many precursors and formative examples that I draw on in developing the integral meta-studies framework and what I want to do here is present something an overview that can help to situate meta-level scientific and philosophical studies within the current landscape of knowledge quests.

Integrative metatheorising is an ambitious project. It is based on the premise that the critical appreciation and integration of diverse theoretical and methodological perspectives offers a new way forward in the development of science. It seeks to find insights through the connection of knowledge rather than the specialisation of knowledge. It takes an appreciative rather than a depreciative view towards systems of knowledge, irrespective of their place within the mainstream or the periphery. The big pictures that emerge from this process stand in contrast to the goals of mainstream social science which are almost exclusively concerned with the building and testing of middle-range theory.

Given the disastrous outcomes of some of the totalising theories of the nineteenth century, the subsequent focus on ideas of the middle-range is entirely understandable. But middle-range theory will not resolve global problems. A more reflexive and wider conceptual vision is required. Global problems of the scale that we currently face require a response that can navigate through theoretical pluralism and not be swallowed up by it. In saying that, twenty-first-century metatheories will need to be different from the monistic, grand theories of the past. They will have to be integrative rather than totalising, pluralistic rather than monistic, based on science and not only on philosophy, methodical rather than idiosyncratic, find inspiration in theories, methods and interpretive frameworks from the edge more than from the centre and provide means for inventing new ways of understanding as much as new technologies. Integrative meta-studies describes an open system of knowledge acquisition that has a place for many forms of scientific inquiry and their respective theories, methods, techniques of analysis and interpretive frameworks. We have, in fact, been developing these meta-level capacities and models for a very long time and the time is now ripe for a more overt description and institutionalisation of these perspectives and practices.
The Challenge of Pluralism

The great proliferation in empirical studies that occurred through the 1970s and 1980s brought with it the rise of meta-data-analysis. The sheer outpouring of empirical information, particularly in the health and medical sciences, required a scientific response that could somehow make sense and form some overarching big picture of the mass of data pouring out of journals and scientific laboratories. Gene Glass was one of the pioneers of these early approaches to the integration of empirical findings and he proposed the term meta-analysis to describe the “analysis of a large collection of analysis results from individual studies for the purposes of integrating the findings” (Glass, 1976, p. 3). Glass described the emergence of meta-analysis as follows (1977, pp. 351–352):

By the late 1960s, the research literature had swollen to gigantic proportions. Although scholars continued to integrate studies narratively, it was becoming clear that chronologically arranged verbal descriptions of research failed to portray the accumulated knowledge. Reviewers began to make crude classifications and measurements of the conditions and results of studies. Typically, studies were classified in contingency tables by type and by whether outcomes reached statistical significance. Integrating the research literature of the 1970s demands more sophisticated techniques of measurement and statistical analysis. The accumulated findings of dozens or even hundreds of studies should be regarded as complex data points, no more comprehensible without the full use of statistical analysis than hundreds of data points in a single study could be so casually understood. Contemporary research reviewing ought to be undertaken in a style more technical and statistical than narrative and rhetorical. Toward this end, I have suggested a name to make the needed approach distinctive; I referred to this approach as the meta-analysis of research.

Precisely this situation exists today, for not only research data but, for the multitudinous varieties of theory, methods and interpretive systems that are employed to make scientific sense of the complex worlds we inhabit today. And we need corresponding meta-level schools of scientific research in each of these realms. Indeed, we can see many different forms of these meta-level studies emerging today across all kinds of scholarly outputs. On the theory side we see the emergence of meta-level theoretical frameworks, multiparadigm studies and overarching conceptual models in many social sciences. In the study of scientific research methods we see the development of meta-methods and the associated approaches of mixed and multi-methodologies and with the variety of new epistemological orientations we see the rise of meta-level and general hermeneutics. Together, these overarching forms of analysis constitute a meta-level science and they formalise a way of developing knowledge that has been part of the human story of meaning-making for a very long time. What makes these meta-level disciplines different is that now we can build and test these big pictures from a scientific perspective.

These meta-level studies form a new layer of global research in that they emerge out of the pluralism of diverse views of reality that are present across different cultures, different political and geographical regions different social histories. Where modernistic forms integrative science have attempted to develop unified grand theories and the single big Theory of Everything, the new integrative meta-level approach recognises the postmodern turns towards interpretive,
methodological and theoretical diversity. The goal then is not for a unified grand monism but an open space for pursuing scientific big picture inquiry in which multiple perspectives can be appreciatively and critically considered. Hence, this new meta-level inquiry offers a scientific response to one of the central questions of the 21st century - how are we to develop global conversations around, what Raiman Panikkar call, “the pluralisms of truth” (Panikkar, 1990, p. 16).

... truth is pluralistic because reality itself is pluralistic, not being an objectifiable entity.
We subjects are also part of it. We are not only spectators of the Real, we are also co-actors and even co-authors of it. This is precisely our human dignity.

During the twentieth-century we saw a procession of big pictures come and go with some useful insights and advances but also with often disastrous results. In the domains of politics, economics, education, commerce and trade and organisation and management we have seen a litany of big scientific ideas come and then drift off into marginality. While each of them had their partial truths and valid points, overall, when championed as complete and universal schemes of salvation, big pictures have not had a good track record. From Marxism to monetarism, from rational choice theory to marketism, from globalism to the promises of hyper-technologies - all of these big pictures have their respective insights and have resulted in great advances in understanding but they have also resulted in ideologies of various kinds that are fundamentally degrading the environmental, social, economic and intellectual resources of the planet. The human predilection for creating big pictures will continue and will grow even more as we enter further into the age globalisation. Given this, how can we develop and validate our metatheories via a more conscious form of doing science? How can we build a deep science which is integrative, pluralistic, reflexive, and appreciative of contending views rather than specialist, monistic, objectifying and aimed at finding the one true theory or method? Before looking at this I should first discuss a little more about what I mean by science and social science. I argue that meta-studies, or big picture science, will play an important role in the development of planetary culture in the coming decades and so it might be useful to describe in further detail how I view scientific activity and its role in contemporary society.

Science and its Role in Emergent Global Communities

Science is essentially a systematic quest for knowledge and social science is the application of that systematic study to the domain of human experience and behaviour in all its many forms. The development of what we think of as contemporary science has been a global affair. The threads of cultural and technical knowledge and activity that weave together to create science come from many and diverse sources. These include the philosophies of the ancient Greeks, the insights of Islamic scholars, the mysticism of the hermeticists and the alchemists, the genius of individual insights, the technical expertise of artisans and instrument makers, and the natural knowledge of tribal peoples and people of the land. Although we often associate the

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3 I have focused here on some elements of the Western story of big picture building and there are of course similar parallels in non-European cultures. More importantly, the history of the development of big pictures has always been a multi-cultural one and there has been a constant process of cross-fertilisation between cultural, philosophical and spiritual traditions throughout the millennia.
development of science with great figures such as Nicolaus Copernicus, Charles Darwin, Albert Einstein, and Marie Curie, the truly astonishing thing about science is that its basic motivation lies within the human instinct for learning and for understanding.

Science shares with learning the need to explore the new, the desire for development, the drive to find ways of understanding and explaining that solve problems and create new opportunities. As with learning, science is a composite phenomenon. It requires several different involvements to be performed. It requires action as well as thought; it needs to be formally engaged with at the individual as well as the collective level, it demands systematic thoroughness as well as creative insight and it needs to be taken up with dedicated enthusiasm as well as with detached reflexivity. Learning occurs best when we engage with body and soul in the activity of interest and, similarly, science needs to be taken up as a practice as well as a discipline of study.

We can conceive of learning as consisting primarily of the processes of active physical engagement, reflective experience and analysis, cultural meaning-making and social communication. These four involvements are necessary for any learning to occur. Accordingly, science can also be seen as having these four involvements. The engagement of physical activity corresponds with method, that of reflective experience corresponds with the scientist’s encounter with data, meaning making is equivalent to interpretive frameworks that scientists adopt to make sense of data and finally, the involvement of communication corresponds to the scientific activity of public communication and the social validation of theory. Each of these aspects of science - method, data, interpretation and theory - are formal requirements for the publication of any scientific paper and, as elements in the definition of science, they remain the bedrock for any systematic explication of scientific research.

The view adopted in this paper is that these four involvements are fundamental to understanding what science is and how it should be practiced. They also present a model for seeing how science can be a more integrative knowledge quest than has often been the case. Methods, data, interpretation and validation are the four arcs that need to be connected in creating a comprehensive cycle for pursuing scientific knowledge. Where any one or more of these arcs is missing or significantly undervalued, the science it produces will have serious blindspots and shortcomings. Science has been rightly criticised as a tool in service of dominant social authorities or as the narrow pursuit for empirical fact or objective knowledge or mechanistic laws. For example, the “interpretive turn” of the 1970s saw science was not taking up the interpretive and reflexive arc of its activities with as much enthusiasm as it might. Critical theorists, philosophers of science and hermeneutics, educators and social activists challenged scientists to question their own assumptions, to look into the meaning-making systems that they often blindly and unconsciously used to make sense of their work. The result has been a reformation in some scientific communities towards a more socially aware and critical form of knowledge quest. In other communities the old reductionisms and partialities continue.

An integral meta-studies regards these involvements as necessary branches for any scientific endeavour and the clearing opened up by this meta-level perspective will formally include at least these four branches of activity. There have been a number of weakness that meta-level studies have suffered from that can be addressed through applying this model of four scientific involvements to its operational structure. First, in the past metatheory has often lacked a strong
methodological base and has subsequently been neglected as a formal scientific activity. Second, it has also been unclear about its data base, and about the nature and role that data plays in building and testing metatheory. Finally, metatheorists typically have not consciously pursued research as a meta-level activity. They regard their work as large and integrative in scope but, because of confusion of the role and nature of their data (i.e. that its comes from middle-range theory), they have not identified their work as metatheoretical or reflexively critiqued their ideas as such. This is evidenced in the practice of metatheorist to use the term “theory” to label their work, for example as in Wilber’s integral theory or von Bertalanffy’s general systems theory.

On the basis of these considerations, an integral meta-studies as it might be adopted within the social sciences can be described as a knowledge quest that: i) employs rigorous meta-level building and testing methods to, ii) collect middle-range data from subjective, relational and objective sources, and which iii) develops meaning from this data through the conscious adoption of adequate and relevant interpretive frameworks so that, iv) it can communicate its findings through the articulation of meta-level theories, methods, interpretive frames and data-analytical studies. The fractal nature of these structures is evidence in that each of the branches of meta-studies requires the four involvements of method, data, interpretation and theory. These four involvements of the scientific process largely amount to a means for increasing our active and conscious quest for valid and reliable knowledge and for seeing how that knowledge can be utilised towards the inter-generational development of more healthy and more sustaining global communities. As such, meta-level science studies will play an increasingly important role on the global stage and provide crucial resources for addressing the immense planetary crises that we are facing now and will continue to face in the coming decades.

The Allure of the Big Picture

Big pictures are nothing new in science or, indeed, in any tradition of cultural knowledge including philosophy, religion and literature. Big scientific theories and meta-theories are an expression of the human attraction towards tall stories, the epic tale and the drama of storytelling. We are enthralled, mesmerized and attracted to really big stories because they create a means for connecting the past and the future to the hopes and fears of the present. Storytelling allows us to explore the quest to explain and understand what it means to be human and to share that humanity with others. Our physiology, our anatomy and genetic makeup predispose us towards forms of creativity that find patterns in the world around us and that express those patterns in our communications. The narrative impulse lies deep within the human heart and the scientific goal of developing big pictures has its genesis in the sagas, myths, legends, the dreamtime stories, the creation stories, the epics and the heroic tales from which all human cultures have emerged.

The thing about story is that it is abstract. The story is not the event itself and yet stories shape realities as much as they reflect them. We tell a story about a boy who is lost in the forest because he does not follow the beaten path and next time we venture into the forest we make sure we stay on the well-known way. The story - a complete abstraction - feeds into shaping reality. Theories are also abstractions and yet they also shape the bricks and mortar of the real world. Theories of management and organization are used to create factories and management systems that form and direct what is built, how it is built and the social structures and behaviours
that inhabit those spaces. In this sense, stories and theories are as real as any technology. The abstract world or theory and metatheory are as causative in the creation of social realities as money, the weather, gravity, political power or the level of unemployment. Our stories guide us and they inform the visions and actions through which we shape our futures. Big stories and big pictures have a very real, very concrete impact on the physical, emotional, mental and spiritual realities that we inhabit and they are central to the creation our shared futures.

In the age of globalisation, the guiding stories and big pictures that we share (as one humanity) will be central to the path that we take in creating a sustainable and healthy world. And in sharing those stories, we will also be creating a mediating vision and a way of communicating that will connect and bring together the diversity of cultural views, meaning systems, personal insights and traditional wisdoms that we have inherited. The opportunity here is immense and in this unprecedented coming together of forms of cultural experience there is the real possibility of global transformation towards a deeper understanding of who we are and how we might live on this unique and wondrous planet.

The dangers here are also evident. The big pictures that emerge from the current wave of globalisation can also be harmfully reductive, they can also limit our potential, they can distort the natural balances that have taken billions of years to emerge, and they can reproduce false, partial and dehumanising visions in our individual and collective identities on a global scale. Roy Bhaskar (Bhaskar, 2002a) has talked of the damaging domination of such ideologies and the demi-reality of imbedded social ills that result from them. Bhaskar also stresses this capacity of social science and particularly of metatheoretical science to adjudicate on the half-truths and false forms of knowing and acting that emerge from this “demi-reality” of entrenched ideologies. Bhaskar says that (2002a, p. 55):

The task of social science is to penetrate that demi-reality through to the underlying reality and situate the conditions of possibility of the removal of illusion, of systematically false being. (emphasis in the original)

One means for the removal of systematically false being and doing is through critical reflection upon our underlying big pictures. And if the social sciences have any core task to fulfill in 21st century it is this task of developing critical metatheories and overarching systems of ideas that can comment on the partialities of predominating views.

Big Thinkers and their Big Pictures

I have said previously that big pictures are nothing new to science. Philosophy, of course, has always had its big picture thinkers. Plato developed his big pictures as an attempt to integrate the many different perspectives that people can take towards life. He explored the general principles from which we could use rationality to understand and explain our experiences. Plato took a universalising approach to building big pictures. Aristotle, on the other hand, developed big pictures that focused on the details of what he observed in nature. His was a particularising approach to the construction of knowledge. With the emergence of the proto-scientific worldview in 13th century Europe we also find that big picture thinking was of crucial importance. In the mediaeval period, the attempt to build unified accounts of the natural and the
supernatural - the world of reason and the world of faith - was a definitive aspect of the Scholastic enterprise. By the time we get to the late mediaeval period there is literally an explosion of synthesising activities that draw connections between, for example, the Greek philosophers, the hermetic traditions, astrology, the various theological disciplines and contemplative writings (Gaukroger, 2007).

The Franciscan monk Roger Bacon (c. 1214–1294) is an eminent exemplar of this kind of overarching and synthesising big picture building activity. But Bacon was also more than this. He was one of the first to deliberately and consciously seek out a way of connecting ideas about the natural world in an overarching framework that was also grounded on physical evidence. Bacon was a polymath of great genius and his major work contains “treatments of the positions and sizes of the celestial bodies, and anticipates later inventions such as microscopes, telescopes, spectacles, flying machines, hydraulics and steam ships” (Wikipedia, 29 June 2009). Bacon was also an empiricist in that he held that rationality alone could not confirm the truth of an argument. He said that “Reasoning draws a conclusion, but does not make the conclusion certain, unless the mind discovers it by the path of experience”. Yet he also attempted to develop a “universal science” and as James Blish contends, he was the first to develop “a theory of theory” (Blish, 1982).

The instinct for developing big pictures has an ancient heritage and this tradition leads all the way down from the unknown storytellers of distant times through the Greek philosophers, the scholastics and the synthesisers of the Renaissance to Leibniz, Goethe, Hegel, Marx, Parsons, down to the present big picture thinkers like George Ritzer, Ken Wilber and Roy Bhaskar. This is not to say that the form and substance of these big pictures has not changed. There have been many varieties of big pictures in the arts and literature, in religion and spirituality, in political visions and in philosophy. But now, as we enter a period of intense globalisation the need for a particularly scientific approach to building big pictures is becoming more urgent and the development of truly meta-level forms for doing science will be a central aspect for scientific framework in the 21st century. It is to this question of a specifically scientific approach to big picture metatheorising that this course is addressed.

The Science of Metatheorising

Metatheorising is the attempt to ground big picture models on extant scientific theory. It is not a philosophical process of working from first principles. Rather, it is a scientifically grounded activity of developing overarching views from the integration of other respected sources of valid cultural knowledge and verified streams of scientific research. Metatheory is essentially the study of other theory and its uses middle-range theory as its source of data. As the great metatheorist of sociology, George Ritzer, says, “A metatheory is a broad perspective that overarches two, or more, theories” (Ritzer, 2006b, n.p.).

From this perspective Ken Wilber's AQAL metatheory is not so much a philosophy but a metatheory. Wilber does not work from first principles to derive a philosophical framework for considering the basic questions of existence. He does not start with questions such as: What is an

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4 See Footnote 3
object? What does it mean to see colour? Is there a God? How do we know things? Rather, from the very beginning, Wilber's approach has been to consider the range of extant theories, philosophies and cultural viewpoints and, through finding connections between these existing perspectives, build a meta-theoretical framework that situates extant approaches within a much larger and more integrative conceptual system. This is a metatheoretical approach and not a philosophical one. Wilber has been at considerable pains to highlight the fact that his understanding of, for example, human development is not a philosophical approach but is based on empirical findings from many different psychological theories of human growth.

Locating AQAL metatheory within the tradition of scientific big picture building has many advantages. First, it accords us with the possibility of seeing how AQAL is not an isolated example of philosophising by an individual thinker but is an example of a tradition of metatheorising that has been an essential part of social science research. Second, it enables us to be self-critical and to develop a means for evaluating metatheory in general, and AQAL metatheory in particular, according to evidence-based arguments. Third, in situating AQAL within a scientific tradition we can begin to describe scientific methods for performing the type of big picture and metatheoretical research that AQAL belongs to.

Types of Meta-Level Research

Metatheorising can be done within or across any set(s) of disciplines. In this sense it is independent of the scale of the research domain. Integrative metatheorising can be performed across the variety of intra-, multi-, cross-, inter-, trans-, and post-disciplinary projects. Each of these is attempt to respond to the issue of complexity and pluralism of theories, methods and forms of analysis that all researchers face (see Figure 1).

Some metatheorists focus their attention within a relatively limited domain, as in, for example Terence Love’s metatheorising on design theory (Love, 2000), while others attempt to build overarching systems across a large range of disciplines, as we see for example, in Wilber’s AQAL. Whatever the scope may be, there are four basic aims for carrying out metatheoretical research (Colomy, 1991; Ritzer, 2006b) and they are:

- Interdisciplinary: the combining of disciplinary discourses
- Cross-disciplinary: a research task that requires a combination of disciplinary discourses
- Multidisciplinary: The co-operative use of many disciplinary discourses
- Trans-disciplinary: the translation of one discourse into another
- Post-disciplinary: the leaving behind of disciplinary distinctions
- Meta-disciplinary: a discipline of disciplinary discourses

Figure 1: Responses to Theoretical Pluralism

Some metatheorists focus their attention within a relatively limited domain, as in, for example Terence Love’s metatheorising on design theory (Love, 2000), while others attempt to build overarching systems across a large range of disciplines, as we see for example, in Wilber’s AQAL. Whatever the scope may be, there are four basic aims for carrying out metatheoretical research (Colomy, 1991; Ritzer, 2006b) and they are:
1. Metatheorising for understanding (M_U). Here extant theories are reviewed to gain a familiarity and understanding of their core characteristics and those of the research programmes, paradigms and disciplinary contexts in which they might be located.

2. Metatheorising for preparing new middle-range theory (M_P): The purpose of M_P is to review and analyse theories so that a new theory can be developed within that domain (Turner, 1990). Most metatheorising falls within this type. In fact, most research begins with metatheorising of this kind in that the current landscape of theoretical perspectives is introduced that summarise to identify opportunities from new conceptual contributions.

3. Metatheorising to build overarching theory (M_O). M_O is metatheory building. Its aim is to review and analyse extant theory in some domain and to build a metatheoretical system that accommodates and integrates those theories (see, for example, Witherington, 2007). Hence, M_O always involves M_U.

4. Metatheorising for adjudication (M_A). M_A develops or uses M_O for evaluating other theories in a particular field. The capacity to assess and critically analyse other theory is a quality that all metatheoretical frameworks possess (see, for example, Abrams & Hogg, 2004).

These varieties of metatheorising are most prominent in fields and in branches of science where there are many contending theories and research paradigms. Consequently, because they are highly contested fields with diverse theoretical and paradigmatic positions, it is probably true that metatheoretical research would contribute significantly to the development of any of the social sciences. The difficulty with this situation is that this immense diversity and contention creates fragmentation and the narrowing of research interests, the constriction of conceptual viewpoints and a reluctance to step outside of one's own paradigmatic boundaries. As Lewis and Kelemen explain (2002, p. 253)

... researchers have produced an explosion of varied, often contentious approaches. Modern and postmodern stances, for example, offer contrasting positions in the paradigm debate. ... Such theoretical diversity may enrich understandings of pluralism and paradox. Yet polarisation of modern paradigms and ruptures between modern and postmodern stances inhibit researchers from tapping this potential.

And so the great potential for metatheoretical studies to create new vision is for science has been vastly underutilised. Consequently, metatheoretical studies has a collaborative and formalised approach within the mainstream of scientific research has not been developed anywhere near the extent that it might be.

**The Neglect of Method**

The neglect of method is perhaps the most obvious limitation that currently besets metatheoretical research. Traditionally, metatheorising has been performed by individuals with little more than their intellectual passion to guide their sifting and analysing of theories. Although, as Ritzer (1991), Skinner (1985) and others have pointed out, metatheorising is an extremely common preliminary activity in research, it has never been formally recognised as such. Metatheorising is still large done surreptitiously or seen as the poor cousin to the real scientific task of theory testing. One reason for this devaluing of metatheoretical research has
been the lack of formal research methods for carrying out meta-level research. But this situation is changing. As scholars are exposed to the immense diversity of conceptual orientations and cultural perspectives emanating from all corners of the globe, it is increasingly important that overarching theorising is grounded on firm methodological bases. Now, more than ever, metatheoretical study needs to adopt systematic methods, relevant and sensitive research designs and rigorous forms of analysis.

I have written in some detail on the weaknesses of the methodological approach used by Ken Wilber and the great majority of other metatheorists in the development of their overarching frameworks (Edwards, 2008a, 2008b). Briefly, Wilber and many other metatheorists rely on traditional scholarship methods of essentially reading a broad, but ideosyncratic, selection of writings and research and then making of it what they will according to their own assumptions and predilections. This traditional approach is not adequate if metathetical research is to be taken seriously as a form of social science research. Metatheorising can and should be done as a rigorous and methodical research activity and that AQAL metatheory needs to participate in this process if it is to be truly grounded in the scientific tradition. Until that time, AQAL metatheory will remain the visionary creation of one thinker and corroborating evidence for its framework of quadrants, levels, lines, types and states will remain anecdotal at best. This is, perhaps, the most forceful reason for the lack of acceptance for metatheorising, and particularly for AQAL metatheory, across mainstream higher education institutions and their constitutive disciplines.

Where metatheorising has been performed under standard research conditions, the result has been more favourable. Bill Torbert's research and his description of the Developmental Action Inquiry (DAI) metatheory has met with considerable attention and recognition within the domain of organisational and leadership studies (Rooke & Torbert, 1998; Torbert & associates, 2004). One of the unique aspects of Torbert’s research is that it has included metatheoretical, theoretical and empirical domains of activity. And uniquely, at least within the domain of organisational research, his metatheory has been developed from the ground up. Still, much of Torbert’s work in the meta-level domain has lacked a methodical approach to building metatheory. There have however, been some isolated and sporadic attempts to develop such a method in the work of Marianne Lewis and her colleagues is noteworthy in this regard. Researching within the multiparadigm theory building approach of Gibson Burrell and Gareth Morgan (Burrell & Morgan, 1979), Lewis has developed metatriangulation method for metatheory building and this will also be a topic of discussion in later weeks. This tradition of multiparadigm research within organisational studies is a particularly important example of how metatheorising can contribute to a field and the contributions of this stream of metatheoretical research is only just starting to be tapped.

An Integral Metastudies

So far I have only been referring to metatheory, so where does metastudies come into all this. Obviously, the building of theory constitutes only one part of a much larger process involved in the creation of scientific knowledge. There are at least four major strands to the development of any form of learning and knowledge acquisition and these are method, data, interpretation and validation. Theory building comes mostly under the social validation of scientific propositions and models. Consequently, there is the possibility, not only of metatheorising, but also of meta-
methodology, meta-data-analysis and meta-interpretive studies (or meta-hermeneutics as it will be called here). Each of metastudies can involve an integrally-informed approach to understanding our world and how we might live in and care for it.

These forms of metastudies are specifically called “integral” for several reasons. First, they follow in the tradition of big pictures thinkers who have specifically used the term integral to refer to their particular systematising approach. There are several streams of scientific and philosophical metatheorising that come under this rubric and they stretch back some hundreds of years into 18th and 19th centuries. Multiparadigm studies (Lewis & Kelemen, 2002), various streams of integral research (Jeffries, 2005) and transdisciplinary studies (Fine, 2007) are few of these lines of meta-level research. Second, integral metastudies is singled out by its capacity to move between small and large-scale domains. An integral approach moves within and between disciplines and attempts to discover connecting patterns at multiple scales of research from the very specific to the very general. In doing this however, an integral metastudies still retains some concept of a specific domain in which it has validity and applicability. Third, this form of metastudies is integral because it relies on other integrative metatheories such as the AQAL and DAI frameworks and uses them as metatheoretical resources in its research.

Formal science is predominantly associated with the empirical testing of ideas more than with their initial construction or inspiration. The vast majority of scientific research is about rearranging existing theory to develop a conceptual model for generating hypotheses that are then empirically tested. Relatively little programmatic research goes into theory building. Testing a theory involves a complex mixture of design, method, data collection, analysis and interpretation. Theory, method, data and interpretation are the four walls within which we review the details of scientific evidence. In the same vein, to develop overarching forms of scientific investigation, we need to critically review theory to build metatheory, review methods to develop meta-methods, review data to perform meta-data-analysis and review interpretive systems to create meta-hermeneutic models. While meta-data-analysis has been developing quickly within the medical and health sciences since the 1970’s, each of the other meta-level branches of study is in very early stages of development and the process of bringing them together to describe a system of meta-studies is only just beginning to emerge.

Drawing on some formative descriptions of disciplinary based meta-studies, in the following pages I sketch out the possibility of an integrative meta-studies that could have application across many forms of social science. From the discipline of sociology Shanyang Zhao describes a general structure of meta-studies as a second-order form of research that “transcends or goes beyond” other forms of study (1991, p. 378). Zhao’s general meta-studies includes “metatheory”, “meta-methodology” and “meta-data-analysis”. From the field of qualitative health research Barbara Patterson and her colleagues describe a meta-studies that entails the analysis and “scrutiny of the theory, method, and data of research in a substantive area” (Paterson, Thorne, Canam, & Jillings, 2001, p. 5-6). Discussions of meta-hermeneutics (Colby, 1987; Habermas, 1983), meta-methodology (Chandler & Torbert, 2003; Karlsson & Wistrand, 2006) and the burgeoning field of meta-(data)-analysis (Glass, 1976) can also be included in the mix. From these and other meta-level analyses of the major families of social science research (Denzin & Lincoln, 2005; Esbjörn-Hargens, 2006; Mingers & Brocklesby, 1997), I believe it is possible to map out a structure for an integrative meta-studies in which metatheory, meta-method, meta-
data-analysis and meta-hermeneutics all play their part (Edwards, 2008b). We have then the possibility of recognising and developing not only integrative metatheories but also integrative forms of meta-methodology, meta-data-analysis and meta-hermeneutics. Together, these meta-level investigations constitute an integrative meta-studies – the science of integrating knowledge from the mutualising worlds of theory, method, data and interpretation (see Figure 10.1).

There are already innovative examples for several of these branches of integrative meta-studies. Wilber’s AQAL and Torbert’s DAI are examples of integrative metatheories. But these scholars have also produced perhaps the two most detailed examples of integrative meta-methodologies. Wilber’s Integrative Methodological Pluralism (IMP) provides a framework for describing eight irreducible categories of research methodologies (see Esbjörn-Hargens, 2006). Wilber proposes that all research methods can be located within these eight categories (Wilber, 2006). Torbert proposes a meta-methodology derived from three lenses - time, perspectival practice and perspectival voice. As with his metatheory, Torbert’s central goal in proposing his meta-methodology is not to categorise methods in an overarching framework but to inform and broaden a researcher’s immediate world of transformational inquiry. The focus is on mapping many methods into an action oriented process of discovery. Where Wilber seeks to formalise a meta-level, big picture that can situate other methods, Torbert wants to expand the practice of research inquiry itself. In many ways the two approaches complement each other.

There have also been integrative innovations in the meta-data-analysis area. Meta-synthesis is an integrative approach to meta-data-analysis that has been recently developed to collate findings from qualitative research studies in health (Sandelowski, 2006; Thorne, Jensen, Kearney, Noblit, & Sandelowski, 2004). All this suggests that meta-level studies are being pursued within isolated sub-fields and that there is an opportunity now to bring these meta-level inquiry systems into a more coherent overview. It is important to distinguish between forms of meta-studies that are distinctly integrative and those that are more localised in character. Research in any of these meta-studies activities becomes integrative when it: i) is consciously and explicitly performed within an appreciative context that can move across and within various disciplines, ii) adopts systematic research methods and principles, iii) uses, as conceptual resources, other integrative frameworks such as Wilber’s AQAL, Bhaskars’s meta-reality (Bhaskar, 2002b), Torbert’s DAI (1999), Schumacher’s system of knowledge (1977), Nicolescu’s transdisciplinary studies or Galtung and Inayatullah’s (1997) macrohistory, and iii) is characterised by its inclusiveness and emancipatory aims.

Figure 2 maps out a simplistic structure for an integrative meta-studies. Meta-level researchers can, of course, move across all of these branches of studies, but usually both individual researchers and their paradigm-based communities of inquiry tend to specialise in one or two domains. Metatheorists are very rarely meta-methodologists (Paul Meehl being a prominent exception to this, see for example, Meehl, 1992). Practitioners of meta-hermeneutics (including many postmodern interpretivists) are wary of entering the territory of metatheory (even though their meta-level discussion assumes the existence of such territories). There are also strong barriers between the meta-level and the middle-range level of research, for example between middle-range theorists and metatheorists.
An interesting feature of this map of scientific territories is that researchers from one domain often have limited understanding of the contributions from other domains. So when researchers make forays into foreign domains problems can arise, for example, their claims about the veracity or usefulness of those other branches of knowledge. We see this when theorists denounce metatheorists for being too abstract, or when meta-interpretivists (postmodernists) assure us that metatheory is impossible or always hegemonic, or when metatheorists make factual claims about the world of empirical data.

Metatheorising can also encroach on the territory of other branches. For example, metatheory building is based on the analysis of extant theory and does not deal directly with empirical data. Consequently, it cannot validly make conclusions about empirical data based on its metatheorising (that is the task of meta-data-analysis). If it does so, it is stepping outside its realm of expertise. To put this in another way, metatheory is primarily about other theory and not about the prediction or evaluation of first-order empirical data. As Ritzer (2006a) has pointed out, it is entirely possible and, in fact, desirable that middle-range theory be developed from metatheory (this is Ritzer’s $M_P$). But in doing that, the new middle-range theory will require empirical testing. Metatheory can be used to develop metaconjectures about empirical events but these will then need to be evaluated through middle-range theory testing or meta-data-analysis.

**Conclusion**

The “so what!” in all of this is that, in recognising the wonderful diversity of activities that contribute to the rich pluralism of contemporary social science, we also need to find patterns that connect that diversity. Finding metapatterns (Volk, 1995) needs to accompany other important tasks such as recognising the messiness of social science (Law, 2004), giving space to the individual voice (Gergen, 1998) and the power of specialisation and reductive methods. The science of big picture pattern finding needs to be based on scientific evidence and not only on the individual insights of isolated scholars or creative visionaries no matter how enthralling their visions may be. Creativity has many sources. The idiosyncratic revelations and understandings...
that have traditionally been associated with metatheorists and polymaths down through the ages are not enough to establish a truly integral meta-level science. Integral metastudies is my attempt to describe the rudimentary outlines of a formal scientific program that is specifically aimed at constructing and testing overarching visions of existence. In providing a meta-perspective on what scientists do, this new domain of integral metastudies will also provide opportunities for a more reflexive and systematic and critical approaches to developing big picture forms of social science.

References


The Transdisciplinary Moment(um)

Julie Thompson Klein

Abstract: There is no universal theory, methodology, or definition of transdisciplinarity (TD). Nevertheless, keywords reveal similarities and differences across explanations. This overview tracks five major clusters of meaning: (a) meta-level conceptions of interdisciplinarity, (b) the changing nature and status of unity in the discourse of TD, (c) new alignments with participatory and collaborative problem-oriented research, (d) the forms of knowledge that TD engages, and (e) a transgressive imperative that interrogates the existing structure of knowledge, culture, and education. These categories of meaning are not air-tight. However, with widening use of the core word “transdisciplinarity,” it is important to be alert to these patterns and their underlying values and priorities.

Keywords: Collaboration, complexity, integration, interdisciplinarity, participation, transcendent, transdisciplinarity, transformation, transgression, trans-sector, unity.

Introduction

This special issue of Integral Review appears at a time of heightened momentum for transdisciplinary approaches to research, education, and problem solving. In their introduction to another special issue focused on the concept, editors Roderick Lawrence and Carole Després (2004) called Transdisciplinarity a “word a la mode.” Understanding reasons for the current momentum is an appropriate task for this journal’s goal of exploring boundary crossing at the level of meta theories, methodologies, and practices. There is no universal theory or methodology of Transdisciplinarity (TD), nor should we expect a universal definition. The English word “definition” derives from a Latin word, definitio-em that refers to both an act of stating the meaning of a word and an act of setting bounds or limits of explanation (Oxford English Dictionary, 1971). Keyword clusters reveal similarities and differences across explanations. Distinctions in meaning, to echo philosopher Joseph Kockelmans’ (1979) explanation of differences in explanations of Interdisciplinarity, vary because they are shaped by differing philosophical outlooks, contexts of practice, and views of the socio-political function of science and the educational system. Yet, the clusters reveal patterns across what Christian Pohl (2010) calls a “structured plurality of definitions” of TD. They are not air-tight categories, but they do reveal important differences in how the concept is constructed.
From Disciplinarity to Interdisciplinarity

The term “transdisciplinarity” is dated conventionally to a typology of terms devised for the first international conference on interdisciplinary research and teaching in OECD-member countries. Understanding core distinctions in that typology is a necessary first step toward understanding the meanings of TD. The conference occurred in France in 1970, and the book based on the meeting became a seminal reference on the topic for decades to come. Interdisciplinarity (ID) was defined as interaction among disciplines that may range from simple communication of ideas to mutual integration of organizing concepts, methodology, procedures, epistemology, terminology, data, and the organization of research and education (Apostel, et al., 1972). Cluster #1 highlights some of the major traits associated with ID, key among them integration, synthesis of knowledge, interaction of disciplines, and holistic thinking. These traits counter segmentation and fragmentation of knowledge resulting from specialization and internalist approaches to theory and practice.

Keyword Cluster 1

• interdisciplinarity
  • integration, synthesis, interaction, holistic thinking
  • boundary crossing, boundary blurring, transcendence

The OECD definition of ID is quite wide, encompassing any form of interaction from simple borrowing of a method to a new paradigm for research and education. Some forms, though, foster meta-level approaches. In Margaret Boden’s (1999) definition of Generalizing ID, a single theoretical perspective is applied broadly to a wide range of disciplines, such as cybernetics or complexity theory. In Integrated ID, new conceptual categories and methodological unification emerge when the concepts and insights of one discipline contribute to the problems and theories of another, for example computational neuroscience and the philosophy of cognitive science. In the history of social sciences, macro social theory and the behavioral science movement have also aimed to create a new coherent whole. The concept of “behavior,” for instance, posited an alternative method of organizing social inquiry through a new theoretical coherence and convergence. Traditional categories anchoring the disciplines were questioned and lines between them began to blur. Comparably, the concepts of area, information, communication, and decision-making promoted new integrative conceptual categories with greater analytic power (Landau et al. 1962; for a fuller taxonomy of interdisciplinarity, see Klein 2010.)

Powerful as these examples are, however, Transdisciplinarity represents another level implied by the difference in prefixes. “Inter” is conventionally taken to exist between existing approaches, while “trans” moves beyond them. In the OECD typology, TD was defined as a common system of axioms that transcends the narrow scope of individual disciplines through an overarching synthesis, such as anthropology construed as a science of humans. The notion of transcending is linked historically with the concept of unity, although underlying assumptions have changed.
From Unity to Complexity

The English word “unity” derives from the Latin unus, meaning a fact or condition of being one in sameness or agreement (Oxford English Dictionary (II, 3516). Cluster #2 depicts a change in thinking about the thematic of unity.

Cluster #2

- complexity, uncertainty, diversity, non-linearity, multidimensionality, emergence
  - heterogeneity, hybridity, unifying approaches, relationality, coherence,
  - interplay, intersection, interdependence

The quest for unity spans Western intellectual history. Greek philosophers disagreed on whether one universal explanation was possible or some principles and subject matters should be privileged above others. In the medieval era, the summa posited a Christian synthesis of knowledge and belief. In the 18th century, the Enlightenment beckoned universal reason, followed by a number of modern initiatives including Transcendentalism, Umberto Eco’s speculation on a perfect language, and the Unity of Science movement in 1930s and 1940s. The search for unification theories in physics also fostered common principles of intelligibility, and more recently E. O. Wilson's theory of consilience. Each effort found support but also encountered limits. The Enlightenment project of the Encyclopedia, for example, was a multidisciplinary alignment rather than a complete integration of what was known at the time. The Unity of Science movement sought to integrate scientific statements into a common foundation and terminology for the philosophy of natural and social sciences. However, it became an object lesson in reductionism. Wilson’s (1998) Consilience hearkened back to the ancient "Ionian Enchantment" of belief in the primacy of a few natural laws. Yet, the problem of reductionism resurfaced in his privileging of biochemical explanation.

In reviewing the history of discourse on TD, Kockelmans (1979) found that TD has tended to center on educational and philosophical dimensions of sciences. Opinions differ, however, on whether the focus should be unification of sciences through an all-encompassing theory or a unified worldview that provides common ground for understanding culture, science, and education. The search for unity today, Kockelmans emphasized, does not follow automatically from a pregiven order of things. It must be continually "brought about" through philosophical reflection. The task is not restricted to the discipline of philosophy. It requires a critical “attitude” on the part of everyone. Kockelmans identified four stances. One group, deeming ID a symptom of the pathological state of theoretical knowledge, contends that interdisciplinary reorganization of higher education fails to address the larger problem of the disintegration of unity and the need to overcome obstacles to realizing the whole of human existence. A second view offers a more optimistic call for renewed philosophical reflection on presuppositions and unity of theoretical knowledge in all disciplines. The third view appeals to the social relevance of higher education, in calls for reorganizing theoretical knowledge to address problems of the modern world and forming new interdisciplines and integration of existing sciences. A fourth view situates the meaning and function of science in the modern world all-encompassing philosophy of science.
Kockelmans’ analysis of the discourse reflects a philosopher’s perspective on the definition of TD. Three other approaches emerged in the pioneering 1970 OECD conference. Participants Jean Piaget (1972) and Andre Lichnerowicz (1972) regarded TD as a conceptual tool capable of producing interlanguages. Piaget treated it as a higher stage in the epistemology of interdisciplinary relationships based on reciprocal assimilations. When physics encompassed biology and psychology, he envisioned, it could become a truly "general" science and "full transdisciplinarity" be reached. Lichnerowicz promoted “the mathematic” as a universal interlanguage. In the most widely circulated model of the three, Erich Jantsch (1972) embued TD with a social purpose in a hierarchical model of the system of science, education, and innovation that moved from empirical, pragmatic, and normative to purposive levels. Jantsch envisioned all disciplines and interdisciplines coordinated by a generalized axiomatics. The ultimate degree of coordination required mutual enhancement of epistemologies, effecting Ozbekhan’s notion of “synepistemic” cooperation.

The intellectual and socio-political climate of the times is evident in these definitions. Piaget and Lichnerowicz were structuralists, and the organizing languages of Jantsch’s model were logic, cybernetics planning, general systems theory, and organization theory. Even so, Raymond Miller (1982) explained, all TD movements have aimed to transcend the narrow scope of disciplinary worldviews by reorganizing the structure of knowledge, including the exemplars of general systems, structuralism, Marxism, sociobiology, phenomenology, and policy sciences. Holistic in intent, they metaphorically encompassed the parts of material fields that disciplines handle separately. Miller rejected Kockelmans’ call for an all-encompassing philosophy, though, deeming it an impossible ethical quest. All syntheses, he added, are not identical. Some proponents claim to replace existing disciplinary approaches. Others propose alternatives, and some devise sources of coherence for working across disciplines. Moreover, they claim differing types of isomorphism with the “real” world they purportedly represent, and have differing receptivity to quantitative manipulation and empirical application. The search for formal deep structures reflecting a cognitive, biologically-derived pattern of human thought also clashes with approaches grounded in material forces of production.

Over the past several decades, a broad-based set of changes in the nature of knowledge and culture further challenged the prospect of TD as unity. Older epistemological classifications and domains of expertise became more permeable. The underlying tenets of the classical model of unity were also called into question, signified by the shift of keywords in Cluster #2. Older values of certainty, universality, simplicity, linearity, one-dimensionality were supplanted by complexity, uncertainty, diversity, non-linearity, multidimensionality, and emergence. And, the expanding number of disciplinary specialties coupled with formation of new interdisciplinary communities of practice led to greater heterogeneity and hybridity of knowledge. As a result, the logic of “unity” moved toward the logic of “unifying” approaches, relationality and coherence became prime values, and interplay, intersection, interdependence became defining characteristics of knowledge production. The implications of this shift are readily apparent in the conception of TD developed by the Centre International de Recherches et Études Transdisciplinaire (CIRET) in Paris.

In 1987 Basarab Nicolescu called for a new broad-based scientific and cultural approach informed by the worldview of complexity in science. CIRET is a meeting-place for specialists from different sciences and other domains of activity, committed to long-term dialogue based on
the three pillars of complexity, multiple levels of reality, and logic of included middle. The discovery of bridges between domains and interactions permits the emergence of unity amidst diversity and coherence among different levels of reality. An open structure of unity replaces reduction with a new plurality and principle of relativity. It also encompasses ethics, spirituality, and creativity. TD vision does not simply transfer a model from one branch of knowledge to another. Nor does it propose a complete theory for moving from one level of reality to another, nor constitute a new super discipline or science. It achieves its fullest expression as a “moral project” that is simultaneously transdisciplinary, transnational, and transcultural.

Participation and Collaboration

Another definition of TD became evident in the late 1980s in Swiss and German contexts of environmental and sustainability research. It shares some tenets of Nicolescu’s vision, including complexity, multidimensionality, and diversity. Yet, it prioritizes collaborative problem-oriented research for the “common good.” This definition lies at the heart of the Swiss-based Transdisciplinarity Net (td-net) (http://www.transdisciplinarity.ch/e/index.php). Td-net colleagues offer a schematic based on the current discourse of Transdisciplinarity. Four features appear in differing weights and combinations depending on a particular school of thought: socially-relevant issues, transcendance and integration of disciplinary paradigms, conduct of participatory research, and the search for unity of knowledge (Pohl and Hirsch Hadorn, 2008, 69-88; and Pohl, 2010. Cluster #3 highlights a broad shift associated with the first three features:

Cluster #3

- participation, cooperation, collaboration, partnering, networking, mutual learning
- postnormal science

The underlying premise of Cluster 3 is that societal problems need to frame research questions and practices now, not academic disciplines (Transdisciplinarity Net, 2009). The problems of society are increasingly complex and interdependent. They are not isolated to particular sectors or disciplines. Moreover, they are not predictable. Modern societies are ruled increasingly by unwanted side effects of differentiated subsystems, such as the economy, politics, law, media, science. This realization aligns TD theoretically with Funtowicz and Ravetz’s (1993) notion of “post-normal science” (1993). Both TD and “postmodern science” break free of reductionist and mechanistic assumptions about the ways things are related, how systems operate, and the expectation that science delivers final, precise estimates with certainty. “Unstructured” problems are driven by complex cause-effect relationships, and they exhibit a high divergence of values and factual knowledge. They are emergent phenomena with non-linear dynamics, uncertainties, high political stakes in decision making, and divergent values and factual knowledge. Stakeholder and community inputs in local environments also shape values and knowledge.

Pohl (2010) traces the framing of TD around societal problems and trans-sector participation during the early 1990s to the journal GAIA and large research initiatives in Switzerland, Austria, and Germany focused on environment and sustainability. By 2000 case studies were being reported in all fields of human interaction with natural systems (agriculture, forestry, industry, megacities) and technical development (nuclear- and biotechnology, genetics). This approach had
also proved effective in fields where social, technical, and economic developments interact with elements of value and culture (such as aging, energy, health care, nutrition, sustainable development, landscape, housing and architecture, and urban land and waste management). Prioritizing of socially relevant issues and participation is particularly strong in German-speaking countries of Europe, in North-South partnerships, and in northern countries such as the Netherlands, Denmark and Sweden (Klein et al., 2001; Hadorn, et al., 2008).

Two other initiatives in the early 2000s also prioritized societal problems with emphasis on participation, though with differing degrees of stakeholder engagement. The Australian-based Integration and Implementation Sciences (I2S) Network aims to create a new “discipline” that provides concepts and methods for conducting research on complex real-world problems for change in policy and practice, comparable to the discipline of statistics. I2S is committed to trans-sector participation in the mode of td-net. It supports research on social, health and environmental problems through synthesis of both disciplinary and stakeholder knowledge. I2S operates as an intellectual hub for teams working on different problems, including Drug Policy Modeling and Policing and Security and is a forum for evaluating quality, raising standards, and advancing education at multiple levels. The Network’s online Integration Insights series presents digests of pertinent information and knowledge, and recent work has focused on dialogue methods (MacDonald, Bammer, & Deane, 2009; http://i2s.anu.edu.au/).

In the early 2000s, a parallel framing of TD was apparent in the USA. This initiative aims to build a form of “transcendent interdisciplinary research” capable of generating new methodological and theoretical frameworks for defining and analyzing social, economic, political, environmental, and institutional factors in health and well-being. The initiative began in the National Cancer Institute (NCI) and is currently being advanced in the Science of Team Science (SciTS) Network. SciTS includes scientists, trainees, funders, policymakers, and clinical and community partners, although direct involvement of community stakeholders in the mode of td-net and I2S is not a primary focus. The emphasis is on scientific discoveries, educational outcomes, translation of findings into new clinical practices, and public policies. SciTS is advancing understanding of the personal, social, and institutional dynamics of collaboration, and NCI has recently launched a new online resource toolkit (“The Science of Team Science” http://scienceofteamscience.northwestern.edu/team-science-resources).

**Forms of Knowledge**

New framings of TD have also produced a fourth cluster of keywords that highlight forms of knowledge.

**Cluster #4**
- system knowledge, target knowledge, and transformation knowledge
- socially robust knowledge, contextualization, new social distribution of knowledge, science in society, co-production of knowledge
  - local, indigenous, people’s, traditional forms of knowledge
In Scholz and Marks’ (2001) formulation of TD, integration is required across system knowledge, target knowledge, and transformation knowledge. They also comprise the foundation of *Principles for Designing Transdisciplinary Research*, depicted in Figure 5 of Pohl and Hirsch Hadorn’s book of that name (2007, 38):

![Figure 1. Interdependencies between the Three Forms of Knowledge](image)

TD research, Pohl and Hirsch Hadorn emphasize, must accept the fact that definition and analysis of problems constitute disputed ground. Systems Knowledge confronts the challenge of how to deal with uncertainties that result from transferring abstract insights to a concrete case with specific conditions. Uncertainties also result from lack of empirical or theoretical knowledge about a problem, and depending on interpretation of a given problem, particular elements may be assigned different degrees of importance and thereby lead to diverging assessments of the need for action as well as target knowledge and transformation knowledge. Target Knowledge addresses what the multiplicity of social goals for research means for practice-related problems, and for collaboration between science and stakeholders in society. Positions must be clarified and prioritized in the research process according to significance for developing knowledge and practices that promote the common good. Transformation Knowledge takes established technologies, regulations, practices and power relations into consideration. In order to be effective, options for change have to rely on existing infrastructure, current laws, and current power relations and cultural preferences.

The balance of academic and stakeholder knowledge and participation differs from project to project. Yet, two books theorize the socially distributed process of knowledge production that underlies values in Cluster #4.
In 1994, in *The New Production of Knowledge*, Gibbons, et al. proposed that a new mode is fostering synthetic reconfiguration and recontextualization of knowledge. Its defining traits include complexity, non-linearity, heterogeneity, and transdisciplinarity. New configurations of research work are being generated continuously, and a new social distribution of knowledge is occurring as a wider range of organizations and stakeholders are involved, including NGOs, private firms, and governmental agencies. Gibbons and colleagues highlighted instrumental contexts of application and use, such as aircraft design, pharmaceutics, electronics, and other industrial and private-sectors of science and technology.

In 2001, three of the book’s authors extended Mode 2 theory in *Rethinking Science*. They argued that contextualization of problems requires participation in the agora of public debate, incorporating the discourse of democracy. When lay perspective and alternative knowledges are recognized, a shift occurs from solely “reliable scientific knowledge” to inclusion of “socially robust knowledge,” dismantling the academic expert/ non-academic lay dichotomy. Contextualization also blurs boundaries of control, “competence” is redefined, and new criteria of evaluation emerge (Nowotny Scott, & Gibbons 2001). Commitment to a socially inclusive thematic of knowledge production is strong in a number of local practices. Informed by the work of CIRET and writings of Edgar Morin, Latin American framings of TD have fostered community governance, and td-net partnerships in India and Africa have facilitated integration of local, indigenous, people’s, and traditional forms of knowledge. A 2009 conference on “Knowledge Democracy” in Leiden, Netherlands also highlighted incorporation of lay knowledge on framing TD (in’t Veld, 2010)

A final cluster of keywords extends alignment of TD with the transgressive imperative.

**Cluster #5**

- interrogation, critique, transgression, transformation

  - reconfiguring, reformulating, resituating

Transdisciplinarity is not only transcendental, it interrogates the protocols and truth claims of disciplinary conventions, expertise, and control. This extension was foreshadowed in the concept of Critical Interdisciplinarity, which problematizes the existing structure of knowledge and education (Klein 2010). In the 1990s, the term began appearing more often in humanities and fields of Critical ID as a label for critical imperatives that interrogated current approaches. Ronald Schleifer (2002) associates the idea of a “new interdisciplinarity” with theoretical approaches and transdisciplinary or cultural study of social and intellectual formations that have breached canons of wholeness and the simplicity of the Kantian architecture of knowledge and art. Moreover, Douglas Kellner (1995) specifies, the transdisciplinary operation of cultural studies pushes boundaries of class, gender, race, ethnicity, and other identities. Dölling and Hark (2000) relate TD in women’s and gender studies with critical evaluation of terms, concepts, and methods that transgress disciplinary boundaries. In Canadian studies, Jill Vickers (1997) connects trans- and anti-disciplinarity with movements that reject disciplinarity in whole or in part, while raising questions of socio-political justice. And, this imperative lies at the heart of definitions of interdisciplinarity linked to struggles for social change begun in the 1960s and 1970s (Parker, Samantrai, & Romero, 2010).
More broadly, Upendra Baxi (2000) observes that calls for transdisciplinarity arrived at a moment of wider crisis in the discourse of human rights accountability. Baxi highlighted, especially, gaps between Western and non-Western traditions, esoteric and organic knowledges, colonial and indigenous traditions, official and people's knowledges. Privileged and dominant forms of knowledge establish genres, protocols, canons, and formations that deprivilege other modes of knowledge. One of the transgressive purposes of transdisciplinarity, therefore, is to renounce the logic of instrumental reason by creating new participatory modes of knowledge, discourse, and institutional frameworks across all sectors of academic, private, and public life.

Professional practice is implicated as well. Editors of a book on *Transdisciplinary Knowledge Production in Architecture and Urbanism*, Isabelle Doucet and Nels Janssen (2011), cite fusion of academic and non-academic knowledge as the key distinction between ID and TD knowledge production. New hybrid modes of inquiry, practice, and learning also have the capacity to overcome past schisms of theory/history and practice, critical theory and projective design. This framing of TD places ethics, aesthetics, and creativity inside of disciplinary and professional work while incorporating social and political questions. It brings new objects into view, places practices in new configurations, contextualizes and resituates theory and learning, and heightens awareness of hybridization by incorporating once excluded forms of knowledge, including the understandings of lay people. And, it magnifies the greater heterogeneity and relationality of knowledge today. Tasks lie at the boundaries and in spaces between systems and subsystems, requiring collaboration among a hybrid mix of actors.

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In the current heightened momentum for TD, the word is appearing in a widening range of contexts, as varied as learning assessment, arts education, mental health, sanitation, engineering, sustainability, ecological economics, human population biology, informatics, knowledge organization, team-based holistic approaches to health-care, and student-centered curriculum integration. Judging by patterns in the keyword clusters, imperatives will continue to differ. Moreover, even the same underlying principle may be framed differently. One strand of TD problem solving, for instance, centers on collaborations between academic researchers and industrial/private sectors for the purpose of product and technology development. It prioritizes design innovation and involvement of stakeholders in product development. A different type of TD problem solving occurs when academic experts and social actors cooperate in the name of democratic solutions to controversial problems such as sustainability and the risks of technological modernizations such as nuclear power plants. The current increased momentum for Transdisciplinarity reinforces the need for forums such as *Integral Review*, where can transdisciplinarians talk with each other about how to strength both their local projects and their common goals.

**References**


Transdisciplinarity Net. (Swiss Academies of Arts and Sciences. [http://www.transdisciplinarity.ch/](http://www.transdisciplinarity.ch/)


Visions of Transmodernity:
A New Renaissance of our Human History?

Irena Ateljevic

Abstract: In this paper I will engage with a broad range of literature that provides us with many signals and evidence of an emerging and significant paradigm shift in human evolution. In doing so, I will offer the concept of transmodernity as an umbrella term that connotes the emerging socio-cultural, economic, political and philosophical shift. My research across boundaries of many different fields such as critical economics, philosophy, subaltern and postcolonial studies, social anthropology and psychology, cultural studies, political science and social activism literature will illustrate how an integrated approach and dialogue is urgently needed, indeed more than ever before. Different authors use a variety of terms to capture what can essentially be described as the synchronised phenomenon of emerging higher collective consciousness—transmodernity paradigm (Ghisi); transmodern philosophy of political liberation (Dussel); Hegelian dialectical triad of thesis, antithesis and synthesis (Magda); the reflective/living-systems paradigm (Elgin); the partnership model of caring economics (Eisler); the relational global consciousness of biosphere politics (Rifkin); love ethics (hooks); the circularity paradigm of interdependence (Steinem). With a reference to a variety of authors I will argue that the reason we do not hear much about this movement is because it is not centralised and coordinated under a single unifying name. 'Transmodernity' ropes together many concepts/tenets of other writings that do not necessarily use the same term, but I chose it in order to communicate the overall idea of the emerging paradigm shift as the next cultural and material development in human history. I have opted to use the concept as a medium to convey humanity's unified synchronicity, which is part of a transformation that can be claimed to be 'the new renaissance' of human history.

Keywords: Comparative analysis, dialogue, integrated approach, paradigm shift, new renaissance, transmodernity

Introduction

*Dreams require optimism, a sense that one’s hopes can be fulfilled.*
(Rifkin, 2005, p. 384)

This paper sets its sight on hopeful, positive perspectives in the context of the post-9/11 world, which has climaxed in a global crisis of wars, terrorism, climate change, over-
consumerism, increasing gaps between the rich and poor, social alienation, and individual feelings of pressure, anxieties, chaos and powerlessness world-wide. These processes have raised a whole range of futurist scenarios from the ‘softer’ questions of environmental sustainability to the radical argument that humanity is in danger of collective death (e.g. Brown, 2006; Ghisi, 2006; Rooney, Hearn & Ninan, 2005). The questions of (the earth’s) sustainability that have penetrated public discourse only in the last two decades are speeding ahead faster than we can comprehend. The problem is that we still frame it within the existing (modern) economic and political framework which continues to use rationality, money and technology as the most dominant measurements of progress and human development. Reflectively, social scientists, economists, political activists, writers, spiritual leaders and many successful entrepreneurs argue that humanity needs (and is actually going through) a major global mind change and paradigm shift.

In arguing so, I present here my transdisciplinary research, which begun in 2005 when I heard for the first time about the major cultural transformation—a global shift of consciousness, values, worldviews, and paradigms, which is spearheaded by a growing section of society world-wide. While the reviewed works propose a number of different concepts, some authors—the most influential of which are Marc Luyckx Ghisi and Enrique Dussel - link the phenomena of social change they describe to the notion of transmodernity, a term that was first coined by the Spanish philosopher and feminist Rosa Maria Rodriguez Magda in her essay La Sonrisa de Saturno: Hacia una teoria transmoderna (1989), albeit in a more philosophical sense referring to general consequences of globalisation.

My motivation in writing this paper is to propose to use the concept of transmodernity as an umbrella term that connotes the emerging socio-cultural, economic, political and philosophical shift. I suggest this merger not as a theoretical exercise, but out of heartfelt sympathy with the shift, and a genuine conviction that in order to be visible, effective and compelling, any movement needs a unifying name (Eisler, 2002). I will take the elaboration of the concept of transmodernity as given by Ghisi (2001, 2006, 2008) as a starting point. However, in recognition that most of the works I review here are written by Europeans/Americans, I also looked at the opinions of postcolonial and subaltern writers who similarly offer a positive view of the transmodern world potentialities. Here, transmodern ideas are primarily advocated by the Argentinean philosopher and historian Enrique Dussel. In sketching Ghisi’s and Dussel’s main ideas, I need to alert the reader that I will present them as given, so the general picture of their notions of the concept of transmodernity is obtained. In order to avoid the trap of the post-modern deconstruction process which Rifkin (2005) claims brought us to “modernity reduced to intellectual rubble and an anarchic world where everyone’s story is equally compelling and worthy of recognition” (p. 5), I am tracing the commonalities of what transmodernity offers in this fresh and promising move towards a new era of humanity. However, within the constraints of this paper, I am also acutely aware that my discussion will remain at the level of the general overview, which always runs the risk of oversimplifying many complex aspects that will be displayed here.

My review of Ghisi’s and Dussel’s position is followed by reference to other writings in the fields of critical economics, social anthropology and psychology, cultural studies, political science and social activism literature, that seem to be concerned with similarly transmodern
phenomena, but without labelling them as such. These writings communicate a similar idea of an emerging paradigm shift as the next cultural and material development in human (although dominantly Western) history. Hence, I have opted to use the concept of transmodernity as a medium to convey what appears to be a single message: “Humanity finds itself, once again, at a crossroad between a dying old order and the rise of a new age” (Rifkin, 2005, p. 181).

Transmodernity: The Dialectic Triad

The concept of transmodernity is a very complex thesis which Ghisi (1999, 2006, 2008) primarily explains as a new paradigm of the world which communicates certain underlying values that humans rely on to make their judgments and decisions in all areas of their activities—economy, politics and everyday life. Ghisi begins his thesis with an overview of five levels of change, which he describes through an iceberg metaphor of human global (un)consciousness and (un)awareness. Like the submerged parts of an iceberg floating in the sea, Ghisi’s lower levels of societal change are the least visible to humanity. So, the first level is at the darkest and coldest bottom where our global civilization finds itself today, at the edge of unsustainability and what Ghisi describes as the slow death and collective suicide of humanity. The next higher level relates to the death of command, control and conquest patriarchal values which have turned the world into a competitive and territorial battleground. Level three refers to the death of modernity as a dominant paradigm through which we see the world as an objective reality rooted in impartial truth. Level four refers to the death of the industrial type of businesses and decline of the material economy, while level five concerns the overall crisis of overly bureaucratic and pyramidal institutions. While such critical deconstruction of Eurocentric thesis of modernity (based around key mantras of growth, progress and competition) is nothing new and has been very much part of the postmodern critical turn in social science and humanities since late 1980s, Ghisi continues to explain, a transmodern way of thinking is now emerging, as our hope for a desperately needed and newly reconstructed vision. It is claimed that the everything goes of the postmodernists needs to go silenced. Whether they like it or not, there are things that have to have value, there is meaning that must be preserved, otherwise we drown in the coarsest cynicism, an expression of deep disdain for life (Boff, 2009). After the endless postmodern (albeit necessary) deconstructions of modernity in which many intellectuals engaged for the last few decades have led us to eclectic relativity and fundamentalisms that in many ways has paralysed us to claim any possible way forward. The postmodern rubble in which we have found ourselves is quite neatly captured by Rifkin (2005):

If post-modernists razed the ideological walls of modernity and freed the prisoners, they left them with no particular place to go. We became existential nomads, wandering through a boundaryless world full of inchoate longings in a desperate search for something to be attached to and believe in. While the human spirit was freed up from old categories of thought, we are each forced to find our own paths in a chaotic and fragmented world that is even more dangerous than the all-encompassing one we left behind. (p. 5).

According to Ghisi then, the very concept of transmodern implies that the best of modernity is kept while at the same time we go beyond it. As such, it is not a linear projection which takes us from (pre)modernity via postmodernity to transmodernity; rather, it transcends modernity in
that it takes us trans, i.e. through, modernity into another state of being, “from the edge of chaos into a new order of society” (Sardar, 2004, p. 2).

This argument very much reflects the original meaning of the term as put forward by Magda (1989), who uses Hegelian logic whereby Modernity, Postmodernity and Transmodernity form a dialectic triad that completes a process of thesis, antithesis and synthesis. As expressed in her own words: “the third tends to preserve the defining impetus of the first yet is devoid of its underlying base: by integrating its negation the third moment reaches a type of specular closure” (Magda, 1989, p. 13). In other words, transmodernity is critical of modernity and postmodernity while at the same time drawing elements from each. In a way it is a return to some form of absolute logic that goes beyond the Western ideology and tries to connect the human race to a new shared story, which can be called a global relational consciousness (Rifkin, 2005).

Following Magda (1989, 2001, 2004), the notion of transmodernity appears first in Dussel’s (1995, 1996, 2002, 2004, 2006) and then in Ghisi’s work (1999, 2001, 2006, 2007, 2008). Possibly, the fact that most of the earlier publications by Magda and Dussel are in Spanish may explain “transmodernism’s ‘newness’ in the North” (Cole, 2005, p. 90). However, both Ghisi and Dussel seem to use the term without reference (and awareness) to Magda’s or each other’s writings, which suggests that the term was actually coined in synchronous fashion. While there are many similarities in the works of Ghisi and Dussel, the authors also differ on several points. I will now briefly highlight and compare the main tenets of ‘transmodernity’ as given by Ghisi and Dussel.

Transmodernity - the Main Tenets

Transmodernity can generally be characterized by optimism to provide hope for human race. Ghisi (1999, 2001, 2006, 2007, 2008) describes transmodernity as a planetary vision in which humans are beginning to realize that we are all (including plants and animals) connected into one system, which makes us all interdependent, vulnerable and responsible for the Earth as an indivisible living community³. In that sense this paradigm is actively tolerant and genuinely democratic by definition, as the awareness of mutual interdependency grows and the hierarchies between different cultures dismantle.

Transmodernity is also essentially postpatriarchal in a sense that women’s visions and intuitions are to be recognized as indispensable in order to invent together innovative urgent solutions. This is radically different from the (preceding and necessary) (post)modern feminist movements that fight for women’s rights only. Rather it is about a joint effort of men and women to fight for the better world of tomorrow by rejecting values of control and domination.

It is also essentially postsecular in a sense that redefines a new relation between religions and politics in a way that re-enhants the world towards a new openness to spiritual awareness and presence as a basis for private behaviour and public policy, whilst rejecting any religious divisions and dogmas. It is open to the transcendental, while resisting any authoritarian imposition of religious certainty. In doing so it tries to rediscover the sacred as a dimension of life and of our societies.
Transmodernity opposes the endless economic progress and obsession with material wealth and instead promotes the concept of quality of life as the measure of progress. This is expressed in the form of the knowledge economy which moves the emphasis from material capital to intangible assets and the nourishment of human potential. It challenges the rationalized notions of work in its artificial divorce from life. It combines rationalism with intuitive brainwork.

It moves away from vertical authority toward “flatter,” more “horizontal,” organizations; away from “recommendations-up-orders-down” management and toward more consensual decision-making (Ghisi, 1999, p.3). It downsizes the concept of clergy, technocrats and experts in order to raise the self-awareness, self-knowledge and individual accountability of all, yet it simultaneously uses the modernist achievements of science, technology and social innovation. It promotes Earth citizenship and draws from the highest potentials of humanity. It redefines the relation between science, ethics and society to reach for real and radical transdisciplinarity.

Yet it is not a uniforming view as global reconciliation around a sustainable future and a broad range of cultural diversity is maintained at the same time. Within the global vision of connected humanity it claims that each community or region needs to be free to develop in ways that are uniquely suited to its culture, ecology, climate and other characteristics. It wants us to see that the danger of today is less between cultures and religions, than the conflict between different paradigms (Ghisi, 1999). As such it offers a powerful path to peace and a new platform of dialogue between world cultures.

In developing the concept of transmodernity, Ghisi (1999) speaks from the capacity of a Belgian theologian, philosopher and researcher on global cultural transformation who worked in the Forward Studies Unit of the European Commission for 10 years, advising presidents Delors and Santer on EU visions, ethics and culture shifts. Dussel (1995), on the other hand, speaks from the Latin American, postcolonial neo-Marxist perspective, and associates transmodernity with his philosophy of liberation. Needless to say, while there are many similarities, Dussel’s perspective on transmodernity is somewhat different from Ghisi’s admittedly Eurocentric perspective. While Ghisi departs from a point of mostly Western socio-cultural and historical analysis, Dussel and his followers take epistemological, philosophical and political aspects of transmodernity as a starting point to unsettle Eurocentric coloniality. Dussel sees the potentiality in transmodernity to move us beyond traditional dichotomies; to articulate a critical cosmopolitanism beyond nationalism and colonialism; to produce knowledge beyond third world and Eurocentric fundamentalisms; to produce radical post-capitalist politics beyond identity politics; to overcome the traditional dichotomy between the political economy and cultural studies; and to move beyond economic reductionism and culturalism (Grosfoguel et al., 2007).

Dussel, just like Ghisi, is concerned about the destructive forces of modernity that are destroying the planet and along with it humankind: “The three malaises of modernity (individualism, the primacy of instrumental reason or technological capitalism, and the despotism of the system), produce a ‘loss of meaning’, an ‘eclipse of ends’, and a ‘loss of freedom’ in bureaucratized societies” (Dussel, 1996, p. 142), and the capitalistic emphasis on “profit, private appropriations and personal benefits” (Dussel, 2006, p. 491) needs to be replaced with transmodern planetary interconnectedness and mutuality.
While Ghisi (1999) concerns himself, as we have seen above, mainly with describing the characteristics of the paradigm shift, Dussel’s (2009) central argument revolves around the role of intercultural dialogue in bringing about and defining the shift towards transmodernity. Granted, Ghisi does note certain underlying forces that he considers are driving transmodern changes, among them the inability of reductionist capitalism to respond effectively to increasingly challenging global problems, and the transition from an industrial to a spiritual, wisdom economy. However, for Dussel, genuine dialogue across all cultures is needed in order for transmodernity to transcend Eurocentrism. Let me clarify that Ghisi (1999) also sees intercultural dialogue as central to transmodernity, however, it seems as though to him it is an aspect, rather than the driving force of the transmodern paradigm shift, as it is for Dussel.

In order to understand this claim, it is necessary to briefly outline Dussel’s preceding argument: In his revealing historical analysis (see Dussel, 1996), he locates the origins of modernity in the Iberian peninsula, starting with the invasion of the Americas from 1492, which resulted in Europe being able to place itself at the centre, while the rest of the world became a periphery. However, he also shows later (2002, 2004) that it was not until the Industrial Revolution that Europe gained a relative advantage large enough to exert its hegemony over other highly developed cultures of the time—such as China and Hindustan (Dussel, 2002). Given this relatively short timeframe of only 200 years, he continues, European hegemony was unable to fully suppress most of the value structures of ancient cultures, like the Chinese and cultures of the Far East, the Hindustani, the Islamic, the Russian-Byzantine, and Latin American cultures (2002, 2004).

According to Dussel, these ancient cultures hold “enough human potential to give birth to a cultural plurality that will emerge after modernity and capitalism” (2002, p. 234), and that they are presently reaffirming their roots in a trans-modern cultural response to our contemporary challenges (2004). Moreover, he argues that this same process of self-affirmation is taking place in regional European cultures (such as the Galician, Catalan, Basque, and Andalusian cultures in Spain; the Mezzogiorno in Italy; the Bavarians in Germany; and the Scottish, Irish), and in the minorities of the United States, especially the Afro-American and Hispanic cultures (2002). In this, Dussel sees great hope for the future, as the irrupting diversity of perspectives carries a rich pluriversity that can create authentic intercultural dialogue (2002, 2009). In other words, far from limiting itself to a weak relativism by default, or to micro-narratives, the pluriversal or what is also known as decolonial approach would be to search for universal knowledge as pluriversal knowledge, but through horizontal dialogues among different traditions of thought. The construction of transmodern pluriverses means taking seriously the knowledge production of non-Western critical traditions and genealogies of thought and such dialogue, could “propose novel and necessary answers for the anguishing challenges that the Planet throws upon us at the beginning of the twenty-first century” (Dussel, 2004, p. 18).

Like the tropical jungles with their immense quantity of plants and animals genetically essential for the future of humanity, the majority of humanity’s cultures excluded by modernity […] and by globalization […] retains an immense capacity for and reserve of cultural invention essential for humanity’s survival. This creativity will also be needed if humanity is to redefine its relationship with nature based on ecology and interhuman
solidarity, instead of reductively defining it on the solipsistic and schizoid criterion of increasing rates of profit. (Dussel, 2002, pp. 234-235)

Importantly, Dussel warns that (subconscious) Eurocentrism currently pervades all cultural arenas, European and non-European (2002), which makes genuine multiculturalism and dialogue—as opposed to sterile participation that follows Western procedural principles—a difficult endeavour (2004). Therefore, the dialogue needs to take place amongst cultures of the ‘South’ as well as between the South and the North (2004, 2009). Furthermore, genuine transversal dialogue needs to occur between culture’s critical innovators, who argue from the border between their culture and modernity, and who, rather than simply defend their culture, recreate it by critically evaluating both their own and modernity’s cultural tradition (Dussel, 2004, 2009). As a starting point, Dussel recommends certain core philosophical questions, which, while they can be expressed in different ways by different cultures, may still serve as bridges for a dialogue around universal human problems (Dussel, 2009).

In a similar vein, another scholar, Ziauddin Sardar (2004) sees the positive potentiality of the transmodern world to bridge what appears currently the impassable gap between Islam and the West due to the concept of tradition as an idée fixe of Western society. He shows how transmodern tenets of truly universal concerns (i.e., the survival of our planet) that inherently then lead to the consensual politics and modalities for adjusting to change are at very heart of Islam. Yet he warns us that in developing a transmodern framework to open discussions it is important to think of the Muslim world beyond the strait jackets of either ultra-modernist or ultra-traditionalist governments (neither of whom have any understanding of transmodernism) and involve ordinary people instead—activists, scholars, writers, journalists, etc. In doing so, Sardar (2004) argues we will discover that most people have critical but positive attitudes towards the West; and women will be as willing, if not more so, to participate in such discussions and the transformations they may initiate, as men. He is of the opinion that if the West shifts towards transmodernism, the involvement of the public will open up massive new possibilities for positive change and fruitful synthesis which would replace homogenizing globalization with a more harmonious and enriching experience of living together.

Returning to Dussel’s work, it is evident that he is in agreement with Ghisi and Magda that transmodernity forms a dialectic triad with modernity and post-modernity. Post-modernity—which is in Dussel’s view still inherently Eurocentric, as it has rather paradoxically reinforced the process of Othering by further demarcation of difference and identity politics - has served to raise critical consciousness and general respect for difference (2002; 2006), so that humanity is ready to subsume “the best of globalized European and North American modernity [...] in order to develop a new civilization for the twenty-first century” (Dussel, 2002, p. 224). Instead of being dominated by it, transmodernity is in constant dialogue with modernity (Dussel, 2006). For instance, the best of the modern technological revolution should be adopted, while discarding anti-ecological aspects (Dussel, 2002). Furthermore, the focus on instrumental reason which characterised modernity should not simply be abandoned, but subordinated to ethical principles and “put at the service of the dignity and freedom of all the members of the community” (Dussel, 2006, p. 504). Actually, Dussel agrees with Magda (2004) that increasing globalisation (Dussel, 2002) and the availability of information technology (2009) are driving the emergence of transmodernity, as both enable us to instantaneously receive news about other cultures and
respond with ethical judgement. As examples of social movements that are working towards replacing unjust modern practices with ethical alternatives, Dussel cites, for example, the Zapatist National Liberation Army in Mexico, the Sin Tierra movement in Brazil, the cocaleros coca growers in Bolivia, and the piqueteros—the unemployed—in Argentina, as well as groups that fight for the rights of workers, women, homosexuals, immigrants, and older people (Dussel, 2006).

Having reviewed, if briefly, both Ghisi’s and Dussel’s positions on transmodernity, I will now move on to present my own cross-boundary research, in which I engaged with the literature from a broad variety of fields to uncover theoretical notions and emerging practices from the perspective of socio-cultural demographics, levels of consciousness, economics and politics, interpersonal relations, and human geography that echo with the transmodern paradigm.

Transmodernity: Research Across Boundaries

I first heard about transmodernity in a keynote given by Marc Ghisi at the 2006 Nordic Tourism Studies Conference in Finland. Marc’s good news talk (Ghisi, 2006), based on his book (2001) Au delà de la modernité, du patriarcat et du capitalisme: La société réenchantée?2, was intriguing, and encouraged me to investigate the notion of transmodernity further. My ensuing journey of exploration proved to be purely fascinating and has not stopped since. Engaging with the broader literature in arts, humanities, social science and popular culture, I became very excited as I began to connect the different pieces of puzzle. I don’t believe in the concept of purely original ideas, and this project in particular has convinced me of the synchronicity phenomenon (Jarowski, 1996), whereby people sharing similar levels of consciousness are engaged in parallel intellectual universes around the globe, and articulate related ideas, but often express them in different wor(l)ds and terminologies. Reading major works of renowned social historians, political scientists and sociologists, a holistic picture emerged and I became convinced that a new global consciousness is awakening and fundamental changes are to occur. In the following sections, I present to the reader an overview of authors who engage - dispersed over a variety of fields and levels of analysis - with findings and theories that echo the tenets of transmodernity.

Socio-cultural Change: The Silent Revolution of Cultural Creatives

Ghisi substantiates his claims with reference to the phenomenon of the ‘silent revolution’ led by the growing numbers of so-called cultural creatives (Ray, 1996, 1998; Ray & Anderson, 2000), “who create new values and who, without knowing it, are activating the 21st century paradigm” (Ghisi, 2008, p. 158). The concept of the silent revolution of cultural creatives comes from the historian Arnold Toynbee who analysed the rise and fall of 23 civilisations in world history and who claims that when a culture shift occurs, usually 5% of ‘creative marginals’ are preparing the shift in silence (Ray & Anderson, 2000). This concept has been borrowed by sociologist Paul H. Ray and psychologist Sherry Ruth Anderson who have applied it to their

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2 In translation: ‘Beyond modernity, patriarchy and capitalism: Re-enchanted society?’, although not published in English as such. However, its extended version under the different title (Ghisi, 2008) has been translated into English.
market cluster research of politics in America. Drawing upon 13 years of survey research studies on over 100,000 Americans, plus over 100 focus groups and dozens of depth interviews they have discovered that around 24% of Americans are departing from traditional or modern cultures to weave new ways of life. They describe this new subculture as the cultural creatives, who deeply care about ecology and saving the planet, about relationships, peace, social justice, self actualization, spirituality and self-expression. They are both inner-directed and socially concerned. They are activists, volunteers and contributors to social causes—more so than other Americans. Amongst many interesting behavioural indicators, they are those who read and listen to the radio the most, and watch television the least. They reflect on themselves, like to travel, and are seriously looking for a spiritual dimension in life that goes beyond religious dogmas. In their everyday life they search for the harmony of the body, mind and spirit. Interestingly, 66% in this group are women. Ray and Anderson (2000) claim that because they have been fairly invisible in American life, cultural creatives themselves are astonished to find out how many share both their values and their way of life. Their visibility and the power to produce a serious change are overshadowed as they are often disregarded simply as the esoteric New Agers, who simply opt for an alternative lifestyle.

The statistics go beyond the North American continent however. The Statistics Office of the European Commission (Eurostat) used a similar method to the American study and confirmed a similar trend of approximate 20% of the European population who exhibit a similar set of values (Bréchon & Tchernia, 2002). In his latest work, Ghisi (2008) also gives anecdotal evidence, which shows that this trend is quietly spreading throughout Eastern Europe, Asia, and the Middle East.

**Changes in Consciousness: The Reflective/ Living-systems Paradigm**

In the typical fashion of synchronicity I mentioned at the beginning of this paper, these European results were presented to the State of the World Forum in San Francisco in 1997 (a gathering of world leaders convened by the Gorbachev Foundation) where another scholar, Duane Elgin, similarly suggested, on the basis of another independent world-wide survey, the emergence of a new paradigm and global consciousness change. In his Millennium Project Report (1997), Elgin provides many indicators that suggest the new emerging worldview which he calls a *reflective/living-systems paradigm*. He derives his claims from a comprehensive overview of many cultural transformation and paradigm publications by eminent scientists and world leaders as well as the empirical evidence of world statistics on global ecological awareness, main behavioural trends, emerging social values and sustainable ways of living. He also cites much interesting research on world web technology which he claims has the revolutionary capacity to connect and awaken humanity to larger evolutionary possibilities by creating a global awareness (to the same effect as the printing press progressed the oral culture of medieval ages to revolutionise and create the world commerce of modernity). Many of Elgin’s

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3 Ghisi who met Paul Ray in his capacity of working for the European Commission proposed his ‘Forward Studies Unit’ to do a similar study in the countries of EU.

4 This synchronicity I discovered by accident however. As I have been searching for the ‘new paradigm literature’ Duane Elgin featured highly on the list and then in reviewing his work I realized that he attended the same event in 1997 where Marc Ghisi presented the European study on cultural creatives.
claims have been also based on the World Values Survey\(^5\), run by Ronald Inglehart (1977), who also spoke about the silent revolution, although more in terms of a general intergenerational shift in the values of the population in advanced industrial societies and later of postmodern change (1997). Yet, more recently, he has also moved to re-examine the relationship between the sacred and the secular, based on new evidence of the World Values Survey in 80 societies which found that a growing proportion of the population in both rich and poor countries spends time thinking about the meaning and purpose of life (Inglehart & Norris, 2004).

**Changes in Societal Systems: The Partnership Model of Caring Economics**

For the skeptics who often too easily disregard such claims of societal transformation as being a rather elitist, upper/middle class luxury, in the next two sections, I would like particularly to cite two renowned social and political scientists who provide convincing evidence about new technological, economic and political arrangements that are creating and manifesting the transformation. Firstly, I will discuss the work of Riane Eisler (1987, 1996, 2002, 2007), a renowned macrohistorian\(^6\) and secondly, that of Jeremy Rifkin (1995, 2005, 2009), a well-known economist and advisor to government leaders and heads of state in Europe and the United States.

Based on her work as a cultural historian and evolutionary theorist over the last 20 years, Riane Eisler introduced the *partnership* and the *domination* system as two underlying possibilities for structuring beliefs, institutions and relations that transcend categories such as religious vs. secular, right vs. left, and technologically developed or underdeveloped. It is her particularly brilliant *The Chalice and the Blade* (1987), a historical analysis of over 30,000 years that provides us with a refreshing view of our past and ‘givens’ in all areas of our personal, communal, economic and political life. With reference to recent archaeological discoveries Eisler shows that ancient times (before 3500BC) were based on matrifocal values, which did not mean the opposition to patriarchy (i.e. the domination of women over men), but rather that societal organization focused on the values of giving life, fertility, the pleasure to exist, artistic creations and sexual pleasure. However, over time, the life-generating and nurturing powers of the universe, in our time still symbolised by the ancient feminine chalice or grail was replaced by the lethal power of the blade. In the new world, of which we are the last heirs, ‘power’ is no longer viewed as the ability to give life, but is construed as the power to bring death, destroy life, subdue others and be obeyed at all cost. For instance, Eisler provides a new interpretation of ‘original sin’ and the beginning of Genesis in the Bible as a text that represents the shift from the ‘old’ matrifocal symbols to the patriarchal myth in which the tree of life and wisdom becomes an evil and the sacred Eros between man and woman becomes the shameful act.

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\(^5\) Ronald Inglehart is a political scientist and the Director of World Values Survey, a global network of social scientists who have carried out (since 1981) representative national surveys of the public’s covering the full range of economic, social and political variations, in over 80 societies on all six inhabited continents, containing 85 percent of the world’s population.

\(^6\) Riane Eisler is the author of the international bestseller *The Chalice and the Blade: Our History, Our Future* (Eisler, 1987) which has been published in 23 foreign editions, making Riane the only woman who has been selected among 20 great thinkers, (including people like Hegel, Marx and Toynbee) for inclusion in *Macrohistory and Macrohistorians* (Galtung & Inayatullah, 1997).
In deconstructing the long history of domination, Eisler provides a beacon for our tired world of ongoing mistrust, blood, misery and injustice. By transcending the trap of polarised thinking she offers a way forward by pointing to the partnership model in which social structure is more generally egalitarian, with difference (be it gender, race, religion, sexual preference or belief system) not automatically associated with superior or inferior social and/or economic status. Females and males are equally valued in the governing ideology and stereotypically feminine values such as nurturance, caring and non-violence can be given operational primacy without resulting in stereotyping of gender roles. Furthermore, in partnership models of society, the spiritual dimension of the life-giving and sustaining powers of both nature and women is recognised and highly valued, as are these powers in men. Spirituality is linked with empathy and equity, and the divine is imaged through myths and symbols of unconditional love. Human relations are held together by pleasure bonds rather than by fear of pain. The pleasures of caring behaviours are socially supported, and pleasure is associated with empathy for others. Caretaking, love-making and other activities that give pleasure are considered sacred. The highest power is the power to give, nurture, and illuminate life. Love is recognised as the highest expression of the evolution of life on our planet, as well as the universal unifying power (Eisler, 1996, p. 403-405).

In providing us with an impressive range of world-wide evidence of personal, communal and economic initiatives, organisations and policies Eisler claims (in a similar vein as all the authors cited above) that we are finally witnessing the world-wide movement towards a partnership system (Eisler, 1996, 2002) of caring economics (Eisler, 2007). She asserts that the reason why we do not hear much about this movement in the media is because it is not centralised and coordinated under a single unifying name and: “without a name, it’s almost as if it didn’t exist, despite all the progress around us” (Eisler, 2002, p. xxi). In her latest groundbreaking work on the Real Wealth of Nations (Eisler, 2007) she deconstructs Adam Smith’s theory of the invisible hand of the market as the best mechanism for producing and distributing the necessities of life to unpack its deep-seated culture of domination and exploitation that has devalued all activities which fall out outside of the market’s parameters of buying and selling. Instead she proposes that the slowly emerging caring economics takes into account the full spectrum of economic activities of the household, from the life enriching activities of caregivers and communities to the life-supporting processes of nature. In juxtaposition to the overwhelming evidence of structural inequalities and social injustices of the domination system, she provides evidence and many practical proposals for new economic inventions—new measures, policies, rules, and practices—to bring about a caring economics that fulfils human needs. In the many examples given, such as high-quality care for children, she also uses a purely financial cost-benefit analysis to demonstrate how caring is one of the best investments a nation can make. In her insightful economic analysis of policies and their (in)effectiveness around the world, she convincingly shows how the dominant culture of the double economic standard of valorising ‘productive’ over caring activities actually influences economic policies and practices. Eisler’s claims of emerging critical and caring businesses is further supported by the evidence that many mainstream businesses are re-questioning the main purpose of their bottom-line existence (i.e., going for profit only) which has led to the concept of spiritual economy and spiritual entrepreneurs conscious of her/his missions towards the common good of humanity (see Allee, 2003; Harman, 1998; Stewart, 2002; World Business Academy, 2009).
Political Change: The European Dream and Biosphere Politics

Whilst Riane Eisler provides us with an economic model to analyse emerging transmodern phenomena in society and the market, Jeremy Rifkin, in his book *The European Dream: How Europe’s Vision of the Future is Quietly Eclipsing the American Dream*, claims that it is the European dream of a United Europe (in its potentiality) that is already a political manifestation of the coming era:

The new European dream is powerful because it dares to suggest new history, with an attention to quality of life, sustainability, and peace and harmony. In a sustainable civilization, based on quality of life rather than unlimited individual accumulation of wealth, the very material basis of modern progress would be a thing of the past...The new dream is focused not on amassing wealth but rather, on elevating the human spirit. The European dream seeks to expand human empathy, not territory. It takes humanity out of the materialist prison in which it has been bound since the early days of the eighteenth-century Enlightenment and into the light of a new future motivated by idealism. (Rifkin, 2005, pp. 7-8)

In the light of many EU controversies, hypocrisies and problems, claims could be easily interpreted as overtly idealistic. However, he stresses that dreams reflect hopes, not achievements; hence the notion of the potentiality in many of the tenets provided by the ideal of European dream.

In elaborating his thesis Rifkin (2005) provides us with an overview of how the fundamental pillars of the modern era: individualism; the market-exchange economy, the ideology of property; and territory-bound-nation-state governance (forged with capitalistic markets) were created and how they are slowly getting interwoven with new spatial, economic, social and political arrangements of the global era. By giving us an overview of its political architecture and the historical making of the united Europe, its unique features of extra-territorial governance, constitution, internal workings and various policies, he gives us a realistic picture of Europe’s many hypocrisies and contradictions, yet, and this is the focus of my review, Rifkin also points to its many achievements and potentialities for advancing greater interconnectedness and mutuality, and a relational global consciousness.

First he presents an overview of the burgeoning network commerce and the ‘immateriality’ of the knowledge economy (it is estimated that approx. 40% of the European Union economy is already in the non-material, knowledge society) which is giving a birth to a new economic system based on the cooperative commerce of reciprocity and trust. Rifkin aptly describes the difference between the market and network economy: “markets are based on the pursuit of self-interest, networks on shared interest” (Rifkin, 2005, p. 193).

Second he contrasts the politics of the nation-state era which operates along two poles of market and government; to the three-sector politics that include civil society which makes the new European dream realizable. In particular, in its embrace to share at least some governing power with civil society organizations (CSOs), Rifkin claims the EU is changing the governance landscape forever. He deals with the EU controversial policy issues of advancing both cultural
diversity and universal human rights and how CSOs represent the social engine to preserve diversity while mobilizing public support behind universal rights’ agendas. They are, Rifkin (1995) claims, local, transnational and global players and the essential political partner for the EU regulatory state.

Third, he shows that the EU precautionary principle policy for regulating science and technology innovations, and the introduction of new products is successfully being used to review and even suspend experiments and innovations that potentially endanger the health of humans, environment, animals and plants. While acknowledging that the old Enlightenment paradigm to grow, exploit and colonize the Earth still pervades, Rifkin (2005) is of the opinion that this bold, cutting-edge initiative demonstrates a radically different view of nature and respect of Earth as the interconnected whole.

Overall, Rifkin’s (2005) analysis of change at the European level is a call to move from the current geopolitics - and its assumption that the environment is a giant battleground where we all fight for our survival—to biosphere politics, or the premise of the Earth as a living organism made up of interdependent relationships on which we all can only survive by stewarding the larger communities of which we are part. In his latest book (Rifkin, 2009), The Empathic Civilization: The Race to Global Consciousness in a World in Crisis, Rifkin elaborates on this call to become more oriented towards mutuality and interconnectedness by providing a historical analysis of empathy, showing that humans are fundamentally empathic beings, and that society has become increasingly empathic throughout history. Referring to the beginning of biosphere consciousness, this latest book asks whether we can “reach global empathy in time to avoid the collapse of civilization and save the Earth” (Rifkin, 2009, p. 3).

Evolutionary Changes in Psycho-social Development: Relational Consciousness

In his work, Rifkin (2005) also draws on the psychoanalytical view of the global political economy and its history. He makes reference to Owen Barfield, the British philosopher who views history as an unfolding of human consciousnesses which can be divided in roughly three stages, which dovetail with Freud’s theory of individual mental development (cited in Rifkin, 2005). In the first stage of hunter-gatherer societies, humans had little sense of self and regarded Mother Earth as a primordial mother, treating her with the same love, respect and awe as they might confer on their own tribal mothers (similar to the infant-mother relationship when the infant still feel oneness with her/his Mother).

The beginning of agriculture marked the onset of the second great period of human consciousnesses when humans in their activities of domestication of animals and land slowly began to lose the intimate participation and communion with the natural world. It is comparable to the child/adolescence/adulthood stage of psychoanalysis, when the void left by our own sense of separation from our bodily connection with our own mothers is compensated by endless substitutes - material things, ideologies, unconditional love of God, sex, various addictions - you name it. The unhappiness of the modern era and its status anxieties (de Botton, 2004) become more explicable in light of a statement given by the psychologist Norman Brown (1985, p. 297) and used by Rifkin (2005,): “The more the life of the body passes into things, the less life there is
in the body, and at the same time the increasing accumulation of things represents an ever fuller articulation of the lost life of the body” (p. 373).

Barfield suggests, however, that we are on the cusp of the third great stage of human consciousness—the stage in which we make a self-aware choice to re-participate with the body of nature. It is this new relational consciousness in which we are increasingly becoming aware of shared risk and vulnerability, and economic, social and environmental interdependencies, which leads to the emergence of process-oriented behaviour and willingness to accept contradicting realities and multicultural perspectives. In many ways, Barfield’s view reaffirms Eisler’s (1987) evolution theory of human development from the ancient, matrifocal times, via the domination system of patriarchy to the emerging partnership model between men and women; nature and humans; mind, body and soul. So, instead of denying our own mortality (so characteristic to the youth’s sense of invincibility), the current era brings about a maturity stage in which we realize that we can’t really begin to live until we accept the inevitability of our own death. But how do we come to terms with our own death and make the choice to live? Rifkin (2005, p. 374) again provides guidance:

[We do it] by making a self-aware decision to leave the death instinct behind, to no longer seek mastery, control, or domination over nature, including human nature, as a means of fending off death. Instead, accept death as part of life and make a choice to re-participate with the body of nature. Cross over from the self to the other, and reunite in an empathetic bond with the totality of relationships that together make up the Earth’s indivisible living community.

Change in the Quality of Relationships: The Circularity Paradigm and Love Ethics

Thinking back to my earliest engagement with (what I now recognise as) transmodern ideas, I would like to draw on the field of feminist writings focused on love ethics (bell hooks) and what Gloria Steinem (1993, 2004) described as the circularity paradigm. Her words (Steinem, 1993, pp. 189-190) very much resonate with the ideas elaborated above:

If we think of ourselves as circles, our goal is completion — not defeating others. Progress lies in the direction we haven’t been... Progress is appreciation. If we think of work structures as circles, excellence and cooperation are the goal—not competition. Progress becomes mutual support and connectedness. If we think of nature as a circle, then we are part of its reciprocity. Progress means interdependence. If we respect nature and each living thing as a microcosm of nature—then we respect the unique miracle of ourselves. And so we have come full circle.

The realization that human powers come from within has been translated into the political arena, producing a socio-political movement of so-called ‘sacred activism’, which reaffirms individual growth, spirituality and actions that counters contemporary global discourses of fear, alienation and disempowerment (e.g. Diamant, 2005; Fonda, 2004; Fox, 2000; Maathai, 2005; Tacey, 2004).
In many ways some of those ideas can be traced in my latest work where I put forward the poststructural concept of embodiment (Ateljevic & Swain, 2006; Ateljevic & Hall, 2007; Wilson & Ateljevic, 2008). I have argued that the poststructural perspective gives us the opportunity to engage with subtle norms and values shaping our lives in the process of which both, the normalized discourse of dehumanized structures and the resisting power of agency, can be revealed in parallel. Yet, in my deconstructions I want(ed) to remain positive and hopeful, as I have begun to be inspired by feminist work on the importance of embracing love ethics and the tracing of positive structures, changes and potentialities that give us hope and models of acting and behaving in our personal and professional lives (Ateljevic, 2005, 2006b; Ateljevic, Pritchard & Morgan, 2007). As Steinem (1993, p. 129) aptly asks:

And where is the routine study of social forms other than hierarchy, patriarchy, and competition – or even an understanding that they exist? Where are the campuses as pioneers of the powers of self-esteem and human possibilities?

Or as Erich Fromm (2006) in his renowned work of the psychoanalysis of modern political economy posed the powerful question of how almost all our energy is spent on learning how to achieve success, prestige, money and power, while the art of living and loving “which ‘only’ profits the soul, but is profitless in the modern sense, is a luxury we have no right to spend much energy on?” (Fromm, 2006, pp. 5-6).

bell hooks (2000, 2002, 2003) has particularly engaged with those ideas in her work of conceptualizing love that goes beyond the exceptional-individual phenomenon. To promote the overall cultural embrace of a global vision wherein we see our lives and our fate as intimately connected to those of everyone else on the planet, she urges both men and women to challenge the patriarchal culture of lovelessness, sexist stereotypes and dehumanization, and to engage in the art of loving for themselves and their universal humanity. She has translated those ideas particularly into the most obvious academic area of influence for the potential social change—our teaching, and in doing so has produced the concept of so-called democratic educators and a pedagogy of hope (2003). In presenting her ideas and looking at what works she urges us teachers to resist oppressive structures by exposing their dehumanization and to embrace the values that motivate progressive social change—spirit, struggle, service, love, the ideals of shared knowledge and shared learning.

In the anticipation of criticism by political economy pessimists that my discussion on love ethics is rather naive, I want to clarify my position. Being originally educated as a neo-Marxist geographer I cannot deny the dominant and overwhelming evidence of structural inequalities around the globe. However, in the process of my career I have learned to agree with the later works of Gloria Steinem and bell hooks who claim that marking oppressed difference creates the mindset of victimisation which seriously affects personal and collective confidence about oneself, hence subtly reproducing further marginalisation. For instance, I have claimed elsewhere how (early anthropological and sociological) critical voices of pessimistic views on tourism have paradoxically reproduced the notion of the passive and victimised Other (e.g., Ateljevic & Doorne, 2003, 2005). So in my hope that we can truly remake the world, I opt to focus on signs that signal a potential move in the collective consciousness. In the plethora of pessimistic views...
and bad news I leave that (admittedly important) job to others and commit myself to trace and
discover what is positive and possible in our human development potential.

Change on a Personal Level: My Engagement as a Critical Human Geographer

Reflecting upon my own trajectory as an academic and teacher, the concept of transmodernity
enables me to see my professional engagement in a new light: In the context of (what I now
recognize as) transmodern calls to “shift to a new level of consciousness, to reach a higher moral
ground… to shed our fear and give hope to each other” (Wangari Maathai, 2004—Nobel Peace
Prize lecture, p.), I have been engaged in critical work in the field of human geography and
tourism studies. Together with other critical scholars, we have been advocating an academy of
hope and a critical turn in research and practice (see Ateljevic, Pritchard & Morgan, 2007). The
objectives of this endeavour have been twofold: First, to move from a dominant business
perspective to a richer understanding of the tourism phenomenon in the broader context of
material, discursive and social practices (see for example Pritchard et al., 2007); and second, to
create a community of resistance in which we seek to transgress oppressing teaching and
research structures. Indeed we have been contesting de-humanizing academic ideologies and
practices that stifle our creativity in research (see Page, 2005; Tribe, 2003), promote a collective
fear of radical change, and entrench a culture of domination that ensures our obedience (see
Ateljevic, Pritchard & Morgan, 2007).

In our endeavours to produce transformational knowledge our academy of hope network has
been searching for strategies and practices to legitimize our professional, emotional and spiritual
responsibilities to those with whom and for whom we co-create knowledge, to our students and
also to ourselves. In doing so, we are not seeing this as some self-centered indulgence, but rather
as a necessary deconstruction of the geo-body politics of academic knowledge and its deeply
embedded destructive dichotomies and hierarchies of rational/emotional; feminine/masculine;
subject/object; internal/external; mind/body/spirit; winner/loser; dominant/passive; man/nature;
and agency/structure/resistance. We are seeking to examine not just the world as it is, but to
reflect on the world as we make it.

Final Reflections

In this paper I have engaged with a broad range of literature that provides us with many
signals and evidence of an emerging and significant paradigm shift in our human evolution. In
line with the synchronicity phenomenon of universal seemingly unconnected coincidences
(Jarowski, 1996), the preceding discussion has clearly shown that while many different labels
and models exist to describe the global shift in culture, consciousness, society, economics,
politics, and human relations, they all similarly point to the same intuitive aspirations for
inclusivity, diversity, partnership, sacredness and quality of life, sustainability, universal human
rights, the rights of nature and peace on Earth. In other words, different authors use many terms
to capture the main forces behind the potentiality of creating the new transmodern world—the
reflective/living-systems paradigm (Elgin, 1997); the partnership model of caring economics
(Eisler, 2002); the relational global consciousness of biosphere politics (Rifkin, 2009); love
ethics (hooks, 2002); the circularity paradigm of interdependence (Steinem, 1993). Echoing
Riane Eisler’s argument that the limited global awareness of this world-wide movement is due to
the lack of a unifying name and centralised coordination, I propose to use the notion of transmodernity as an umbrella term that can lift disciplinary attention given to phenomena of change to a broader cross-boundary awareness of the large scale societal shifts that herald the coming era of transmodernity.

This call for a unified approach is not merely motivated by a wish to advance theory, but by my deeply felt desire to enlighten practice. Transmodernity gives us the necessary political and epistemological position to transcend all (post)essentialist contradictions and treatments of race, gender, tradition, culture, economy, and so on and to provide us with a theorization that can give us a ground zero of *biosphere politics* with no inherent domination and superiority of one over another. Once the grounds of shared risk, vulnerability, and interconnectedness of all humans occupying our Earth are acknowledged, a true dialogue without patronising can be created.

In conveying good news however, I do not deny the harsh reality of structural inequalities around the world and my own privileged position in it—to speak, to write and to live comfortably. Yet, it wasn’t always like that. As a person who experienced the Balkan war in the 1990s and subsequent displacement with its all challenges during which I encountered both beautiful human support and random discrimination I attest to the powers of positive mindset and human compassion which helps one to empower and to get empowered. In the light of my own experience I want to promote values of wisdom and compassion and individual powers to make a difference and in doing so to point to the possibilities of creating unity by celebrating diversity, which I believe represents the only way to the sustainable future of humanity.

**References**


Ateljevic, I., & Swain, M. (2006). Embodying tourism research: Gender performance among Sani and Bai women in Yunnan’s ethnic tourism. Presentation at the CAUTHE International Tourism Conference. 6th – 9th of February, Victoria University, Melbourne, Australia.


Søren Brier

Abstract: Cybersemiotics constructs a non-reductionist framework in order to integrate third person knowledge from the exact sciences and the life sciences with first person knowledge described as the qualities of feeling in humanities and second person intersubjective knowledge of the partly linguistic communicative interactions, on which the social and cultural aspects of reality are based. The modern view of the universe as made through evolution in irreversible time, forces us to view man as a product of evolution and therefore an observer from inside the universe. This changes the way we conceptualize the problem and the role of consciousness in nature and culture. The theory of evolution forces us to conceive the natural and social sciences as well as the humanities together in one theoretical framework of unrestricted or absolute naturalism, where consciousness as well as culture is part of nature. But the theories of the phenomenological life world and the hermeneutics of the meaning of communication seem to defy classical scientific explanations. The humanities therefore send another insight the opposite way down the evolutionary ladder, with questions like: What is the role of consciousness, signs and meaning in the development of our knowledge about evolution? Phenomenology and hermeneutics show the sciences that their prerequisites are embodied living conscious beings imbued with meaningful language and with a culture. One can see the world view that emerges from the work of the sciences as a reconstruction back into time of our present ecological and evolutionary self-understanding as semiotic intersubjective conscious cultural and historical creatures, but unable to handle the aspects of meaning and conscious awareness and therefore leaving it out of the story. Cybersemiotics proposes to solve the dualistic paradox by starting in the middle with semiotic cognition and communication as a basic sort of reality in which all our knowledge is created and then suggests that knowledge develops into four aspects of human reality: Our surrounding nature described by the physical and chemical natural sciences, our corporality described by the life sciences such as biology and medicine, our inner world of subjective experience described by phenomenologically based investigations and our social world described by the social sciences. I call this alternative model to the positivistic hierarchy the cybersemiotic star. The article explains the new understanding of Wissenschaft that emerges from Peirce’s and Luhmann’s conceptions.

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An Overview of the Flow of the Argumentation in the Article

I begin with a brief introduction to my view of scientific thinking on deep theories and a few words about the limitation of the word ‘science’ in the English language and my proposal to use the German transdisciplinary term ‘Wissenschaft’, which includes qualitative research into meaning. I argue that it is vital to include the meaning aspect of reality when we deal with information, cognition and communication research. I will then briefly introduce my cybersemiotic visual model for organizing the exact, the life and the social science as well as the humanities in a framework shaped as a star with four different arms, a framework which I propose as an alternative to the positivistic ‘unity of science’ idea based on physics as model science and its modern version found in E. O. Wilson’s ‘consilience’ model. Cybersemiotics is a vision of how to integrate truth and meaning as well as the empirical and the experiential aspects of knowing in one pragmatic and semiotic view of the collective production of knowledge. I will then explain the phenomenological model behind Peirce’s phaneroscopically based semiotics. I briefly introduce his three categories and his idea of a philosophical foundation for a reflected cenoscopic science. I then briefly explain Maturana and Varela’s idea of autopoiesis and after that try to show how Luhmann’s triple autopoietic systems view of socio-communication has a reflected pragmatic and realistic grounding that fits in with and supplements Peirce’s philosophy. I go on to explain the development of biosemiotics as an attempt to build a semiotic link from the life sciences to the social sciences and humanities through an evolutionary and ecological semiotic view. As the pan-informational and pan-computational philosophy tends to be more and more dominating, I find it necessary to explain how Peirce’s philosophy, which he calls pragmaticism, can be seen as an alternative. As Peirce lived a hundred years ago, my argument draws on modern American philosophers like Sellers, McDowell and Brandom.

Since Plato’s philosophy of a world of ideas and universal concepts was confronted by modern empiricism’s belief in material facts, the discussion on inter- and transdisciplinarity has been about what is most real: matter, forces, form or universal concepts. The possibility of transdisciplinarity therefore rests on our ability to define a reality that includes them all. Peirce’s suggestion of a scholastic realism inspired by Duns Scotus is such an attempt and I shall try to explain what it is all about. Peirce introduces time and possibility to enlarge our view of reality. What is, and what has been only cover the part of actuality, which is based on the past. There are, however, also would be’s dealing with probabilities. Peirce – like Popper and Prigogine – views possibilities as real and includes them in his category of Firstness. But they are also the basis for habits or what Peirce calls Thirdness. Peirce distinguishes between what is real and what exists. The only form of existence as such is what he calls ‘thiness’ (haecceity), which is his category of Secondness. It is this triadic processual understanding of semiotics that distinguishes Peirce’s semiotics from Saussurian semiology and makes the idea of biosemiotics possible. I then try to visualize how we may combine biosemiotics’ idea of endosemiotics creating the biological self and its exosemiotic communication theories with Luhmann’s triadic autopoiesis model of communication. This is done in order to give a first overview of the cybersemiotic idea and to explain how the integration of semiotics and system theory offers a more plausible model of
evolution that can explain the emergence of mind. The article concludes by suggesting a new model of five ontological levels and a changed view of the reality of nature.

A New Foundation for the Sciences\(^2\) and Humanities

Cybersemiotics proposes a new transdisciplinary framework integrating Peirce’ triadic semiotics with a cybernetic view of information on the basis of an ontology of emptiness. It is an attempt to give a transdisciplinary solution to C.P. Snow’s two-culture problem. The proposed framework offers an integrative multi- and transdisciplinary approach, which uses meaning as the overarching principle for grasping the complex area of cybernetic information science for nature and machines AND the semiotics of all living system’s cognition, communication, and culture. Cybersemiotics is an integrated transdisciplinary philosophy of science allowing us to perform our multidisciplinary research, since it is concerned not only with cybernetics and Peircean semiotics, but also with informational, biological, psychological and social sciences. In order to incorporate the sociological disciplines and contributions from multiple areas of applied research cybersemiotics draws extensively on Luhmann’s theories.

We are thus immersed in conscious and unconscious communication forms, verbal as well as non-verbal. As the linguistic turn argues, we cannot escape language, nor culture and power. Even science becomes a social construction, which is historically true, since science is a relatively recent phenomenon in the history of man. Empirical and mathematically grounded science is a modern invention that started in the Renaissance. Scientific knowledge has formed our rationality and cultural outlook on the world since then and right up to the global discussion these days about the reality of global warming.

And yet science is still faced with the problem of meaning. The background of cybersemiotics is the recognition that Western philosophy of science is in a state of crisis. Western culture is at a turning point when it comes to taking the final step into a knowledge culture based on information and communication technology. Rather than basing our culture on the conception that the highest goal of knowledge is an abstract, non-embodied and globally available (artificial, impersonal) intelligence of information programs, I believe that we should ground our culture(s) on embodied human living (personal as well as interpersonal), i.e. on semiotic intelligence as part of both living nature and human culture, rather than only on the physical science and the worldview behind it.

The current dominant objectivist science, which to me includes physicalism, eliminative materialism, cognitive sciences based on the information processing paradigm, cannot encompass self-aware consciousness and social-communicative meaning as causal agents in nature. Current cognitive science attempts to explain human communication from the outside without recognizing the phenomenological and hermeneutical aspects of existence. Its conception of human (meaningful) language and communication as a sort of culturally developed program for social information processing between computational brains/ minds cannot explain the evolution of embodied consciousness and (meaningful) human language and communication.

\(^2\) For me the concept ‘sciences’ refer to natural, life, technical as well as social sciences. With a background in biology I consider the life sciences to assume a different ontology from that of physics and chemistry, which do not operate on the premise of life as biology does.
Cybersemiotics offers a new ontology that can encompass a moderate version of the ontologies of all four dimensions or spheres.

Inspired by the methodology of critical realism (Bhaskar, 1997, 1998) and Bourdieu (Bourdieu and Wacquant, 1992), I believe that our common sense only shows us the surface of reality, and that it is the task of the sciences to dig deeper and look further than our common sense assumptions. I agree with Gadamer (1989) that our cultural history is also a development of our knowledge about ourselves, society and nature forming a common knowledge horizon.

Therefore I agree with Karl Popper that it is the role of scientists and philosophers to boldly invent new ways of looking at reality, knowledge and ourselves. Take for instance Einstein and Bohr, who forever changed the way we understand matter, energy, time, space and knowledge, or Norbert Wiener who introduced information as a basic ontological component in his transdisciplinary cybernetic worldview.

I see the semiotic philosopher C. S. Peirce (1839-1914, see his collected papers: Peirce 1931-1935) as such a bold inventor, one who had important and profound ideas about the development of human knowledge development long before Karl Popper (1960, 1962, 1972, 1974, and 1976) and Roy Bhaskar (1997, 1998) published their theories. Peirce created a whole structure of philosophy, science and humanities through his semiotic philosophy (inspired by Duns Scotus and Kant), which includes a transdisciplinary theory of meaning, signification and communication. In a somewhat supplementing vein Niklas Luhmann (1990, 1995) – originally inspired by Talcott Parsons’ (1902 –1979) structural functionalism – developed a social system theory that views social communication as the basic reality of society and integrates the psychic and the biological autopoietic systems. Luhmann borrows the concept of autopoiesis from the cybernetic biologists Humberto Maturana (1983, 1988a, 1988b) and Francisco Varela (1980, 1986).

It is my view that these two interdisciplinary theories may be combined into a transdisciplinary framework that I call cybersemiotics. I firmly believe that cybersemiotics constitutes a realistic foundation for a comprehensive understanding of the natural, life and social sciences as well as humanities and that it can provide a deeper understanding of the differences in the knowledge types they produce and show why each and every one is necessary.

By establishing this new framework, I also hope to create a transdisciplinary approach which transcends the incommensurability between C.P. Snow's two cultures: science-technology versus the humanities and the social sciences. I am trying to draw up a map onto which a multitude of viewpoints can be plotted and their subject areas characterized and compared with other approaches. In doing so, I hope to expand the dialogue between the exact sciences, the humanities, the social sciences and philosophy. A more comprehensive and further argued version of cybersemiotics can be found in the foundational book Cybersemiotics: Why Information Is Not Enough (Brier, 2006) as well as later articles on the subject (Brier, 2007, 2008a, 2008b, 2008c, 2008d, 2009a, 2009b, 2010, 2011).
The Four Views of the Cybersemiotic Star

My theory and philosophy of science (Brier 2006) is that in a total naturalism the four basic approaches to understanding provided by the exact natural sciences, the life sciences, the phenomenological-hermeneutic humanities and the discursive view of sociology: cognition, communication, meaning and consciousness are all equally fundamental but need to be united in a transdisciplinary theory of information, semiotics, embodied consciousness and intersubjective communication. The cybersemiotic star in figure 1 is a visual model of this theory at the core of which we find the autopoietic semiotic praxis from which our knowledge springs.

Figure 1: The cybersemiotic star: A diagram of how the communicative social system of embodied minds’ develops four main areas of knowledge. Physical nature is usually explained ontologically as originating in energy, matter and information. Living systems are seen as emerging from the development of life processes (such as the first cell). Social culture is explained as founded on the development of meaning and power in language and practical habits, and our inner mental world is explained as deriving from the development of our individual life world and consciousness, where consciousness is a given unexplainable fact.

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3 I have been teaching interdisciplinary philosophy of science in several universities, programs and levels over the last 30 years.
This transdisciplinary framework posits, firstly, that in order to produce intersubjective knowledge as Wissenschaft⁴ it is necessary to accept the reality of language, autopoietic embodied minds, culture, and non-cultural environment, and, secondly, that the discussion about transdisciplinary knowledge takes place in a semiotic-linguistic discourse with other embodied and linguistically informed consciousness beings in a common praxis combining non-cultural and cultural signification spheres.

The Center of the Star

From this intersubjective interaction springs four main spheres of knowledge interests, which each attempts to explain all of reality. The primary type of knowing⁵ seems to be the first person knowledge interest based in the origin and function of experiential mind and subjectivity. The approach taken from “the inside”⁶ is in Western culture the phenomenological investigating of the “life-world” (Lebenswelt) in a Husserlian phenomenology (Husserl, 1970, 1997, 1999), or Peirce’s version (Peirce, 1931-1935), on which he bases his semiotic and which he calls phaneroscopy (Spiegelberg, 1965⁷). When the experiential worlds interact with others they create the intersubjective signification spheres that we call cultures. When we study socio-communication and acting from the point of language, we are using meaningful language to perform the act of studying other meaningful languages. As von Foerster (1988) writes, everything said by an observer is said to another observer. Furthermore, Wittgenstein (1958) argues then there are no private languages or language games, to which we can add that there are no private sign games, either, and that all knowledge comes to us through signs. This is the pragmaticist semiotic foundation of my transdisciplinary alternative to the notion of unity of science which the logical positivists derived from their view of physics as a model science. Instead of a hierarchy we have a star with a pragmaticist sign system theory in the middle accepting the language turn, without giving up any type of realism. It is important to acknowledge that neither Peirce nor Luhmann are ontologically radical constructivists (Rasch, 2012). Like Peirce, Luhmann considers reality as the precondition of all knowledge production. But knowledge is knowledge, not reality in itself.

In the first person approach, which is usually called phenomenological, but which we here with Pierce will call phaneroscopic, we deal with impressions and expressions of consciousness as the processes of sense experience and thinking in a state before sciences divided the world into subjects and objects. Merleau-Ponty (1962, p. vii) writes:

Phenomenology is the study of essences; and according to it, all problems amount to finding definitions of essences: the essence of perception, or the essence of consciousness,

⁴ As ‘science’ tends to be understood as only the exact natural sciences I was looking for a concept that could encompass the exact, the life and the social sciences as well as the humanities in one word. This is exactly what the German concept Wissenschaft does.
⁵ Knowledge as a process.
⁶ An expression they would not accept as it assumes an outside as fundamental as consciousness and therefore constructs a radical dualism like Descartes, the critical analysis of which Husserl used to create the paradigm of phenomenology (Husserl, 1999).
⁷ Spiegelberg’s two volumes form one of the major historical accounts of the phenomenological movement in Europe and America.
for example. But phenomenology is also a philosophy which puts essences back into existence, and does not expect to arrive at an understanding of man and the world from any starting point other than that of their ‘facticity’. It is a transcendental philosophy which places in abeyance the assertions arising out of the natural attitude, the better to understand them; but it is also a philosophy for which the world is always ‘already there’ before reflection begins—as ‘an inalienable presence’; and all its efforts are concentrated upon re-achieving a direct and primitive contact with the world, and endowing that contact with a philosophical status.

Phenomenology holds that conscious experience, in both its subjective and intersubjective versions, comes before science, and is therefore not something that is in need of or can possibly be explained scientifically (from a materialistic or informationalistic point of view). This is in direct confrontation with scientism and the physicalist philosophy that empirically based scientific knowledge is the sole foundation of a rational world view. No one has in a short form expressed it more clearly than Merleau-Ponty who in the following quote views the natural as well as the social sciences as secondary to the phenomenological stance:

Science has not and never will have, by its nature, the same significance qua form of being as the world which we perceive, for the simple reason that it is a rationale or explanation of that world. I am not a ‘living creature’ nor even a ‘man’, nor again even ‘a consciousness’ endowed with all the characteristics which zoology, social anatomy or inductive psychology recognize in these various products of the natural or historical process. I am the absolute source, my existence does not stem from my antecedents, from my physical and social environment; instead it moves out towards them and sustains them, for I alone bring into being for myself … the tradition which I elect to carry on. (Merleau-Ponty, 1962, p. ix)

What Merleau-Ponty describes here is the subjective and intersubjectively shared first person experiential consciousness, as its own first cause, which for Peirce is semiotically based. Neither Peirce nor Husserl view consciousness as primarily a product of the brain or of culture and language. All perception is embedded in consciousness even in such rudimentary form as pure feeling in Firstness. This basic phenomenological position is shared by Edmund Husserl, Maurice Merleau-Ponty and Charles Sanders Peirce’s (Spiegelberg, 1965) and the latter’s development of a triadic phaneroscopy is the point of departure for his semiotics. Here is one of his foundational formulations:

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8 I find these three authors most relevant for the problem I want to discuss here, and there are multiple references in the reference list to these writers, which I have selected as the most interesting defenders of the phenomenological transdisciplinary view. I am well aware that there is a multitude of others, too.

9 When analyzing Peirce’s work it is clear that his three categories are foundational to his whole semiotic and pragmaticist paradigm and that they were developed over many years. Pierce attempted to prove mathematically that triadic relations cannot be broken down to duals, but it has never been widely accepted that he managed to do so. However, I find the phenomenological argumentation very convincing and these days supported by many other developments in science. The fundamentality of the triadic thinking is the reason why many scholars have been reluctant to accept Peirce’s paradigm. But one should not under-estimate the extent to which deep reflections of logic - including the logic of relations, time, reality, continuity, the moment, perception and meaning - are connected to this path-breaking invention of Pierce. Joseph J. Esposito (1980) *Evolutionary Metaphysics: The development of Peirce’s Theory of Categories* describes this quest in a most profound way.
Phaneroscopy is the description of the \textit{phaneron}; and by the \textit{phaneron} I mean the collective total of all that is in any way or in any sense present to the mind, quite regardless of whether it corresponds to any real thing or not. If you ask present \textit{when}, and to \textit{whose} mind, I reply that I leave these questions unanswered, never having entertained a doubt that those features of the phaneron that I have found in my mind are present at all times and to all minds. So far as I have developed this science of phaneroscopy, it is occupied with the formal elements of the phaneron. (Peirce, CP\textsuperscript{10}, 1.289)

The formal phaneroscopic elements inspired from pure (abstract) mathematics can then be derived from the combination of a phenomenological and a mathematical analysis:

It seems, then, that the true categories of consciousness are: first, feeling, the consciousness which can be included with an instant of time, passive consciousness of quality, without recognition or analysis; second, consciousness of an interruption into the field of consciousness, sense of resistance, of an external fact, of another something; third, synthetic consciousness, binding time together, sense of learning, thought. (Peirce, CP 1.377)

Peirce’s phaneroscopy differs from Husserl’s phenomenology by assuming a theory of mind and matter as a continuum. Peirce is a synechist and sees continua as fundamental. One way to explain the continua between mind and matter is to see mind as partly hidden inside matter; another way would be to say that the “beginning” of physics is not the only one, as physics’ grand story does not seem able to explain experiential consciousness nor existential or sociocultural meaning. Peirce also realizes that, as it is done in Husserlian phenomenology, we have to take seriously the observing and knowing ability of the human animal before it started making science. It is the prerequisite we must recognize before we can make any evaluation of scientific knowledge. Deely (1990) argues that Peircean semiotics is a perspective that arises from the attempt to create a ground common to all methods or, one could say, before all methods. From this point of view, it becomes clear that Peircean semiotics is a doctrine of the study of the action of signs. It is what he calls a \textit{cenoscopic} science.

Peirce (CP 1.181) divided the sciences into three types: 1. A science of discovery, 2. A science of review, and 3. Practical sciences. It is within the sciences of discovery that we find the concept of “cenosity.” Peirce divides the science of discovery into three subtypes: (1) (Pure) mathematics, understood as that science which draws necessary conclusions about hypothetical objects; and (2) cenosity, which he also calls primary philosophy and which is about all positively perceived phenomena in general (inner or outer) that confront a person at every waking moment. This is where Peirce places his phaneroscopy. Finally the (3) idioscopic sciences, which is his name for the special or positive sciences. They have the purpose of discovering new phenomena through observation and experiments. Peirce (CP 1.288) also states:

Cenoscopic science, with its philosophical reflections, precedes the special or idioscopic sciences and is the place from where their individual contributions to man’s knowledge of himself and the world should be evaluated and reflected upon.

\textsuperscript{10} CP stands conventionally for Collected Papers, which can be found as Peirce (1931-) in the reference list. The first digit is for the book number, the following number refers to a paragraph.
Thus, this article is cenoscopic in genre.

What distinguishes Peirce’s phaneroscopy from Husserl’s phenomenology is that not all elements in the phaneron are studied. Phaneroscopy focuses only on the elements that are indecomposable in a sort of pure mathematical and logical reflection. These indecomposable phaneroscopic elements exemplify the most basic universal categories for perception and cognition and therefore become philosophically foundational. Peirce explains more about them in this quote:

Of the three Universes of Experience familiar to us all, the first comprises all mere Ideas, those airy nothings to which the mind of poet, pure mathematician, or another might give local habitation and a name within that mind. Their very airy-nothingness, the fact that their Being consists in mere capability of getting thought, not in anybody's actually thinking them, saves their Reality. The second Universe is that of the Brute Actuality of things and facts. I am confident that their Being consists in reactions against Brute forces, notwithstanding objections redoubtable until they are closely and fairly examined. The third Universe comprises everything whose being consists in active power to establish connections between different objects, especially between objects in different Universes. Such is everything which is essentially a Sign – not the mere body of the Sign, which is not essentially such, but, so to speak, the Sign’s Soul, which has its Being in its power of serving as intermediary between its Object and a Mind. Such, too, is a living consciousness, and such the life, the power of growth, of a plant. Such is a living constitution – a daily newspaper, a great fortune, a social ‘movement.’ (Peirce, CP 6. 455)

The dynamic interactions between these three categories brings forth the triadic sign, where the representamen is a type of Firstness, the object is a type of Secondness and the interpretant is a type of Thirdness. Together they produce meaning in all the living sign-producing beings in the form of primary modeling as a signification sphere (or animal life world) and a secondary modeling in the form of sign games (cf. Cobley, 2010b).

In humans, a grammatically ordered generative system of signs obtains a special social function as the type of modeling system we call “natural language.” Language emerged as an evolutionary adaptation over two million years ago. Maybe it started as a mute semiotic modeling system in Homo Habilis (Sebeok & Danesi, 2000). Peirce’s semiotics is a kind of double hypothetical realism, since he believes in a reality that is partly independent from the observer. At the same time he is keenly aware of the fact that the embodied observer is a product of this same reality, which thus anchors the result of scientific investigations in a realist evolutionary framework including an ontological place for the phaneroscopic first person experience (Turisi, 1997). A solution to this is attempted in the cybersemiotic star. This view eliminates a pure materialistic and deterministic ontology and places meaning as a central part of reality as in Luhmann’s paradigm (Stäheli, 2012). This is why Luhmann’s theory belongs in the middle of the model integrated with Peirce’s theory.

Luhmann, was – as briefly mentioned above – inspired by Maturana and Varela’s biological theory of autopoiesis. He extended their autopoietic model to the psychological as well as the socio-communicative level. Luhmann (1990) proposes a triple autopoiesis model, where both the biologic and psychic systems are silent and only the socio-communicative autopoietic system can
communicate. Biological autopoiesis functions in the medium of life whereas psychic autopoiesis and the socio-communicative autopoiesis both function in the medium of meaning. Thus communication consists of autopoietic systems. This is demonstrated in Luhmann’s provocative punch line: “Only communication communicates!” He sees communication as an autopoietic self-organized complex system. Communication is not subjects exchanging objective information! Luhmann (1995, p.149) defines communications as

a completely independent, autonomous, self-referentially closed selection, a mode of constantly changing the forms of meaning material, of reshaping freedom into freedom under changing conditions, whereby (given the premise that the environment is complex enough and not ordered as pure randomness) experiences of reliability gradually accrue and are then re-included in the process. Thus a meaning world emerges through epigenetic evolution that makes possible communication that is less probable.

Science has shown us that reality is very complex and that the data we have collected empirically can be interpreted in many ways. There are many valid interpretations and none can be taken for granted. We cannot expect a common worldview. We have to negotiate a mutual understanding to find a common working definition. Luhmann (1995, p. 147) writes:

If one conceptualizes communication as the synthesis of three selections, as the unity of information, utterance, and understanding, then communication is realized if and to the extent that understanding comes about. Everything else happens "outside" the unity of an elemental communication and presupposes it. This is especially true for a fourth type of selection: for the acceptance or rejection of the specific meaning that was communicated.

We are thus immersed in conscious and unconscious communication forms be they verbal or non-verbal. As the linguistic turn argues, we cannot ‘get out’ of language, nor culture and power. Semiotics furthermore says that we cannot escape from the world of signs as it is also the medium of our cognition.

Peirce’s semiotics concords with Luhmann’s system theory, Popper’s critical rationalism and Bhaskar’s critical realism in that it sees humans as able to create knowledge together in a synergy of language and praxis. But these views are not entirely constructivist because they recognise the empirical testing of theories and that our own cognition has its roots – through evolution – in the very same reality we are investigating. This synechistic unity with the rest of reality – which in Peirce’s semiotic philosophy comes about primarily through signs, not matter – has considerable influence on forming the viability of our scientific knowledge.

Though we need to believe in an ultimate truth and to have truth as an ethical commitment in Wissenschaft we are also aware that there can be no final proof of our knowledge being a universal true statement or model. The belief in truth as a goal for Wissenschaft is, as Kant says, “a regulative idea”, without which the whole endeavour would collapse. Thus the cybersemiotic star model has a constructing movement going one way from the social and phenomenological aspects and on the other hand empirical perturbations from the pragmatic aspect of reality going the other. These two movements interact through time like breathing and develop our knowledge system towards being more and more encompassing.
The Arms of the Star

It is interesting to note that there are four forms of historical explanation going on in the cybersemiotic star model: 1. The cosmological, 2. The biological evolutionary, 3. The social-historical, and 4. The personal-subjective. Each attempts to explain the whole reality from its own time perspective. The natural sciences for instance work towards making one grand historical explanation from matter over life to consciousness and cultural meaning. But so far we have not cracked the problem of the emergence of life and consciousness in evolution from a bottom up model (Laughlin, 2005).

This is why one of my central claims is that the natural sciences cannot stand alone as a kind of absolute knowledge ignoring the results of the social sciences and the humanities. Barrow (2007) is one of the scientists that discuss the limits of the attempts – mostly within physics – to produce theories of everything. Thus the problem this article addresses is how to make a new paradigmatic foundation that would enable us to integrate the knowledge of the study of embodied consciousness from the exact, as well as the life sciences, the social sciences and the humanities, without reducing one set of results to another. The idea is to avoid all types of reductionism, from scientistic to radical constructivist reductionism.

Consciousness seems to be a transdisciplinary problem because, among other things, it is the prerequisite of all Wissenschaft. Thus, like McGinn (2000), I think that the hard problem of consciousness is what we can actually know about our own knowing and experiencing and it is therefore also about the limits of scientific explanation. According to the analysis above I do not think that a “science of consciousness” is possible in the form in which we know science today. A new and more transdisciplinary foundation for Wissenschaft needs to be constructed. We might therefore have to accept that an all-encompassing explanation of the conscious meaningful human communication process cannot be provided from any of the corners of the model. The crucial change in outlook brought about by this transdisciplinary framework is that in the end we cannot expect to be able to reduce our scientific explanations to one grand story. We must accept that we shall have to juggle with all four different aspects at the same time.

A radical social constructivist or ‘strong’ Marxist paradigm attempting to explain it all from the foundation of the social will meet with problems of integrating knowledge from both the exact and the life sciences. Thus the price for transdisciplinary co-existence or even integration is the relativizing of the overall importance of the approaches from each arm of the model! The new foundation for knowing and knowledge will not be physics, biology, the social or the phenomenological but the semiotic and autopoietically organized cognition and intersubjective communication understood from the perspective of a pragmatic, critical realism. In the following, I will develop the semiotic and system theory foundation of such a new view.

The Development of Communication in Humans

Cognition and communication are socially distributed, bio-physically embodied and culturally embedded, and there is an integration of the praxis of communication with the praxis of living, of language games with life forms, and of communicative competence with a general socio-cultural
competence. An instrumental-pragmatic view of linguistic communication conceives of the development of linguistic-symbolic behavior and the use of tools (technology) as co-evolutionary. Donald (1991) and Nelson (1998) believe that it all started with homo erectus’ mimetic mind and culture. It was characterized by re-presentation and re-enactional intentionality in the use of fire to cook their food, and the institution of the sharing of food among family members. This is assumed to be the start of phatic communion and the development of symbolic codes.

Mimesis can be seen as the outgrowth of the primary, proto-semiotic, reflexive stage of languaging, which is securing coordination and community in the general primate episodic mind and culture. Here we go some three million years back (Donald, 1991). Mimesis is a precursor to the symbolic stage, with its social, communicative re-enactment side and its individual, cognitive re-presentational side. Mimesis stages would be from images, over diagrams, to metaphors. According to Donald’s evolutionary theory (Donald, 1991) metaphoricity would include primitive ‘narrativity’ and he develops that theory further by arguing for the emergence of the mythic stage already in the Paleolithic epoch of the Stone Age about 35,000 years ago. Narrative skills are thus a fundamental part of the communicative competence of modern man, homo sapiens sapiens. ‘Narrative thinking’ in the form of Mythos is prior to analytic thinking, which is the characteristic of the theoretical, while empirically grounded scientific type of thinking and explanation. Meaning narratives are a prerequisite for objective science! Things, causalities and patterns have to make sense to us before we can even start to investigate truth claims about them! So, how do we integrate that knowledge, if not by including semiotics as for instance biosemiotics in our knowledge foundation?

**Semiotics: Why Choose Peirce?**

Semiotics (from the Greek word for sign) is the doctrine and science of signs, their use and how they produce and convey meaning. It is thus a more comprehensive system than language itself and can be used to understand language in relation to non-verbal forms of communication such as cognition and interpretation. One can trace the origins of semiotics to the classical Greek period (from the medical symptomology of Hippocrates) and follow important developments in the middle Ages (Deely, 2001). John Locke (re)introduces the label in the 17th century. But modern semiotics starts its development in the 19th century with Charles S. Peirce (1839-1914) and Ferdinand de Saussure (1857-1913). Saussure’s paradigm is usually called semiology. Today, however, semiotics is often used as a meta-term for both. The two researchers worked independently of each other.

Saussure never wrote a book on semiotics himself. His *Cours de Linguistique Generale* is reconstructed from students’ notes after Saussure’s death in 1913 (Saussure 1969 [1913]). Nevertheless it founded modern linguistic theory. Though semiotics is now the recognized term for the common area of Saussure’s and Peirce’s work, they differ in their conception of a sign. Saussure took the sign as the organizing concept for linguistic structure, but Saussure’s semiology is dualistic and language internal, and considers language as a self-organized system of internal differences based on a relation between sound and meaning. Its central idea is to analyze language as a formal system of differential elements. Thus, in structuralist semiotics signs do not refer to a reality outside language. Words and their meanings are defined by comparing and contrasting their meanings to one another inside the language system.
Peirce’s semiotics is triadic and incorporates an external realistic reference in that he combines a *Representamen* with an *Object* through the creation of an *Interpretant* constructed by the observing system. According to Peirce (CP 2.302), ‘we think only in signs’ and perceptions work by constructing signs. The development of semiotics into a transdisciplinary scientific field is based on Peirce’s triadic evolutionary and pragmaticist semiotics.

What Peirce attempted was to change our worldview in order to encompass the world of science and logic with the world of meaning and communication. In order to do so he created a common framework based on a triadic, evolutionary and pragmaticist theory of semiotics.11

Although semiotics emerged through efforts to investigate scientifically how signs function in culture, the 20th century has witnessed efforts to extend semiotic theory into the non-cultural realm, primarily in relation to living systems and computers. As Peirce’s semiotics is the only one that deals systematically with non-intentional signs of the body and of nature at large, it has become the main source for semiotic contemplations of the similarities and differences of signs of inorganic nature, signs of the living systems, signs of machines (Nöth 2002 and 2009), and the cultural and linguistic signs of humans living together in a society and searching for information and knowledge. Thus Peirce’ semiotics is behind the last 30 years of developing a biosemiotic theory of language communication.

**Biosemiotics: The Connection Between Meaning, Rationality and Nature**

Signs are mostly imbedded in a sign system based on codes (see below) like for instance alphabets of natural and artificial languages or ritualized behavior of animals where fixed action patterns like feeding young seagulls and grebes can acquire a sign character when used in the mating game. This last aspect from ethology was included under zoösemiotics by Thomas Sebeok in the 1960s (Sebeok 1965a, 1965b). He started to encompass animal’s species-specific communication systems and their signifying behavior under the name zoösemiotics in 1972, resulting in the book *Perspectives in Zoösemiotics*.

Later Sebeok decided that zoösemiotics rests on a more comprehensive science of biosemiotics, a name that was coined in the beginning of the 1990s (Sebeok & Umiker-Sebeok, 1992). This global conception of semiotics equates life with sign interpretation and mediation and a view of semiotic that encompasses all living systems including plants (Krampen, 1981), bacteria and cells, for instance in the human body (called *endosemiotics* by Uexküll et al, 1993). According to one standard scheme for the broad classification of organisms, five super kingdoms are now distinguished: protists, bacteria, plants, animals, and fungi, thus the major classification categories in biosemiotics are: *bacteriosemiotics, protistosemiotics, phytosemiotics, mycosemiotics*, and *zoosemiotics*. Within zoosemiotics, anthroposemiotics encompasses the traditional semiotics of language and culture chiefly inspired by Saussure, but it also builds on the foundation of the endo-

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and exo-biological levels and semiotics of the other biological kingdoms mentioned, which are not present in structuralist semiology.

Ever since Umberto Eco (1976) formulated the problem of the “semiotic threshold” keeping semiotics within the cultural sciences; semiotics – especially Peircean semiotics – has developed further into the realm of biology crossing one threshold after another into the sciences. The ethology developed by Lorenz (1970-1971) and Tinbergen (1973) from the 1920s and on (inspired by Jacob von Uexküll) has for long pointed out that animals do react to certain aspects of nature or other animals as signs to be interpreted in fixed action patterns, and that animals communicate with these signs in a ritualized form that gives some of them a symbolic character (Brier 2008a). The efforts of Thomas Sebeok (see for instance Sebeok 1965a, 1965b, 1989, 1990; Sebeok & Danesi, 2000; Sebeok & Umiker-Sebeok, 1992) and Hoffmeyer (1996, 2008), as well as Emmeche (1998; Hoffmeyer & Emmeche, 1991) have led to the development of a biosemiotics encompassing all living systems, including plants (Krampen, 1981) and micro-organisms as sign generators and users (Nöth, 2001). Many humanistic researchers find this hard to accept, and accuse Peirce of defining the concept of sign too broadly by going outside intentional communication (Sonnesson, 2009).

Resulting developments have then been used to change the scope of semiotics from only cultural communication to a theory of biosemiotics that would also encompass the cognition and communication of all living systems from the inside of cells to the whole biosphere and a theory of cybersemiotics (Brier, 2008a), which would further include a theory of information systems composed of a biological, a psychological and a social autopoietic system (Luhmann, 1990, 1995).

Biosemiotics (bios=life & semion=sign) is a growing field that studies the production, action and interpretation of signs, such as sounds, objects, smells, movements but also signs on molecular scales in an attempt to integrate the findings of biology and semiotics to form a new view of life and meaning as immanent features of the natural world. Life and genuine semiosis are seen as co-existing. The biology of recognition, memory, categorization, mimicry, learning and communication are of interest to biosemiotic researchers, together with the analysis of the application of the tools and notions of semiotics such as interpretation, semiosis, types of sign and meaning. The biosemiotic doctrine accepts non-conscious-intentional signs in humans, non-intentional signs, between animals as well as between animals and humans, and signs between organs and cells in the body and between cells in the body or in nature. Thus the biological processes between and within animals transcend the conceptual foundation of the other natural sciences. Many biosemioticians base their research on parts of Peirce’s semiotics (Brier, 2009).

There has been a well-known debate about the concepts of primary and secondary modeling systems (see e.g. Sebeok & Danesi, 2000) in linguistics that has now been changed by biosemiotics. Originally language was seen as the primary modeling system, with culture being secondary to language. But through biosemiotics Sebeok has argued that there exists a zoösemiotic system as the foundation of human language, which has to be called the primary one, thus language becomes the secondary, and culture the tertiary system. It is based on a different view of coding than the structuralist and computationalist coding.
The Biosemiotic Concept of Code

A code is a set of transformation rules whereby messages are converted from one form of representation to another like in cryptography or Morse code. Thus, code refers very broadly to everything of a more systematic nature – “rules” – that the source and the receiver must know a priori about a sign for it to correlate processes and structures between two different areas, as for instance the Morse code. But now the term code is also introduced at the level of cells because a more local concept of connecting order than universal laws was needed. The advantage of using the concept of code instead of law is that codes in contrast to universal laws only work in specific contexts, and interpretation is based on more or less conventional rules be they cultural or (here is the extension) biological, such as the DNA-code.

In the protein production system of the living cell the genome in the nucleus, the RNA molecules which goes in and out of the nucleus and is attached to the Ribosomes outside the nucleus membrane triplet can be viewed as translating genes to messenger RNA-molecules, which are then read by the Ribosome as a code for amino acids to string together in a specific sequence to make a specific protein. The cell then interprets this code of life into a three-dimensional protein that can do specific work in the environment provided by the cell, tissue or whole multicellular body. Thus Sebeok (1992) writes of the genetic code as well as of the metabolic, the neural and the verbal code. Living systems are self-organized not only on the basis of natural laws but also on codes developed in the course of evolution. The overall code will contain sub-codes grouped in hierarchies. To view something as encoded is to interpret it as-sign-ment (Sebeok, 1992). Thus, in most biosemiotics the concept of code is always connected to meaningful semiosis though not in Barbieri’s code-semiotics (Barbieri, 2001, 2008, 2011) nor in information science. Information science is built “bottom up” and is not based on concepts of meaning and interpretation.

A symbol in Peircean semiotics is a sign where the code is conventionally and arbitrarily defined. It can be a word in common language, but gestures and things like flags, presidents, and specific events like a soccer match can be symbols (here for example of national pride). Biosemioticians claim that the concept of symbol goes beyond cultures, as some animals have signs that are “shifters”. This points to the fact that their meaning changes with situations, as for instance the feeding behaviour of young adults in the Herring gull. This feeding behavior also appears as a behavioural sequence in the mating game or the head-tossing of the Herring gull, which also occurs both as a pre-coital display but also when the female is begging for food (Sebeok, 1965a).

In this case the interpretant is not the individual but the species or the breeding line. Such a transdisciplinary broadening of the concept of a symbol is a challenging development for many linguists and semioticians working only with human culture and language. For instance Zlatev (2009a, 2009b) works on developing a hierarchy of sign levels.

Life can be understood from a chemical point of view as auto-catactic, autonomous and autopoietic systems, but that does not say much about how the individual biological self and its awareness appear in the nervous systems. Hormones and transmitters do not function only on a
physical causal basis. Not even the chemical pattern fitting’s type of formal causation\textsuperscript{12} is enough to explain how sign molecules function, because their effect is conditioned by the temporal, situational and individual context. Sign molecules like hormones and neurotransmitters work also on a basis of final causation supporting a purpose in the survival of the self-organized biological self. As Sebeok (1992) points out, the mutual coding of sign molecules from the nervous system, the hormone system and the immune system is an important part of the self-organizing of a biological self, which again is in constant recursive interaction with its Umwelt (Uexküll, 1934).

From a Peircian worldview, nerve cell communication becomes the means of binding the physical efficient causation described through the concept of energy (Firstness) and the chemical formal causation described through the concept of information (Secondness) with the final causations in biological systems described through the concept of semiosis (Thirdness) (Brier, 2008a).

From a cybersemiotic point of view, information science’s bit or basic difference is only a sign if it is “a difference that makes a difference”, which at least demands the individuality of an autopoietic system. Bits working in the computer for the computer are not signs in themselves because they do not need living systems with final causation to interpret them. They work through formal causation that is the interaction through differences and patterns. The computer is a machine driven only by differences.

A cybersemiotics based on Peirce’s triadic sign, views digital information and bits merely as pre- or quasi-signs in themselves (Nöth, 2001, 2002, 2008). Codes inside a computer used by the computer is viewed as proto-sign as they are dyadic and do not require a self-organized “quasi-mind or self” to have causal effect, but work like a key in a lock. However, when we see them as encoding for language in a word processor program, they become signs to us.

Sign making is thus immanent in nature, but manifest in full triadic semiosis only within living systems. Damasio (1994, p. 128) writes that "nature appears to have built the apparatus of rationality not just on top of the apparatus of biological regulation, but also from it and with it." and dovetails with Peirce’ (1921-35) much earlier thinking on this subject. Mind cannot exist or operate at all without a body, as Merleau-Ponty emphasized. The Cartesian model of a world of pure thought is not a viable foundation for the understanding of human rationality. But something more – exactly what still seems to escape us – is necessary to produce minds, imagery and emotions. Damasio (1994, p. 89) writes:

Brains can have many intervening steps in the circuits mediating between stimulus and response, and still have no mind, if they do not meet an essential condition: the ability to display images internally and to order those images in a process called thought.

Damasio puts forward an interesting theory of ‘somatic markers’ according to which “dispositional representations” set off chains of reaction that reach deep down into the body’s accumulated experience and bring forth images of appropriate visceral content intermingled with emotional states. In turn, these states colour everything with moods that regulate our attention and interest. It is a fecund insight, which was already present in the work of Konrad Lorenz

\textsuperscript{12} As Aristotle called it.
(1970-1971, see Brier 1980, 1999, 2000, 2001), and his attempt to build the biological behavioural science of ethology. But still, neither Lorenz nor Damasio reveal how the body may produce experience as such. The most rudimentary biological cognitive processes of animals with perceptual organs involve the ability to make distinctions.

Any type of distinction must be able to sort differences that do not make a difference from differences that do in matters of life and death (Bateson, 1972). Thus the organic is not deterministic or even probabilistic. It is an autopoietic, organizational closed individual (Maturana & Varela, 1980, 1986) that is able to respond to disturbances in a cybernetic internal productive way for survival. As such the life sciences are qualitatively different from the exact science like physics and chemistry and have to be represented by their own arm in the cybersemiotic star.

Molecular biology and genetics in themselves do not explain the nature and quality of life and how the experiential qualities of living systems come about. All we know is that the computational systems we have built so far are unable to produce an experiential world. Haikonen (2009) gives a convincing analysis of the huge problem that the phenomenon of qualia poses for the design of conscious machines (see also his book on conscious machines: Haikonen, 2008).

In the literature on biological systems it has long been assumed that the use of the terms “difference”, “information”, “message”, “signal”, “communication”, “messenger”, “message”, “cue”, “code”, “sign” and “meaning” was just a practical and metaphorical shorthand form; but if so, why do these terms persist and proliferate in scientific articles? One of the starting points of biosemiotics is to take this “information talk” seriously and develop these terms into a common framework (El-Hani, Queiroz & Emmeche, 2006, 2009). The so-called central dogma in biology postulates a unidirectional flow of “information” from DNA to protein. Many scientists hoped that these terms would be effectively reduced to chemical and physical interactions, or at least viewed as computational physical informational processes. In biosemiotics, some of these phenomena are instead evaluated as embodying meaningful sign processes because genetic and biochemical information has been shown to be highly context and time dependent.

This means that “information” in biological systems is not simple objective “data”, but has to be interpreted in a situated context by the cellular or multi-cellular system in order to yield meaning. The simplest form of such semiotic process is not only the ability of single cells to categorize environmental objects from superficial properties, but also internal exchanges between organelles. E. Coli, e.g., is able to recognize carbohydrates by an active site on the macromolecule. Thus the active site stands as a code for the whole carbohydrate molecule. This makes it possible for the same kind of active site on another type of molecule, e.g. artificial sweeteners, to fool the bacteria, just like human beings are fooled by sweeteners in their unhealthy hunt for sugar. The creative capacity of molecular-biological codes to be interpreted in meaningful ways expresses a generative capacity that is beyond the terminology of the molecular-biological language. This example also shows that even at this level of life, a sign is what makes lying possible, as a sign stands for something for someone even though what it stands for need not be present.
We have here a new level of freedom, indeterminism and risk where context of living becomes vital for interpreting and survival. There is no meaning without a life context and no context determined without meaning. They are bound together by a cybernetic semiotic loop. As the organism responds to more of the present situation, it reaches deep into the future and the past as well into its own construction of its ‘signification sphere’. As these forms of anticipation unfold, variation, plasticity, versatility, and adaptability grow, and semiotic freedom emerges (Hoffmeyer, 2008) in the form of the enhanced ability to engender new concepts and cognitions that go beyond the genetically determined forms of perception in reflexes and instincts.

The basic reason for developing a biosemiotics is therefore the ontological postulate that biology is already semiotic. The living world is literally full of organic codes (Barbieri, 2001) – such as DNA, messenger and transport RNA, ribosomal RNA codes, hormones, transmitters, immunological codes and so on – and they are associated with all great events of macroevolution from the origin of proteins all the way up to the origin of embryos, the origin of mind and the origin of language Barbieri (2006). Not only does life create these semiotic capacities, it creates the capacity to create new codes with new semiotic capacities (Barbieri, 2011). Codes and signs cross the old borders between nature and culture, between causality and signification, and between interaction and communication. Biosemiotics suggests developing a reflected semiotic theory of the origin of life, agency, modeling, coding, semiosis, sense perception, conscious awareness and communication. But it is seldom truly Peircean. Kull, Deacon, Emmeche, Hoffmeyer & Stjernfelt (2010, p. 1) write about developing a biosemiotics from this viewpoint:

Theses on the semiotic study …provide a collectively formulated set of statements on what biology needs to be focused on in order to describe life as a process based on semiosis, or sign action. An aim of the biosemiotic approach is to explain how life evolves through all varieties of forms of communication and signification (including cellular adaptive behavior, animal communication, and human intellect) and to provide tools for grounding sign theories.

Thus, in the biosemiotic paradigm the primary unit of biosemiotic research is the sign, not the quark, atom or molecule. What counts as true in research is not simply given. Knowledge of facts presupposes knowledge of theories (categorizations) and of values, just as knowledge of theories and values presupposes knowledge of facts. Inquiry is never disinterested, questions of what and how and why are always intertwined. There are objective and reasonable standards that are independent of any specific human interest, but none are independent of human interest in general. Laying out principles of practical reasoning and showing how it’s universal and context dependent components work together is the proper task of pragmaticism and was central to Peirce’s (1931-1958) endeavors. Let us therefore go a little further into that by exploring the foundation for the cybersemiotic version of Wissenschaft.

The Peircean Semiotic Worldview

A sign – in its broadest Peircean definition – is then: Anything that stands for something for somebody in some respect or capacity in certain situations in a certain way. A sign – or a

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13 This is a concept of cybersemiotics to signify the Peircean reinterpretation of Jacob von Uexküll’s concept of the animal’s “Umwelt”, see Brier (1995, 2011).
Representamen – is a medium for the communication of a form in a triadic relation. The Representamen refers to its Object, which determines it and to its Interpretant, without being itself affected. The Interpretant is the interpretation in form of a more developed sign in the mind of the interpreting receiving mind or quasi mind. For an Interpretant, a Representamen could be for example a moving hand that refers to an Object (the process of waving). This is the interpretation in my mind materializing as the more developed sign ‘waving’, which is a cultural convention and therefore a symbol. All kinds of alphabets are composed of signs.

As Kultgen (1959-1960) argued, it is important to note that both Peirce (ibid) and the process philosopher Whitehead (1929) deny Kant’s (1990 [1981]) absolute distinction between nature and freedom, replacing it by a sort of process philosophy. To Peirce, nature has spontaneity and pure chance at its basis in Firstness and it has reasonability in what Peirce calls the category of Thirdness. It is an alternative to a mechanical deterministic view as in classical physics. Peirce denies Kant’s distinction between the phenomenological and the noumenal, understood as the thing in itself, because this idea of the incognizable appears as a null-term of theoretical and practical thought. To Peirce, the real is fully open to our pragmatic observation and thinking and there is no absolute difference between objects of theoretical and practical thought. Metaphysics is seen as an ideal limit of empirical enquiry (Kultgen, 1959-1960, p. 288). Thus Peirce makes a full naturalization of all possible kinds of knowing in the universe, including the subject and the intersubjective phenomena.

Peirce does not describe another world of thought or mind from the material14; only the one we are in when having experiences. Thus his view is compatible with Hans Fink’s (2006) suggestion of a new ontology, which he calls an unrestricted or absolute naturalism. Fink has developed this philosophy from important points in McDowell’s (1998) book Mind, value and reality. His view takes the philosophical consequence of the realization that all things and phenomena are developed within the universe in accordance with the evolutionary world view. Therefore we do not see culture, mind, meaning, consciousness and ethics to be outside nature. They are all natural phenomena inside nature, which concurs with Merleau-Ponty’s position (see above). What else can they be, when we do not work with an absolute dualism or any other systems that propose more or less invisible worlds outside nature?

This is a philosophical move taken also by modern American philosophers like Sellars, McDowell (1996) and Brandom15. Peirce was a great inspiration to Sellers. Like Peirce, Sellers wanted to replace the Humean version of analytic philosophy by a Kantian-inspired version. It is a move beyond classical empiricism and naturalism or from logical empiricism to logical Kantianism. Peirce, like Sellars, thought the task of philosophy was to provide a ‘synoptic’ view of how things fit together in the broadest possible sense of that term. How does our common sense outlook fit into our increasingly fine-grained scientific outlook? For example, how can we make our perception of a blue wall compatible with the same phenomenon described by particle physics?

14 Like Husserl, Peirce was not a dualist, and therefore did not work with a framework where the distinction between “inside” and “outside” was primary.
Both Peirce and Sellars saw our non-scientific ways of thinking as a prerequisite not only for knowledge but as the very basis for perception and thought. The problem is that empiricist philosophy says that our ideas come from the direct experience of things. The ‘myth of the given’ – as Sellers’ pointed out – is the claim that individual pieces of data can be known directly, that is, without any knowledge of associated concepts.

Peirce’s view is consistent with Sellars’, but he develops his explanation in the form of his three categories calling empirical observations grounded in Secondness, which only makes sense when interpreted through Thirdness. The problem is: how can I say I know what red is from the fact that some things look red to me? According to both Peirce and Sellers, in order to say anything ‘looks blue’ we would require the abstract universal concept of ‘is blue’, i.e. a concept that is not only connected to the concrete experience or things. It is a basic philosophy as well as philosophy of empirical science problem that we need universal concepts to distinguish one color from other colors, or one taste from another. This means that the model of the world out there, which empirically based science produces, lacks an integrated reflection on just that cognitive structure within our embodied mind that produced the science.

Instead, being in the world, in language, embodied in a meaningful social context, we have to start ‘in medias res’ (centre of the cybersemiotic star). We will always be bound to make some metaphysical presumptions based on our present understanding, and they will always turn out to be too limited. But Peirce’s semiotics is a solid non-reductionist framework to start from since it takes its point of departure in the semiotic mind.

Today, it is widely recognized that what we call a human being is a conscious social being living in language. In his book *The symbolic species*, Terrance Deacon (1997), sees man’s language-processing capacity as a major selective force for the human brain in the early stages of human evolution. We speak a language, but we are also spoken about by language. To a great degree, language carries our cultures as well as our theories of the world and of ourselves. As individuals, we are programmed with language or what we normally call socialized or acculturated to learn a language is to learn a culture (Durst-Andersen, 2011). As such, pre-linguistic children are only potentially human, as they have to be linguistically programmed in order to become the linguistic animal cyborgs we call human. However, getting behind language as such is difficult without creating a broader platform beyond linguistics. Peircean semiotics and its modern evolution into a biosemiotics is the attempt to build such a doctrine of cognition and communication based on the concept of knowledge in its widest sense.

The conclusion is that we live in a world of signs (the centre of the cybersemiotic star model) where objects appear when we are disturbed by certain differences or ‘Secondnesses’ – as Peirce calls them – and interpret them by connecting a representamen (a primary sign) with an object into an interpretant in our mind. Some of the objects, which our embodied cognitive experiences show us, turn out to be things.

**Scholastic Realism: A Third Way Beyond Empiricism and Constructivism**

Thus, the first impression (immediate objects) is obtained through perceptual experiences and communications with other semiotics beings. This semiotic object is then modified to a truer
picture of things and processes, Peirce’s so-called dynamic objects, of which some turn out to be things. Although Peirce may appear as a bio-psycho-social constructivist, he is in fact a dynamic realist who believes in universals, and certainly not neither a physicalist nor an idealist. He calls his stance “scholastic realism” inspired by Duns Scotus (1266 – 1308), but adds the important aspect of evolution (Boler, 1963) to the view of the scholastic thinkers. Peirce thus places his doctrine of signs somewhere between Plato and Aristotle, supplementing it with an evolutionary worldview. Susan Haack (1992, pp. 22-23) explains the point very well:

Though what exists is real, what is real may not exist; existence is reaction, interaction – the characteristic mode of being of particulars, of seconds. This is why Peirce made a distinction between scholastic realism and what he called "nominalistic Platonism" [see CP 5.503 (c.1905); 5.470 (1903); 5.503 (c.1905)]: the thesis that universals like "man" or "horses" refer to abstract particulars, to existents. Peirce objected to nominalism and conceptualism because they deny that generals are real; he objected to nominalistic Platonism because it asserts that generals exist. Peirce's position was that there are real generals, not that generals are real.

Thus Peirce’s view of reality is not at all some sort of dualistic mathematical combination of a modern physicalistic view and Platonism. The real in Peirce’s paradigm is not only external things, but also concepts! Existence is Secondness and the food for empirically based knowing. Yet Peirce does not doubt that the external is real. The existent is that which reacts against other things. The external world does not consist merely of existent objects and their reactions, since Peirce includes words, signs, general types and would-bes into what is real. Peirce (CP 8.191) writes:

Thus, for example, the real becomes that which is such as it is regardless of what you or I or any of our folks may think it to be. The external becomes that element which is such as it is regardless of what somebody thinks, feels, or does, whether about that external object or about anything else. Accordingly, the external is necessarily real, while the real may or may not be external; nor is anything absolutely external nor absolutely devoid of externality. Every assertory proposition refers to something external, and even a dream withstands us sufficiently for one description to be true of it and another not. The existent is that which reacts against other things. Consequently, the external world (that is, the world that is comparatively external) does not consist of existent objects merely, nor merely of these and their reactions; but on the contrary, its most important reals have the mode of being of what the nominalist calls "mere" words, that is, general types and would-bes.

A would-be in Peirce’s paradigm is something pointing to some kind of habitual existence in the future. If we say that a knife “is sharp”, after having cut ourselves on its blade, it means that it is likely to have that property in the future, too. Peirce (CP 8.216) sums up: “I must show that the will be’s, the actually is’s, and the have been’s are not the sum of the reals. They only cover actuality. There are besides would be’s and can be’s that are real.”

Peirce’s view is a fascinating attack on naive empiricist physicalism without an arrow of time and concept of irreversibility. Peirce’s realism is, among other things, based on his belief in Secondness, or the unexplainable or random event, which is still not a fact. There are immediate differences and resistances between phenomena or different things, which he calls haecceities.
This is the concept Duns Scotus argued for as an original principle of individuation. He saw haecceity as the ultimate unity of a unique individual (an entity's 'thisness') as opposed to the common nature (natura communis), which denotes features existing in any number of individuals. Peirce (CP 1.405) writes about this fundamental concept of secondness in his phaneroscopic semiotics:

Most systems of philosophy maintain certain facts or principles as ultimate. In truth, any fact is in one sense ultimate – that is to say, in its isolated aggressive stubbornness and individual reality. What Scotus calls the haecceities of things, the hereness and nowness of them, are indeed ultimate. Why this which is here is such as it is; how, for instance, if it happens to be a grain of sand, it came to be so small and so hard, we can ask; we can also ask how it got carried here; but the explanation in this case merely carries us back to the fact that it was once in some other place, where similar things might naturally be expected to be. Why IT, independently of its general characters, comes to have any definite place in the world is not a question to be asked; it is simply an ultimate fact. There is also another class of facts of which it is not reasonable to expect an explanation, namely, facts of indeterminacy or variety. Why one definite kind of event is frequent and another rare, is a question to be asked, but a reason for the general fact that of events some kinds are common and some rare, it would be unfair to demand. If all births took place on a given day of the week, or if there were always more on Sundays than on Mondays that would be a fact to be accounted for, but that they happen in about equal proportions on all the days requires no particular explanation. If we were to find that all the grains of sand on a certain beach separated themselves into two or more sharply discrete classes, as spherical and cubical ones, there would be something to be explained, but that they are of various sizes and shapes, of no definable character, can only be referred to the general manifoldness of nature. Indeterminacy, then, or pure firstness, and haecceity, or pure secondness, are facts not calling for and not capable of explanation. Indeterminacy affords us nothing to ask a question about; haecceity is the ultima ratio, the brutal fact that will not be questioned.

Peirce adopts Duns Scotus's term haecceity to designate the arbitrary here-and-now-ness of existence, a person or object's “this-ness”, that is, the brutal facts based on relations. Peirce identifies this haecceity as 'pure secondness'. His view of haecceities as being unexplainable as singular events is close to the modern understanding of quantum events. Quantum physics cannot deduce the singular event; it can only make a probability model from thousands of them. There is an undetermined spontaneity – which Peirce calls Firstness – of which the manifestation of the single event (as Secondness) is not explainable in itself from a scientific point of view. Only through Thirdness using a statistical model can we predict further outcomes over a series of events. Quantum mechanics breaks with classical deterministic mechanism and realizes that it has to base its laws on probability or on what Peirce from his propensity theory of probability calls ‘habits’. This is an alternative concept to the concept of an absolute and universal law in mechanical determinism.

In my view any theory of information connected to perception and communication must incorporate the original grounding of knowing in both the subjective and intersubjective semiosis of perception and emotion. Furthermore, physicalism encounters a rather fundamental problem in explaining how we can decide to move our bodies out of mere intentions or experiences (such as pain or pleasure). As such they fail to reveal anything approaching the deep connection between
mind and matter. Yet, Daniel Dennett (1987a, p. 5), in his introduction to The Intentional Stance, states: “I declare my starting point to be the objective, materialistic, third-person world of the physical sciences.” He attempts to eliminate subjective consciousness and the qualia of consciousness in his Consciousness Explained (Dennett 1991). He then attempts to explain ‘subjective’ phenomena in ‘objective’ terms. As far as I can see, none of these endeavours are feasible, since the language of physics does not include the notion of agent (agency) and meaning. It cannot capture the meaningfulness of semiosis, language and interpretation, as it is theorized to a full practical and philosophical foundation, for instance, by Hans-Georg Gadamer, who builds on Heidegger’s hermeneutic re-interpretation of Husserl’s phenomenology (Gadamer, 2004). Therefore physicalism and objective informationalism cannot be the foundation of a unified science.

Dennett contrasts his approach with that of Thomas Nagel, who views objectivity as the “view from nowhere” (Nagel, 1986), incapable of acknowledging the particular points of view of individual sentient creatures. In his famous paper ‘What is it like to be a bat?’ Nagel (1979) forcefully argues that scientific, third person, objective methods could never fully explain consciousness. I agree with Nagel in that Dennett fails to explain the objective fact of sentience and to appreciate the significance of subjectivity. He neglects subjectivity as well as the meaningfulness produced through inter-subjectivity. And yet the psychological and social aspects of reality are the prerequisites for collective and empirically based knowledge systems, on which the physical sciences rest. One cannot forget the observer when attempting to adopt a transdisciplinary and universal perspective (Nicolescu, 2002). Anyway we must realize that our presence here already limits the possible range of the physical constants upholding space-time. As conscious being existing embodied within a universe, we realize by reflection that we are bound to observe only those physical phenomena, which are compatible with the evolution of intelligent and conscious life such as ours. If not we would not be here observing. In the modern theory of multiverses (Carr, 2007) the possibility is opened for the existence of millions of other universes, which we cannot observe, because we could not survive in them or observe them from the outside, as any observer needs a universe to sustain him/ her. But it still does not explain consciousness as a derived principle from the evolution of physical systems.

This is the problem that pan-computational and pan-informational theories attempt to solve with a view of the world as a grand computer and a new concept of natural computing (Dodig-Crnkovic, 2010; Dodig-Crnkovic & Müller, 2011). Given these assumptions the view of natural computing can be expressed in this way:

1. The physical world is a network of computational processes with many levels of organization.
2. Whatever changes there are in the states of the physical world, we understand them as computation.
3. Not all kinds of computations (changes in the physical world) are best represented by the Turing model.

In my view, it is not information that is transmitted through the channel in Shannon’s theory, but signals. There is a sender and a receiver of these signals. The sender’s meaning must be interpreted by the receiver outside the transmission itself, because meaning is psycho-biologically embodied, socially embedded and enacted through language. In order for interpretation to take place, both sender and receiver must have something in common, at least a code of meaningful
interpretation, otherwise they will not understand each other. Thus the signal is actually an interpretable sign. To have a sign game in common usually implies having roughly the same kind of consciousness and body, which, in the case of a full-blown human natural language communication or a Wittgensteinian language game, needs to be embedded in a culture equipped with a worldview and an anthropology. Thus logic and understanding are two different sides of meaning. One has to learn about the culture and its mentality if one wants to understand any language.

We must further theorize how the processes of cognition and communication develop beyond their basis in the perturbation of and between closed systems and into a theory of feeling, awareness, qualia and meaning. But even quantum field theory’s spontaneous observer-independent field activity offers no help to emergence theories, even when quantum field theory is combined with an information science approach that sees information as objective structural differences in matter or between parts of matter. This ontological foundation does not solve the problem of how experience and meaningful cognition and communication emerge or manifest themselves in the world. This viewpoint leads us towards Peirce’s semiotics as a better foundation than a pan-computation paradigm to help us place experiential consciousness in a scientific worldview.

Peirce’s phaneroscopic and semiotic foundation of qualia is laid down most clearly in the following quote, which warrants careful study:

No thought in itself, then, no feeling in itself, contains any others, but is absolutely simple and unanalyzable; and to say that it is composed of other thoughts and feelings, is like saying that a movement upon a straight line is composed of the two movements of which it is the resultant; that is to say, it is a metaphor, or fiction, parallel to the truth. …Whatever is wholly incomparable with anything else is wholly inexplicable, because explanation consists in bringing things under general laws or under natural classes. Hence every thought, in so far as it is a feeling of a peculiar sort, is simply an ultimate, inexplicable fact. Yet this does not conflict with my postulate that that fact should be allowed to stand as inexplicable; for, on the one hand, we never can think, “This is present to me,” since, before we have time to make the reflection, the sensation is past, and, on the other hand, when once past, we can never bring back the quality of the feeling as it was in and for itself, or know what it was like in itself, or even discover the existence of this quality except by a corollary from our general theory of ourselves, and then not in its idiosyncrasy, but only as something present. But, as something present, feelings are all alike and require no explanation, since they contain only what is universal… Finally, no present actual thought (which is a mere feeling) has any meaning, any intellectual value; for this lies not in what is actually thought, but in what this thought may be connected with in representation by subsequent thoughts; so that the meaning of a thought is altogether something virtual. … At no one instant in my state of mind is there cognition or representation, but in the relation of my states of mind at different instants there is. In short, the Immediate (and therefore in itself unsusceptible of mediation – the Unanalyzable, the Inexplicable, the Unintellectual) runs in a continuous stream through our lives; it is the sum total of consciousness, whose mediation, which is the continuity of it, is brought about by a real effective force behind consciousness. (Peirce, CP 5.289)
It is the subjectively and inter-subjectively shared first person experiential consciousness, as its own first cause, that Peirce considers the basis of his semiotically based pragmaticist philosophy. Thus when a specific feeling or perceptual experience appears in our consciousness as something (Secondness); this Secondness is compared with another in the present or in the past (memory), thus giving rise to a Thirdness of symbolic signs, and hence language. In Peirce’s semiotics, Thirdness mediates between Secondness and the Firstness of pure feeling, process and possibility, and thus gives rise to the gradual emergence over time of signs and cognitive categories in our cultural and linguistic intersubjectivity.

Let us then sum up the differences between a semiological and a semiotic view by relating each of the two to nine different examples of signs. A sign stands for something for somebody in some aspect:

- As the word ‘blue’ stands for a certain range of color, but also has come to stand for an emotional state.
- As the flag is a sign for the nation (a symbol).
- As a shaken fist can be a sign of anger.
- As the red spots on the skin can be a sign of German measles (Rubella).
- As the wagging of a dog’s tail can be a sign of friendliness towards both dogs and humans.
- As pheromones can be a sign of heat to the other gender of the species.
- As the hormone oxytocine from the pituitary can be a sign to the cells in lactating glands of the breast to release milk.

Semiologians would usually not accept examples 4-6 as genuine signs, because they are not self-conscious and intentional human acts of communication. But Peirce’s triadic, pragmaticist, transdisciplinary, evolutionary doctrine of signs accepts not only non-consciously intentional signs in humans and between animals (ex. 5 and 6) as well as between animals and humans (ex. 5), but also non-intentional signs (ex. 4), and signs between organs and cells in the body (ex. 7) in endosemiotics as for instance as immunosemiotics dealing with the immunological code, immunological memory and recognition.

The biosemiotic view is well summarized in Jesper Hoffmeyer’s books (Hoffmeyer, 1996, 2008) and Donald Favareau’s (2010) collection of “Essential readings in biosemiotics” and as part of Brier (2008). In an interview discussing the choice between Saussurian/ Greimassian dualistic semiology and Peircean triadic semiotics, Petrilli and Ponzio (2008, sections 37-38) give convincing arguments for choosing Peirce’s semiotics:

We believe that the scope of semiotic enquiry must transcend the opposition between semioticians oriented in a Saussurean/ Hjelmslevian/ Greimassian sense and semioticians oriented in a Peircean sense. These two trends seem to require that we oppose binarism to triadism. On the contrary, we believe that the heart of the matter does not lie in the opposition between binarism and triadism, but in the opposition between a sign model that tends to oversimplify things with respect to the complex process of semiosis and a sign model (like Peirce’s) that seems to do more justice to the various aspects and factors of the process by which something is a sign. This is not merely achieved on the basis of an empty triadic form, but rather thanks to the specific contents of Peirce's triadism. In other words
Peirce's triadism works thanks to the categories it uses, the sign typology it proposes, the dynamic model it offers when it describes signs as grounded in *renvoi* from one interpretant to another. Such triadic categories as "firstness," "secondness," and "thirdness," "representamen," "interpretant," and "object," "symbolicity," "indexicality," and "iconicity," all evidence the alterity and dialogism constitutive of signs from a semiotic perspective. The merit does not go to the triadic formula. Proof for this is offered by Hegelian dialectics where triadism gives rise to metaphysical, abstract and monological dialectics abstracted from the constitutive dialogism in the life of signs.

Many researchers, among them Karl-Otto Apel (1981)\(^{16}\) and Jürgen Habermas (1987, with a somewhat strange interpretation)\(^{17}\), have been attracted by Peirce’s radically new way of thinking, and it has made a great impression on what became the Copenhagen School of biosemiotics and its members Jesper Hoffmeyer, Claus Emmeche, Frederik Stjernfelt and Søren Brier and its relation to the Tartu school of semiotics through Kalevi Kull and Timo Maran. It is this modern development of Peircean semiotics into biosemiotics that I want to integrate with Luhmann’s triple-autopoietic view of socio-communication.

**The Luhmanian Aspect**

As mentioned above, Luhmann extended the autopoietic model to the psychological as well as the socio-communicative level. Luhmann (1995) proposes a triple autopoiesis model consisting of three systems: the biological and psychic systems, which are silent, and the ‘socio-communicative’ system, which is the only one that can communicate. Biological autopoiesis

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\(^{16}\) From the book cover I quote this precise characterization: “As a mediation between theory and praxis, Apel presents pragmatism as the major rival to both existentialism and Marxism, the two other responses to the Hegelian aftermath. In the same context, Apel demonstrates the importance of Peirce's conceptual breakthroughs, in the theory of signs (semiotics) and the theory of rationality, for the challenges and possibilities of a critical theory of society.”

\(^{17}\) Habermas (1987) observes that the insight helping Peirce avoiding positivism was “his understanding that the task of methodology is not to clarify the logical structure of scientific theories but the logic of the procedure with whose aid we obtain scientific theories”. But Habermas believes that Peirce does not go far enough to be able to overcome the correspondence theory of truth completely. He ultimately succumbs to the same objectivist illusion because of his contradictory notion that the un compelled consensus among inquirers aims at technical control. Habermas (1987, p. 137) writes:

The symbolic representation of matters of fact knowable from the transcendental perspective of possible technical control serves exclusively for the transformation of expression in process of reasoning. Deduction, induction, and abduction establish relations between statements that are in principle monologic. It is possible to think in syllogism, but not to conduct a dialogue in them. I can use syllogistic reasoning to yield arguments for a discussion, but I cannot argue syllogistically with another. Insofar as the employment of symbols is constitutive for the behavioural system of instrumental action, the use of language involved is monologic. But the communication of investigators requires the use of language that is not confined to limits of technical control over objectified natural process. It arises from symbolic interaction between societal subjects who reciprocally know and recognise each other as unmistakeable individuals. This communicative action is a system of reference that cannot be reduced to the framework of instrumental action. Habermas does indeed develop this area of dialogical communicative ethics substantially, but fails to see that Peirce’s semiotics is based on a dialogic conception of mind, which is why there is actually no contradiction between the theoretical foundation of his and Peirce’s work.
functions in the medium of life and psychic, and socio-communicative autopoiesis functions in the medium of meaning. Figure 2 illustrates how Luhmann’s three autopoietic systems combine in human cognition and communication:

**Figure 2:** Three organizationally closed systems working separately make communication possible. This figure is a symbolic iconic picture of Luhmann’s basic theory and not a map of where the various systems are placed in the body. Psychological processes for example are not only in the head, but the head is used to symbolize the mind. The signification sphere is the biosemiotic term for von Uexküll’s “Umwelt” and Maturana’s (1988a, 1988b) “cognitive domain”. This model represents the first step towards an integration of Luhmann and Peirce’s theories.

My main problem is where does first person experience belong in this scheme of things? How do systems go from being functionally able to orient themselves in relation to environmental structures and other members of the species to develop sense-organs that actually produce quale sense-experiences? Most of us believe that robots do not have sense experiences. Searle (1989) argues that the secret must lie in biology. As far as we know, biological systems are the only ones to produce nervous systems and central nervous systems that create awareness, feeling, sense-experience and qualia. But biologists insist on describing their subject area in chemical and physiological terms and consider molecular biology to be the greatest advance since Darwin. The vitalism debate has ruled out any differences in the nature of the molecules inside and outside
living systems. Thus, the received view in science is that the only difference between pure physical and living biological systems is the way these inert molecules are organized.

How did the world begin, and how did the first distinction of awareness come about in the universe? The first question is asked in physics and the second in phenomenology. How to integrate those two descriptions is the key problem in the modern world’s attempt to create a coherent Wissenschaft worldview. If one then asks the foundational question: What was before the beginning of the big Bang in physics, before the first perception in phenomenology or before the first distinction or in Peircean semiotics before the first semiosis, then one is forced to answer that there is a becoming\(^{18}\), because a "before" in the ordinary understanding of time is not possible! For Peirce it is a Firstness with a tendency to form habits. Luhmann does not have any answers to give to first philosophies working as he does with second order observations. For him drawing a distinction between the observing system and its environment is the first move.

The becoming aware brings into being the descriptions that lead us to postulate self, environment etc. When becoming becomes aware and begins to make the distinction between one self, the others and the environment, an ontology will necessarily be produced as a prerequisite for the production of meaning in language communication. The concept ontology does not refer to a final and unchangeable, true picture of the world or reality. In Peirce’s view an ontology or a metaphysics is a working hypothesis of reality we test and change all the time. Nevertheless it is there all the time.

As human observers we find ourselves in language and therefore in intersubjectivity with other linguistic beings. We do not have to postulate the other(s) after becoming aware of ourselves, because they are prerequisites for our becoming aware as linguistic self-conscious beings. We live in language, so to speak, and take it with us wherever we go. We cannot speak of being without knowing: if we exist but don’t know, our existence doesn’t matter. When the becoming becomes aware in language it reflects on what it itself is and it realizes that it never becomes aware alone but only as a process embodied in flesh and language with others; this is fundamental to the definition of what it means to be human. Reality in the form of semiotic objects such as the other, language, culture and society, is established in the process of becoming aware.

My view is that you cannot generate knowledge without first accepting the reality of the other, your own body and consciousness, as well as the language you use, and second, being a radical ontological constructivist. The realization of being a part of the becoming makes us accept nature’s creativity and potential for signification and intelligence through evolution as a further prerequisite. That is a synectic realism without MIR (mind independent reality)! As soon as we accept the reality of the other and of something out there and therefore language, we move from radical constructivism of the ontological kind into a more epistemological variant much closer to pragmatism. We will also have to accept that there is some resistance in that with which we interact, be it living or not. This is what Peirce calls Secondness.

\(^{18}\) As I remember, this idea and concept of becoming appeared to me from individual discussion with Ranulph Glanville and Louis Kauffman about the columns they write to Cybernetics & Human Knowing of which I am the editor-in-chief.
But in order to understand anything at all, we need a sort of stability sustaining both that which we perceive and ourselves as embodied perceivers. This stability or habit is what Peirce calls Thirdness. Peirce’s claim is that his three categories are the minimal prerequisites for any knowledge process or semiosis to emerge in the world (Murphey, 1961). The field of potential possibilities is what Peirce calls Firstness. When asked what is before linguistic consciousness one will have to answer with Peirce that as soon there is Thirdness there is semiosis and therefore a semiotic awareness. Before that there is the pure feeling and potential qualities as virtual forms of Firstness.

Transdisciplinarity demands the development of such a new and broader framework, which will therefore offend all those researchers who prefer to stay within the received view of their own knowledge or paradigm. To choose Peirce means to accept most of his triadic pragmatist and realist view of science and his semiotic theory of cognition and communication. What also intrigues me about Peircean semiotic philosophy is that it demonstrates that the use of signs is a two-way street. We use signs to create life worlds or Umwelten as much as we use them to create models of ourselves. Peirce (CP 5.313) writes,

Man makes the word, and the word means nothing which the man has not made it mean, and that only to some man. But since man can think only by means of words or other external symbols, these might turn round and say: “You mean nothing which we have not taught you, and then only so far as you address some word as the interpretant of your thought.” In fact, therefore, men and words reciprocally educate each other; each increase of a man’s information involves and is involved by, a corresponding increase of a word’s information.

As Peirce (CP 2.222) goes on to conclude, the sign, in particular the symbol, “is a living thing, in a very strict sense that is no mere figure of speech. The body of the symbol changes slowly, but its meaning inevitably grows, incorporates new elements and throws off old ones.” Peircean biosemiotics has given a biological reinterpretation of the life phenomenon, which it is possible to integrate with Luhmann’s autopoietic system theory.

The Cybersemiotic View of Communication

Thus, what is transferring between us is made up of signs, not information. Signs have to be interpreted, and it has to happen on at least three levels, described by Luhmann’s three types of autopoiesis. On the most basic level we have the basic coordination between the bodies as a dance of black boxes to allow for meaningful exchange. This is what Maturana calls languaging. The next level consists of instinctual sign games providing drive and emotionally-based communication about meaningful things in life like mating, hunting, dominating, food seeking, territory etc. They are all well described in the science of ethology, which Lorenz, Tinbergen and von Frisch received the Nobel Prize for developing. Based on these two levels a field of meaning is created that the socio-communicative system can use as a base line to modulate conscious linguistic meaning. This is illustrated in figure 3.

Language games were what the father of modern biosemiotics, Thomas Sebeok, called tertiary modeling. He used the concept of modeling to explain life and behavior among living entities.
conceived in terms of semiosis. The concept of modeling is of fundamental importance in Sebeok’s semiotic research. He was inspired by the Moscow-Tartu school of semiotics in human communication. But Sebeok extended the concept of modeling biosemiotics at the interface between semiotics and biology (Sebeok & Danesi, 2000) as ‘the capacity of a species to produce and comprehend the specific types of models it requires for processing and codifying perceptual input in its own way’ (Sebeok & Danesi, 2000).

**Figure 3** shows the three different levels of communication systems described in cybersemiotics. At the foundation is the informational exchange of signals of orientation and other reflexes, which Maturana (1988a, 1988b) calls ‘languaging’. On the next level we find the ethological (or what below WE will call the biosemiotic) sign games of all living systems mostly within the biologically defined species, which still works for the basic biological drives in humans. Then there is the level of language interchange in dialogue between self-conscious persons, called language games after Wittgenstein’s pragmatic language philosophy.

The primary modeling system is the innate capacity for *simulative* species-specific modeling that Sebeok calls ‘language’. This is the species-specific primary modeling system of the human species. The secondary modeling system subtends both ‘indicational’ and ‘extensional’ modeling processes, of which the nonverbal form of indicational modeling has been documented in various species. But extensional modeling is a uniquely human capacity in that it presupposes *language* (which Sebeok and Danesi call the primary modeling system) and distinguishes it from *speech* (named the human secondary modeling system). The tertiary modeling system subtends highly
abstract, symbol-based modeling processes. The species-specific system that Sebeok and Danesi call the tertiary modeling systems is the human cultural system.

We also have a system of cognition levels in the organism, as well as an internal system of biosemiotic types of semiosis. Previously, we have dealt with types of exosemiotic behavior. Now, corresponding to the three levels of exosemiosis there are three levels of internal semiosis, plus a fourth interactive one (intra-semiotics). I call them 1. linguistic thought semiosis, 2. Psychological pheno-semiosis, 3. somatic endosemiotics and 4. psycho-somatic intra-semiosis. Thus, each human agent is an integrated macro-system of internal semiosis, as shown in figure 4.

**INTERNAL SEMIOSIS**

![Internal Semiosis Diagram](image)

*Figure 4: Internal semiosis. The figure shows in a symbolic way the relationship between endosemiotics and the new areas of pheno-semiotics, thought semiotics, and intrasemiotics (quoted from Brier 2006a, p.285; 2008, p. 306).*

The terms endosemiotics and exosemiotics were probably both coined by Sebeok (1976, p. 3), endosemiotics denoting the semiosis that takes place inside the organism, and exosemiotics being the sign process that occurs between organisms. Endosemiotics became a common term in semiotic discourse (see Uexküll et al, 1993) for a semiotic interaction at a purely biological level between cells, tissues and organs.

Today we know that there are semiotic interactions between the hormone system, the transmitter system and the immune system and that their interactions are very important for the
establishment of the autopoietic system of second order constructed by a multicellular organism. This autopoietic system is often called a “biological self”. Its parts are cells that are themselves autopoietic systems, which in turn are also organized in an autopoietic system. But we know very little about the relations between this system and our lived inner world of feeling, volitions and intentions. It seems that certain kinds of attention on bodily functions, such as imaging, can create physiological effects in this combined system.

The effect is partly carried by different substances that have a sign effect on organs and specific cell types in the body (endosemiotics). We also know that our hormonal level influences our sexual and maternal responses. Fear turns on a series of chemicals that change the state and reaction time of several body functions, and so on. As the interactions between the psyche and the body are bodily internal, but not purely biological as in endosemiotics, I call the semiotic aspect of this interpenetration between the biological and the psychological autopoiesis **intrasemiotics** (Brier, 2000b). These different names are coined to remind us that we deal with different kinds of semiotics. In the future, we have to study more specifically the way semiosis is created in each instance. This is a very significant part of the embodiment of our mind, but intrasemiotics seems to function as meta-patterns of endosemiotic processes. For example, our state of mind determines our body posture through the tone and tightness of our muscles. There is a subtle interplay between our perceptions, thoughts and feelings and bodily state working among other things through the reticular activation system. There is still a lot we do not know about the interaction between these systems. But the important thing to note is that we do not have any kind of absolute dualism between mind and body here, only differences in semiotic processes and interactions.

To refer to the interaction between the psyche and the linguistic system I use the term thought semiotics. This is where our culture offers us possible concepts to classify our inner state of feelings, perceptions and volitions. I call these classifications in their non-conceptual or pre-linguistic states, i.e. not yet recognized by conceptual consciousness, for phenosemiotic processes. For short I just call them **phenosemiosis**.

**A Cybersemiotic Theory of Emergence**

In my view we have not yet arrived at a well-functioning and consistent theory of emergence. See for instance El-Hani (2008), who points to the need for a shift towards a process ontology or to a Peircean semiotic philosophy as a way out of this serious problem. The more quantum physical aspects are worked out in Penrose (1995) and Stapp (2007). Baer (2010) attempts to combine quantum physics and process philosophy in his discussion of the physics of consciousness. But the lack of a good theory of emergence is a problem, as the task of such a theory is to explain how the qualities of life and sense experience and therefore qualia plus the next step to linguistic born self-consciousness in humans living in a culture can be created in the course of evolution.

I cannot deny that some computer science philosophers like Arrabales, Ledezma and Sanchis (2010) actually believe that there are small beginnings of consciousness in the form of agency in AI robots, and try to make scales to measure them. I find it highly unlikely that we are in any way near stages in development of AI and AL, where life worlds might emerge. So, the cybersemiotic view of the relation between information and semiosis is that information belongs to Secondness and must
be considered protosemiotic. When going into Thirdness, the possibility of an interpretant appears, as Peirce underlines, and as Varela (1975) shows in his calculus of self-reference.

But there are certain conditions for a system to be able to create an interpretant within our space and time frame that must be met first. One of them is the closure and self-organization of autopoiesis in a living system that is required to create an interpretant within our frame of space and time. But we probably need to add more. Hoffmeyer (1998) describes four additional steps necessary for the creation of living systems:

1. The establishment of an inside-outside asymmetry (closed surface).
2. A proto-communication over those surfaces (a community of surfaces).
3. A digital re-description in the form of DNA to carry on the form of the organism in procreation (Hoffmeyer & Emmeche, 1991, call it code-duality).
4. The formation of an interface (inside-outside loops) is essential for the creation of interpretants.

Machines lack autopoiesis, reproduction, code-duality, and an inner organization of membranes (Hoffmeyer, 1998), and thus also lack both individual-based and species-based motivation and intentionality, and consequently also the ability to establish a genuine interpretant. Therefore I believe that instead we must somehow enlarge the conceptual framework within which we conduct science, if we are to form connections with the phenomenological aspects of reality and the experiences of meaning. It is my belief as I have argued here that Peirce’s triadic semiotics deliver a possible first step towards such a solution.

On the level of organic and cognitive evolution, Hoffmeyer, in his development of a biosemiotics, has built on an approximation to Peirce’s ontology, and has suggested adding a new level of meaning to the reductionist Darwinian “survival of the fittest”. This survival idea tells us a lot about rather primitive organism, but there must be something more when it comes to more and more complicated organisms with nervous systems. Neither the maximal dissipation of entropy, nor survival is enough to explain the growth of systems with inner worlds of qualia. What is it that they acquire more of? Hoffmeyer (1996, p. 61) suggests calling it semiotic freedom and explains it this way:

The most pronounced feature of organic evolution is not the creation of a multiplicity of amazing morphological structures, but the general expansion of ‘semiotic freedom’, that is to say the increase in richness or ‘depth’ of meaning that can be communicated.

It is a crucial point that Hoffmeyer deals with here, because this is where the possibility of meaning comes into an enlarged framework, where science is also possible on a basis that is close to Prigogine’s (1996) and Prigogine & Stengers’ (1984) irreversibility and complexity theory of thermodynamics, but here adding the Peircean framework and his theory of mind. The play of signs in the freedom of consciousness becomes an attractor in cosmogony and evolution.

Connecting this idea of the free play of signs in consciousness to the problem of the emergence of emotion and inner reward in ethology that Lorenz could not solve within his standard materialistic
biological framework, and by using von Uexküll’s Umwelt-concept in an evolutionary context\textsuperscript{19}, cybersemiotics regards the Umwelt as a ‘sphere of signification’, a term which I use in a Peircean interpretive sense to refer to the primary living space (life world) created by every living system. What ecologists call the ecological niche in the habitat becomes a meaningful sphere, a signification sphere for the living system. Seen from an ecosemiotic view it is a \textit{semiotic niche}, as Hoffmeyer calls it.

The production of meaning is thus brought into what mechanicism sees as “dead” nature by the concepts of Firstness and Synechism combined with Hylozoism and the development of the universe through three different kinds of evolution:

1. \textit{Thychistic evolution} (free or random variation, sometimes called fortuitous) like Darwin’s natural selection.
2. \textit{Ananchastic evolution} (dynamic dyadic interactions, a more mechanical necessity). It comes closest to Hegel’s idea of evolution.
3. \textit{Agapastic evolution} or "evolutionary love" (combining the free variation and dyadic interactions through habit formation by the mediating ability of Thirdness). This comes closest to Lamarck’s idea of evolution (Brent, 1998, p. 215).

Life can be understood from a chemical point of view as auto-catalytic, autonomous, autopoietic systems, but that does not say much about how individual awareness appears in nervous systems. On the basis of Peirce’s philosophy, the emergence of signs and meaning in the living world is to be expected. It is also clear that the world in its vague beginnings was not created with signs as we understand them in biosemiotics, but only a tendency to make them emerge through the law of mind. This could be called a vague tendency to final causation that evolved from the tendency to form habits.

The cybersemiotic interpretation of causality based on Peirce is that efficient causation can exist on its own as Secondness, but it is often found embedded in the formal causation of pattern fitting and signals described in information science and then in the living world clearly by final causation, which becomes conscious purpose in human society. Information seen as both protosemiosis, in evolution, and quasi-semiosis, when embedded in semiotic and linguistic processes, is between the two. It is connected to formal causation and works through signals and dualities of patterns, not yet a fully triadic semiosis, but still above the brute force of efficient causation.

The Heterarchical Levels of Evolutionary Cybersemiotic Emergence

The cybersemiotic approach that I present here unites cybernetic, systemic, informational, and semiotic approaches towards self-organization, intentionality, selection of differences, and constructivism, thus avoiding solipsism and idealism. Modern systems thinking views nature as containing multilevel, multidimensional hierarchies of inter-related clusters forming a heterogeneous general hierarchy of processual structures: A heterarchy.

\textsuperscript{19} Jacob von Uexküll did not believe in evolution, so his theory did not include evolution in its foundational framework.
Levels are believed to emerge through emergent processes, when new holons appear through higher-level organization. I have been skeptical about the ability of this paradigm to account for the emergence of life and sense experience and later linguistically borne self-consciousness. But if this system and cybernetic view is placed into a Peircean framework, where living potentialities (Firstness) are processes manifested through constraints and forces (Secondness) into regularities and patterns (Thirdness) in a recursive manner from level to level, it makes much more sense. The new emergent level then acts as a potential for the development of the next level. Levels can form and dissolve when their dynamical parameters are near critical points. Stabilization requires that the system moves further from the critical point into organizing patterns, like energy wells. But one then has to accept a hylozoist view of matter as Hylé.

In hierarchies there is a filtering of lower-level effects rising from the bottom at each new emergent level. There is also a binding from the top, and the exclusion of alternative possibilities, once one path of emergence has stabilized (downward causation). Across levels, various forms of causation (efficient based on energy transfer, formal based on pattern recognition, signals, and information, and final based on meaningful purpose and thus semiotic) are more or less explicit (manifest). This leads to more or less explicit manifestations of information and semiotic meaning at the various levels in the world of energy and matter. The basic forms of causation can be seen at all levels. Material causation is basically grounded in the quantum vacuum fields. For each level of material-informational manifestation the lower level beneath it acts as its material basis.

Emergent process laws are particular to each level, allowing components to function together, and stabilizing levels in pattern-formation and structure that can be described with an objective information concept. This yields the dynamical integration that individuates each level. In the special case in which this integration involves active organizational processes we have autonomy, which creates agency through autocatalytic closure. It seems that total closure, as in autopoiesis, is important in the creation of living systems and the emergent quality of individuality laying the foundation for subjectivity. Meaning is generated through the whole heterarchy, especially through the relations of individual systems to a larger natural or social context. Thus, meaning is generated both at the individual levels of the living or humans and in social systems. But meaning is most manifest in the living systems that fulfill Hoffmeyer’s conditions. The most full-blown version of meaning involves finality in a self-conscious social-linguistic mind.

The Ontological Basis of Cybersemiotics

Information theory is now an important part of the new science of consciousness research program, but there is a lot of work to do for serious philosophy, considering how many central philosophical topics of mind, language, epistemology, and metaphysics are going to be affected by the biosemiotic development. Peircean biosemiotics may contribute to a new transdisciplinary framework for the understanding of knowledge, consciousness, meaning and communication. But to do this, new elements have to be integrated to unite the functionalistic approaches to information and communication coming from cybernetics and computer science with the semantic pragmatic approaches coming from the linguistic turn and semiotics. Concepts of closure, self-organization, and differentiation of biological, psychological, and social systems developed in second-order cybernetics and autopoiesis theory need to be integrated into theories of embodiment and Peircean biosemiotics.
Let us try to summarize and schematize the basic ontological concepts of cybersemiotics made by an integration of Peirce’s semiotic philosophy developed from Brier (2008a):

1. The first level, which physically is described as quantum vacuum fields entangled causality, is not considered physically dead as usually done in physicalistic physics, because cybersemiotics share Peirce’s phaneroscopic and synechistic basis, where physics is never a description of an independent “dead” world. This dovetails with some of the version of the anthropic principle, especially the interactive anthropic principle (Wheeler, 1964, 1998). Cybersemiotics conceives this level as a part of Firstness, which also holds qualia and pure feeling. Although physicists may be bothered by this new metaphysical understanding of this level of reality, they cannot claim that there is no room for new interpretations because physics has a complete understanding of it. On the contrary, this is one of the most mysterious levels of reality we have encountered, and its implications have been the topic of an ongoing discussion since the 1930s and were central in the disputes between Bohr and Einstein. Now the entanglement aspect of the quantum phenomena is exploited for the possibility of teleportation and the first positive results claimed (Furusawa & Loock, 2010).

2. The second level of efficient causation is what Peirce describes as Secondness. This realm is ontologically dominated by physics as classical kinematics and thermodynamics. But for Peirce it is also the willpower of mind, and in modern information science it is the differences, which, when interpreted, can become significant and meaningful.

3. The third protosemiotic level is the level of objective information, where the formal causation manifests itself clearly. This level is ontologically dominated by the chemical sciences and concepts of pattern fitting. This difference in ontological character may be one of the keys to understanding the differences between physics and chemistry. It is not only a matter of complexity but also of organization and type of predominant causality.

4. On the fourth level, where life is self-organized, the actual level of Thirdness and semiotic interactions emerge. First internally in multi-cellular organisms as ‘endosemiotics’ and between organism as ‘sign games’, this framework – based on biosemiotics – points out that the informational concept may be useful at the chemical level of analyzing life, but it is not sufficient to capture the communicative, dynamic organizational closure of living systems. This is one of the reasons why Maturana and Varela do not want to use the information concept in their explanations of the dynamics of life and introduce the concepts of autopoiesis and structural couplings. Cybersemiotics proposes to combine it with semiotics in Luhmann’s more advanced triple autopoietic systems science.

5. Finally, on the fifth level, human self-consciousness emerges through syntactic language games, and with that come rationality, logical thinking and creative inferences (intelligence). Intelligence is closely connected to abduction and conscious finality. Abduction is crucial to signification. It is the ability to see something as a sign of something else. This something else has to be a habit of nature. Some kind of regularity or stability in nature that the mind can recognize because a law of some kind is necessary for it to be a fairly stable eigen-value in the mind (an interpretant).

The cybersemiotic approach explains this through a semiotized version of Luhmann’s triple autopoietic theory of communication combined with pragmatic theories of embodied social meaning. The three levels of communication are consistent through exterior cognition as well. Figure 5 gives a visual summary of this part of cybersemiotics.
**Figure 5: Cybersemiotic model classifying different types of semiosis and proto-semiotic processes:** The model is a cybersemiotic development of Luhmann’s model shown in figure 2. The localization of the processes have nothing to do with the actual bodily locations (as the head, for instance, is also a part of the biological autopoiesis), and as such also have endosemiotic processes. To limit the complexity, I have placed all the cybernetic-autopoietic concepts on the person to the left and all the semiotic ones on the person to the right. But all concepts concern both persons. Each person is placed in a signification sphere. When these are combined through socio-communicative autopoietic language games, a common signification sphere of culture is created. One part of ecosemiotics signification is based on the linguistic processes of conceptualization and classifications. Underneath the language games level is the biological level of sign games based on instincts, and under that, the cybernetic languaging seen as the coordination of coordination of behavior (of two black boxes). Thus, ecosemiotics has a level of bio-psychological or emphatic signification, as well as a level of structural couplings, which the organism, or rather the species, has developed through evolution. Although the figure does not seem very simplified it is even more so, as it combines several simplified figures. But it functions as a tool to view the relations between the different levels of semiosis. Combining these levels of semiosis with a general systems theory of emergence, self-organization and closure/autopoiesis, it constitutes an explicit theory of how the inner world of organism is constituted and therefore how first person views are possible and as real as matter. This produces a view of nerve cell communication based on a Peircean world view tying the physical efficient causation described through the concept of energy and the chemical formal causation described through the concept of information together with the final causation in biological systems described through the concept of semiosis.
Conclusion

Thus, the semiotic, autopoietic, social and cultural communicative praxis becomes the epistemological center of our understanding of ourselves as autopoietic embodied brain-borne self-conscious intersubjective beings situated in language and environment. From this situation we develop knowledge about ourselves as conscious beings, about society, language and culture in order to understand our intersubjectivity, and knowledge about our bodily nature and finally the environment. These become the four specializing aspects of Wissenschaft. None of them are absolute in any way, as they are in an evolutionary and historical drift with our ecological and semiotic niche for survival as species and culture.

To obtain this transdisciplinary view we have had to enlarge our concept of reality to a multi-layered irreversible time dynamics in a world perfused with signs. Energy, matter and objective information are not the only elements making up this reality. Signs, concepts, life processes and subjective experience plus socio-communication – of which language and culture is a part – are at least as important. The reason is that without them, there would be no knowing, no knowledge and no Wissenschaft. Language, culture and subjectivity are objective elements and aspects of reality as inevitable as dead and living nature.

The paradox is that we need all four arms of the star in order to produce all the kinds of intersubjective knowledge we now have. Among the most important is Wissenschaft (together with politics and religion). And yet we have produced the four aspects of Wissenschaft ourselves from our embodied and conscious socio-pragmatic semiotic interactions, thus forming our own *cultural signification sphere*. The reality and viability of this meaningful sphere that every culture creates for its individual subject and for itself in the environment is being tested for viability all the time. Cultures can crash completely as the Rapa Nui culture on Easter Island, where religious and social competition may have overruled ecological concerns, when the Rapa Nui people cut down all the trees to build their devotional statues, the Moai. Once the island was deforested, the ecosystem was unable to support the human culture and it crashed in hunger and internal fights – or so we believe.²⁰ Diamond (2005) described Rapa Nui – among many other examples of collapsed societies in the past – as the clearest example of a society that destroyed itself by overexploiting its own resources.

In her book *Cosmopolitiques* Stengers (2007) sees the main problem of the received view of biology as a science to be its attempt to join physics and chemistry in a rather positivistic attempt towards unification of all sciences like E. O. Wilson’s (1998) *Consilience: The unity of knowledge*, where he predicts that most of the humanities will be replaced by hard scientific knowledge. Consequently, the received version of science denies the validity of all claims and practices other than its own. It denounces all other discourses – for instance, from hunter-gatherer societies living in close interaction with living nature – as superstitious, irrational and grounded in mere “belief”. And yet research demonstrates that many of these discourses contain much meaningful practical insight, as for instance Roy Rappaport (1984) showed in his book *Pig for the ancestors*. He studied the Tsembaga Maring group of slash-and-burn farmers and their view

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²⁰ I am aware that there is now a debate about the truth of this story and alternative versions upgrading the influence of rats destroying trees and white people killing islanders and taking them as slaves.
of nature in New Guinea and concluded that their spiritually guided ritual cycle operated as a homeostatic ecological process regulating a whole emerging from the interaction of the size of the pig population, the amount of acreage cultivated, their energy expenditure in subsistence activities, their protein ingestion as well as the man-land ratios combined with the frequency of internal fighting between villages. His functional analysis was based upon quantitative data. It is an example of the degree to which cultural and non-cultural variables interact through meaningful semiotic events. Rappaport challenges the scientistic view that the meaning of religious rituals has no effect upon the external world. Harris (1991) investigated how pork turned into a religiously tabooed food in, for instance, ancient Israelite society. Harris also argues from a blend of spiritual and ecological knowledge of the nomad culture, and claims that while cattle, sheep and camels consume grass efficiently, pigs are poor grazers and must compete with humans for grain. Furthermore pigs produce no utility aside from meat, compared with cattle and goats that provide milk, transport, and labor. Harris argues that this gave rise to the pigs being tabooed food in the Old Testament and in Ancient Egypt, eventually to become forbidden by Islam. Harris is convinced of the primacy of humankind’s ecological roles and modes in shaping meaningfulness in human culture. The problem with the consilience-view of nature is that, through science, it presents nature as one thing opposing a multitude of other “things” called culture. But there are many very different cultures with many interpretations of the complex we call nature. Cybersemiotics is consistent with for instance Descola’s (1996) work on Constructing natures as well as Latour’s (1993, 2004, 2007) semiotic work on ‘hybrids’, which is discussed further in Brier (2012). Nature is not only built out of energy, matter and information, it is also built from signs interacting with all the other elements.

References


Listening into the Dark: 

William R. Torbert

Abstract: Collaborative Developmental Action Inquiry (CDAI) is introduced as a meta-paradigmatic approach to social science and social action that encompasses seven other more familiar paradigms (e.g., behaviorism, empirical positivism, and postmodern interpretivism) and that triangulates among third-person, objectivity-seeking social scientific inquiry, second-person, transformational, mutuality-seeking political inquiry, and first-person, adult, spiritual inquiry and consciousness development in the emerging present. CDAI tests findings, not only against third-person criteria of validity as do quantitative, positivist studies and qualitative, interpretive studies, but also against first- and second-person criteria of validity, as well as criteria of efficacy in action. CDAI introduces the possibility of treating, not just formal third-person studies, but any and all activities in one’s daily life in an inquiring manner. The aim of this differently-scientific approach is not only theoretical, generalizable knowledge, but also knowledge that generates increasingly timely action in particular cases in the relationships that mean the most to the inquirer. To illustrate and explain why the CDAI approach can explain unusually high percentages of the variance in whether or not organizations actually transform, all three types of validity-testing are applied to a specific study of intended transformation in ten organizations. The ten organization study found that adding together the performance of each organization’s CEO and lead consultant predicted 59% of the variance, beyond the .01 level, in whether and how the organization transformed (as rated by three scorers who achieved between .90 and 1.0 reliability). The essay concludes with a comparison between the empirical positivist paradigm of inquiry and the Collaborative Developmental Action Inquiry paradigm.

Keywords: Action inquiry, adult development, organization development, social scientific paradigms, validity testing, leadership, 1st-, 2nd-, and 3rd-person research.

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Introduction

Collaborative Developmental Action Inquiry (CDAI) (Torbert, 1976, 1991; Torbert & Associates, 2004; Torbert & Livne-Tarandach, 2009) is a meta-paradigm of scientific inquiry that integrates first-person, adult spiritual inquiry and consciousness development in the emerging present with second-person, transformational, mutuality-seeking political action inquiry over a lifetime, and third-person, inter-generational, objectivity-seeking social scientific inquiry and its effects. In other words, CDAI seeks to triangulate among the subjective aspects of action and inquiry (within the first-person), the intersubjective interactional aspects of action and inquiry (between second-persons engaged with one another), and the objective aspects of action and inquiry (among a collective of third-persons-and-things at-a-distance-from and often-anonymous-to one another). The intent is to generate:

1. our own distinct, personal integrity (which needs re-contacting, re-imagining, re-strategizing, re-enacting, and re-assessing in each new engagement);
2. a mutually-vulnerable, mutually-empowering, and mutually-transforming dynamic in conversations, meetings, and other social occasions (which both feeds and requires inquiry together about shared purposes, useful roles, rules, and norms, as well as one another’s relative efficacy, and the relative justice of outcomes);
3. more-generally-readable signs of the relative validity, fecundity, timeliness, and sustainability of longer term, purposive action projects.

Put in still another complementary way, the CDAI approach seeks to define, to practice, and to integrate both "during-the-act" research that influences present awareness and action and "before-and-after-the-fact" research that can influence future actions. In so doing, the very name Collaborative Developmental Action Inquiry recognizes that all research is also some form of practice, that all practice is also some form of research, and that we may later profoundly transform the very assumptions we are currently enacting about what constitutes research and action. (For recent related work that begins to describe the relationship among the first-, second-, and third-person aspects of inquiry, see Reason & Bradbury, 2001, 2008; Sherman & Torbert, 2000; Starr & Torbert, 2005; Torbert, 1997, 1999, 2000c; Varela & Shear, 1999; Varela & Shear, 1999; Velmans, 2000; Wilber, 1998).

This essay is a predominantly third-person "after-the-fact" form of social science, in three different and complementary ways: (a) it is written primarily for third-persons not directly involved in the research and action documented here (although at one point it offers a case of second-person action inquiry); (b) it is written primarily in a third-person voice (although at one point the first-person research voice is demonstrated and readers are invited to try a first-person experiment); and (c) it offers quite powerful statistical results in support of the third-person generalizability of some of its findings (powerful statistical results are results that account for large proportions of the variance and that are likely to misrepresent the “universe” from which the sample is drawn less than 1 in 100 times).

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2 With deep thanks for their contributions to this essay to; Hilary Bradbury-Huang of the University of Portland, Ron Dufresne of St. Josephs University, Benyamin Liechtenstein of UMass-Boston, Aliki Nicolaides of the University of Georgia, and Peter Reason of the University of Bath, Emeritus.
But this essay is also different from typical Empirical Positivist (EP) scientific journal articles on validity testing of measures and findings in three major ways (see Table 1 for a typology of eight distinct scientific paradigms). First, the essay introduces the vast field of first-person research/practice and adult development leading toward empirically rare action-logics that are theoretically associated with increasingly timely and transforming action and inquiry, and that are statistically associated with successful leadership of organizational transformations by consultants and CEOs (see below). Second, the essay introduces the vast field of second-person research/practice that can directly generate personal, team, and organizational transformation (and offers a case study of such “during the act” research). And third, it offers forms of validity testing that include, but go beyond, third-person tests of the generalizability of data patterns (Cook & Campbell, 1979). These additional post-positivist validity tests (Argyris, Putnam & Smith, 1985; Denzin & Lincoln, 1994; Lather, 1993; Lincoln & Guba, 1985; Reason & Bradbury, 2001) begin to address the first-person integrity and the second-person mutuality of interactors in real-time.

The essay proceeds by offering first an introductory comparison among scientific paradigms conceived as based in different ones of the developmental action-logics that can also be used to distinguish individuals and organizations. These paradigms lead up to the CDAI meta-paradigm of paradigms that includes not only third-person inquiry, but also first- and second-person inquiry in the midst of action. In the following sections, examples of first- and second-person research are offered. Then, a close review of validity issues in a study of transformation in ten organizations is offered, in order to illustrate how the interweaving of first-, second-, and third-person research in the midst of action and after the action can generate unusually strong empirical findings. Finally, the CDAI paradigm of science is compared to the Empirical Positivist paradigm to see whether any conclusions can be reached about their relative comprehensiveness and about whether either resolves errors untouched by the other.

Background and Introductory Comparison among Scientific Paradigms

The different action-logics identified by developmental theory can be used to distinguish the personal action-logics of different individuals, and this is the realm where most developmental research and theorizing has occurred since the path-finding work of Piaget, which, a generation later, was expanded by adult development theory (Kegan, 1994; Torbert, 1987; Wilber, 1999). In addition, developmental theory can be derived from and used in exploring the interactional action-logics of different conversations, project, teams or organizations (Torbert, 1976, 1987, 1989; Torbert & Associates, 2004). This essay focuses primarily on a yet a third locus of development, namely how the institutional action-logics of different social scientific paradigms compare (see table 1 and table 2 below and Sherman & Torbert, 2000), and why the Developmental Action Inquiry paradigm is more likely to reveal and support the dynamics of developmental transformation in persons and organizations than the dominant paradigms of social science up to the present. This essay will make no attempt to offer a systematic discussion of each scientific paradigm, but will introduce the idea impressionistically through Table 1 and Table 2, illustrated by a very brief overview of different patterns of management research during the twentieth century. Then, the main body of the paper introduces the principal methods of
CDAI, along with a close look at one study of intervention in ten organizations and the validity testing of the results.

In broad overview, behaviorism (e.g., Taylor, Watson, Skinner) and Gestalt psychology, sociology & anthropology (e.g., Mayo, Roethlisberger, and both George Mead and Margaret Mead [unrelated]) were the pre-eminent and dueling social scientific paradigms of the early twentieth century. Empirical positivism (e.g., Popper, Milgram, Campbell) became increasingly pre-eminent in management studies during the third quarter of the century. And today, the dominant research strategy in management is probably multi-method eclecticism, which makes a place for qualitative methods that can chart dynamic processes, along with quantitative methods that can measure whether outcomes are significantly different from one another.

One strategy typical of the multi-method eclectic approach in management research during the past decades is to say that there are two types of inquiry and knowing that can challenge, correct, and ultimately complement one another: a more qualitative, interpretive, close-to-the-phenomena “inquiry from the inside” and a more quantitative, positivistic, theory-guided “inquiry from the outside” (Evered & Louis, 1981; Louis & Bartunek, 1992). Today it is fashionable to seek to integrate qualitative and quantitative methods, insider and outsider research, process descriptions and outcome measures, in attempts at triangulating toward useful approximations (Bartunek et al., 1993). But notice that these are all bi-polar triangulations. What would “strong triangulation” look like?

As qualitative methods have gained prestige in the Academy of Management during the past two decades, a second new wave of theory and research has “broken over” the management field as well. This second wave is far more controversial and impassioned than the first and doesn’t blend as well with empirical positivism. In fact, postmodern interpretivism (e.g., Gadamer, Smircich & Callas, Morgan, Weick), aka “the language turn” can be downright antagonistic toward mainstream social science, viewing it as a key element in a process of hostile observation for purposes of unilateral, un-self-questioning, and non-mutually-questioning social control and of linear, technological manipulation of the natural environment (Boje et al. 1996; Gadamer, 1982; Schwandt, 1994).

Postmodern interpretivism foregrounds the subjective framing process that precedes all structured thinking and action and that we each go through, almost all of us without ever realizing it (and even those of us who realize this in principle realize it in practice only now and then). This paradigm of inquiry and knowledge asks us what kind of “critical subjectivity” can help us become aware of, “deconstruct,” and “transgress” beyond, our own taken-for-granted subjective frames and boundaries as researchers (and as actors, the following paradigms will add).
Table 1: Analogies Among Personal, Organizational, and Social Scientific Developmental Paths

<table>
<thead>
<tr>
<th>Personal Development</th>
<th>Organizational Development</th>
<th>Social Scientific Development</th>
</tr>
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<tbody>
<tr>
<td>I. Birth-Impulsive</td>
<td>I. Conception</td>
<td>I. Anarchism (e.g., see Feyerabend, 1975)</td>
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<tr>
<td>(Multiple, distinctive impulses gradually resolve into characteristic approach; e.g., many fantasies into a particular dream for a new organization).</td>
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<td></td>
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<tr>
<td>II. Opportunist</td>
<td>II. Investments</td>
<td>II. Behaviorism</td>
</tr>
<tr>
<td>(Dominant task: gain power [e.g., bike riding skill] to have desired effect on outside world.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Diplomat</td>
<td>III. Incorporation</td>
<td>III. Gestalt Sociologism</td>
</tr>
<tr>
<td>(Looking-glass self: understanding others’ culture/expectations and molding own actions to succeed in their [e.g., market] terms).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV. Expert</td>
<td>IV. Experiments</td>
<td>IV. Empirical Positivism</td>
</tr>
<tr>
<td>(Intellectual mastery of outside-self systems such that actions = experiments that confirm or disconfirm hypotheses and lead toward valid certainty).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Achiever</td>
<td>V. Systematic Productivity</td>
<td>V. Multi-Method Eclecticism</td>
</tr>
<tr>
<td>(Pragmatic triangulation among plan/theory, operation/implementation, and outcome/assessment in incompletely predefined environment. Reliably uses single-loop feedback to improve real-time performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. Strategist</td>
<td>VI. Collaborative Inquiry</td>
<td>VI. Postmodern Interpretivism</td>
</tr>
<tr>
<td>(Self-conscious mission/philosophy, sense of timing/historicity, invitation to conversation among multiple voices and to reframing of boundaries. Occasionally uses double-loop feedback to transform performance).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII. Alchemist</td>
<td>VII. Foundational Community</td>
<td>VII. Cooperative Ecological Inquiry</td>
</tr>
<tr>
<td>Life/science = a mind/matter, love/death/transformation praxis among others; cultivation of triple-loop feedback and re-attunement among inquiry, friendship, work, and earthly/material goods).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII. Ironist</td>
<td>VIII. Liberating Disciplines</td>
<td>VIII. Collaborative Developmental Action Inquiry</td>
</tr>
<tr>
<td>(Full acceptance of multi-paradigmatic nature of human consciousness/reality, including distances/alienations among paradigms, resulting in interruptions of, and failures to listen into, single-, double-, and triple-loop feedback).</td>
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<td></td>
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</tbody>
</table>

Source: Adapted from Hartwell & Torbert (1999), where greater detail on characteristics of each personal and organizational action-logic is available. (Note: in the most recent versions of this developmental theory, e.g., Figure 1 later in this paper, an additional action-logic, Individualist/Pluralist/Relativist, is described between Achiever and Strategist).

One characteristic that is common among all five of these already-mentioned approaches to social science is that none of them demonstrates how the insights gained from academic research can form the basis for effective interaction among second-persons, or within a first-person (you/me) in the everyday world. Empirical positivism, multi-method eclecticism, or postmodern interpretivism can be of some use when we are apparently “at rest,” reflectively analyzing a data-
set or our own patterns of thought. But these paradigms eschew the vast majority of life's variance… including all those moments when we are uncertainly in interaction with others or with ourselves alone, when the question is how to attend and act in a timely, idiosyncratic, ecologically sensitive fashion.

### Table 2: Brief Descriptions of Seven Social Scientific Paradigms

<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Behaviorism</strong></td>
<td>Assertive, physical quest for reliable, unilateral control through operant conditioning of an unembarrassedly objectified and atomized external world. Preferred method: laboratory experiments (maximizing the scientist's unilateral control over variation). Nominalist presumption of isolatable “stimuli” and “responses.” Skinner – an archetypal behaviorist (Skinner 1953, 1971; Argyris, 1971).</td>
</tr>
<tr>
<td><strong>Gestalt Sociologism</strong></td>
<td>Appreciative, emotional quest for understanding of the overall pattern of subjective beliefs, values, and rituals of given “Other” cultures. Preferred method: field case studies based on non-interventionist, ethnographic observation. Essentialist presumption of integrative ideas, norms, and selves (Cooley, 1956; Mead, 1934).</td>
</tr>
<tr>
<td><strong>Empirical Positivism</strong></td>
<td>Critical (but not hermeneutically self-critical), intellectual quest for predictive certainty about deductively logical, universally generalizable, empirical propositions (Cook &amp; Campbell, 1979; Hunt, 1994). Privileges randomized sample, experimental, statistically-analyzed hypothesis testing studies, along with computer modeling of intelligence, because of the crisply clear quantitative, binary certainty about distinctions between confirmation and disconfirmation (e.g., Simon’s theoretical and empirical demonstrations of the concept of bounded rationality; Simon, 1947, 1957, 1969, 1989, 1991; March &amp; Simon, 1958; Turkle, 1991).</td>
</tr>
<tr>
<td><strong>Multi-Method Eclecticism</strong></td>
<td>Practical quest to increase validity, understanding, and applicability of findings. Recommends triangulation among quantitative and qualitative methods. Currently fashionable and in flower in the managerial disciplines (e.g., Campbell et al., 1970; Eisenhardt, 1989; Dyer &amp; Wilkins, 1991; Bartunek et al, 1993).</td>
</tr>
<tr>
<td><strong>Postmodern Interpretivism</strong></td>
<td>Self-conscious accounting for the radical subjectivity and fragmentariness of perspective that embraces every languaged perception and conception. Preferred method: wishes to deconstruct the implicit background of: (a) the objects foregrounded in single-frame, early-paradigm studies; and (b) of the researcher and of the writing of the author of the critique (e.g., Denzin &amp; Lincoln, 1994; Macey, 1993; the 1990s Pfeffer-Van Maanen debate in managerial studies was between an early single-frame “Pfeffer-digm” and Van Maanen”s rhetorical interpretivism [Pfeffer, 1993; Van Maanen, 1995; Frost, Pfeffer, Van Maanen, 1995]).</td>
</tr>
<tr>
<td><strong>Cooperative Ecological Inquiry</strong></td>
<td>Commitment to creating real-time communities of inquiry (i.e., communities that bridge subjectivities and differences of perspective, that confront incongruities among vision, strategy, action, and outcomes, and that support voluntary, mutual personal and social transformation [Bradbury, 1998; Cooperrider &amp; Srivastva, 1987; Heron, 1996; Lather, 1993; Weick, 1998;</td>
</tr>
</tbody>
</table>

**Collaborative Developmental Action Inquiry**

Recognizing different moments, persons, organizations, and cultures as complex, chaotic interweavings of the six prior paradigms (Pondy & Mitroff, 1979), highlights the contrapuntal rhythms, interruptions, and interventions in developmental movement from one paradigm or action-logic to another, whether in single conversations or in whole lives (Fisher, Rooke & Torbert, 2000; Kegan, 1994; Rooke & Torbert, 1998; Torbert, 1989, 1991; Wilber, 1995). Seeks interweaving of first-, second-, and third-person research/practice with single-, double-, and triple-loop feedback that can sustain inter-paradigmatic conversation, work, meditation, and play. Generalization is recognized as occurring primarily one-at-a-time: one person at a time, as she or he practices awareness-expanding first-person action inquiry at more and more moments; one second-person organization at a time; one third-person research study at a time; though the entire statistical armamentarium remains appropriate within its limiting premises (as is illustrated by the validity testing of the ten organization study later in this essay).

The objective of the "action turn" in the social sciences (Bradbury, 1998; Reason & Rowan, 1981; Sherman & Torbert, 2000; Torbert, 1976, 1991; Reason & Torbert, 2001) is to go beyond the postmodern "language turn," and, whether we are professional social scientists or bricklayers or investment bankers, to bring inquiry into as many of our moments of action as we can (in the interests of increasing our own integrity and mutuality, as well as the sustainability of inquiries and actions such as ours). In this context, it is important to clarify that action research, as it has been known during the second half of the twentieth century, very rarely represents anything like this “action turn” and the CDAI paradigm to be described presently. More frequently, in its clinical and case-oriented qualities, action research has represented instances of Gestalt sociologism; or, when it combines quantitative and qualitative methods with widely spaced feedback episodes, action research becomes a kind of multi-method eclecticism.

Like all personal, organizational, or scientific transformations, this transformation – this action turn – toward the paradigms we name cooperative ecological inquiry and Collaborative Developmental Action Inquiry in Tables 1 and 2, is anything but linear and straightforward. A metaphor that better communicates the unexpected twists that an action-logic engages in as it transforms toward wider inclusiveness might be "a backward stumbling double somersault through a trap door." Figure 1, below, shows how we have digitally illustrated developmental transformations in an earlier book (Torbert & Associates, 2004). To better imagine the unforeseeable twists and turns of this transformation, if you are a scholar/ scientist/ therapist/ consultant, imagine that you were seeking forms of social inquiry that you would want to “work” not just in your professional life, but with your immediate organizational and family life (e.g., with your 15-year-old child!), as well as in your spiritual, artistic, craft, exercise, conversational, sexual, and other activities…
Despite its “degree of difficulty” and its “relative unpremeditatability,” this twisting, “action turn” is equally open to anyone willing to commit to integrating quantitative, qualitative, and action inquiry into their practices among others in everyday personal and professional settings (Reason & Torbert, 2001). But who is willing to do this? If we try to observe our own daily lives like scientists (Torbert, 1991, ch. 15), we come to realize:

1. **how rarely we actually practice such observation in action** (because our actions are largely habitual, and we forget to observe at the time, or to realize we don’t know how to observe);
2. **the degree to which we can’t imagine in any given present moment why we should observe now** (“Nothing interesting’s going on right now… and aren’t I doing enough anyway?”);
3. **how little we act like inquiring scientists in our relations with our colleagues, our intimates, or strangers** (because most relationships are bounded by issues that are tacitly treated as undiscussable); and
4. **how rarely in our enacted lives we are in a position to apply anything like Empirical Positivist standards of certainty and universalizability**, or even that paradigm’s version of truth as representational (because in speaking each statement is active or presentational [Reason, 1994] as well as reflective or re-presentational [the technical term for this mix is "quasi-performative" (Pitkin, 1981)]).

**Figure 1.** A Quasi-Performative Appreciation of the Dynamics and Simultaneity of Different Action-Logics
When we are in interaction with one another and simultaneously seeking to determine to what degree we are hearing or telling truth or something as close to it as we can now get, or whether we are acting as effectively and/or transformationally as we wish: A host of first- and second-person questions arise that simply don't arise in the paradigms of inquiry codified in twentieth century social science…

*What kind of first-person awareness do I (or you) require in real time to continue thinking, acting, and perceiving "toward" my (your) objectives as I ordinarily do (or in a meandering, non-purposive fashion as I/you also often do)... while simultaneously registering the "shapes" of my thoughts, actions, and effects in an inquiring way that gives me the choice of changing the shape of my thinking, acting, and effecting in each succeeding moment? (Torbert, 1973; Varela & Shear, 1999; Velmans, 2000)*

*And what kind of second-person talking, listening, and non-verbal gesturing is required to invite others in the interaction to participate in this kind of second-person research/practice that permits the interacting group to move "forward," while simultaneously having the choice to re-vision its aims, or to restructure itself, or to adopt new tactics in each succeeding moment? (Argyris, 1993; Isaacs, 1999; Torbert, 1976, 2000b).*

Also, how does the *propositional* knowledge of third-person inquiry and action (e.g., this article) relate to and encourage or discourage the *experiential* knowing of first-person research/practice and the *presentational* and *practical* knowing of second-person research/practice and vice-versa? (For detail on these four types of knowing, see Heron, 1996; Reason, 1995).

**Foreground - Taking the Action Turn**

When a given person takes the foregoing questions seriously and discovers a wish to become a disciplined first-, second-, and third-person research/practitioner… S/he may enter any number of first-person disciplines, such as schools of meditation (Taoist, Buddhist, Hindu, Gurdjieffian, Quaker, Sufi, Jesuit, Hassidic etc.), in order to receive guidance in first-person research/practice (Alexander & Langer, 1990; Anthony, Ecker & Wilber, 1987; Chandler, 1991; Gendlin, 1981; Ouspensky, 1949; Torbert, 1973; Trungpa, 1970; Wilber, 1998).

S/he may also enter any number of second-person research/practice schools more or less simultaneously (e.g., therapy, psychodrama, Tavistock group relations conferences, t-groups, a woman’s circle, a men’s group, action science study groups, etc.) (Argyris, Putnam & Smith, 1985; Bion, 1961; Isaacs, 1999; Schein & Bennis, 1965; Sedgwick, 1999; Truax & Carkhuff, 1967).

And s/he may enter any number of third-person academic disciplines (education, management, philosophy, etc.) in a university.

Rarely, however, are the relationships among the first-, second-, and third-person aspects of the work well articulated. For example, this author spent some years simultaneously:
1) in a first-person research/practice school (the Gurdjieff Work) in which *not expressing negative emotions* was an explicit injunction and exercise;

2) in a second-person research/practice school (the Bethel National Training Laboratories) in which *expressing negative emotions passionately but non-evaluatively* was an explicit exercise; and

3) in a third-person research/practice setting (a PhD program) that did not address first- and second-person research practices at all as legitimate research methodologies in any of its methodology courses.

Because of experiences like this, before a person goes very far pursuing all three types of research/practice at once, s/he will realize, implicitly and intuitively, if not explicitly and intellectually… that the scale of learning to which s/he is committing… embraces, not just incremental, single-loop feedback that influences one's choices of behavior in specific situations in order to reach whatever specific goals one may have. Learning to interweave the subjective, the intersubjective, and the objective aspects of inquiry and action also embraces double-loop feedback that repeatedly transforms the overall action-logic through which we interpret and act in the world. Furthermore, this scale of learning includes triple-loop feedback that revivifies and reconstitutes the breadth and depth of our moment-to-moment attention (thereby increasing our awareness of the still vaster volume of inchoate, implicit possibilities and incongruities in each moment). (For different but related treatments of single-, double-, and triple-loop learning, see Bartunek & Moch, 1987, 1994; Nielsen, 1996; Starr & Torbert, 2005; Torbert 2000b; Torbert & Fisher, 1992; also, Table 1 gives an indication of when in the course of human development action-logics gain the capacity to digest these different types of feedback and potential learning.)

Analogous scales of potential learning can come to characterize one's second-person relationships with family, friends, and colleagues, as well as one's third-person relationships as a member of multiple organizations, ethnic and language groups, spiritual traditions, or professions.

In other words, a scientific paradigm such as Collaborative Developmental Action Inquiry that aims at integrating first-, second-, and third-person research/practice is equally open to all adult human beings, though, obviously, adults who are already heartfelt and disciplined practitioners of any number of schools of first-, or second-, or third-person research/practices are initially likely to pick up the overall CDAI approach more quickly. More particularly, persons already engaged deeply in first- or second-person research/practice are more likely than the average person (and more than Ph.D.s who have no explicit first- or second-person research/practice) to be attracted, rather than initially threatened, by the following implications of the CDAI paradigm. First, that each CDAI practitioner faces unforeseeable personal transformations… Second, that s/he is invited to engage in relational transformations with friends and work peers… Third, that his or her own development and that of the organizations s/he belongs to will be supported by taking leadership roles, by writing to be read and critiqued by others, and by generating and attending to measures of the relative efficacy of one's own and one's organizations' performance… Fourth, that personal and organizational development are supported by increasingly exercising mutually-transforming power and inquiry in preference to unilateral power… Fifth, by a deepening search to act increasingly in ways that reverberate as timely across spatial and temporal scales… And, finally, by the gradual realization that the
question of what constitutes timely action and interaction in any current situation can never be
validly solved once and for all for oneself or others, but rather at best grows more engaging of
each inquirer and each community of inquiry.

Consider in this light, for example, Socrates’ development from soldier … to later doing
civic duty as a citizen judge… and still later to becoming a kind of street philosopher who
died for his dedication to inquiry.

Socrates’ living inquiry led him from objective manual labor as a soldier who in war
protected his student, Alkibiades, from death… through intersubjective emotional work as
a citizen-judge… to his late-in-life subjectively-defined role as a sort of wandering
minstrel – not, like the blind seers Homer or Teiresias, wandering across the countryside,
telling stories from long ago, but rather wandering about the city gyms and markets, asking
questions within the city of Athens, as it was at that moment: losing the Peloponnesian
Wars to Sparta, less than a generation after having been, in Pericles’ words “the School of
Hellas.”

All this Socrates did, and it unforeseeably led to his going to jail as a very old man. He had
killed no one, stolen nothing, done no violence of any kind, nor any kind of injury to any
one individuals’ reputation (though he may have punctured the false self-esteem of a few).
He had done no worse, let us say, than the comedian Aristophanes did to him in his
comedy “The Clouds…” nor no worse than the tragedian Euripides’ did to Aristophanes in
twisting his (E’s) comic attack on him (A) into “The Bacchae.”

Once in jail, Socrates’ friends arranged the not-unusual opportunity for him to escape into
exile, but, through the action inquiry of his final conversation with his friends, he
determined not to leave the civil jurisdiction of Athens despite the possible injustice done
him by the city he loved. His decision to drink the hemlock when he did, rather than accept
his friends’ offer to help him escape from jail, was an instance of action inquiry so
vulnerable and so transformational that it resonated as timely across his roles as mentor,
friend, and citizen, as well as across the ages, repeatedly raising the question for new
generations who read Plato, "What kind of inquiry throughout our lives can generate timely
integrity, mutuality, and sustainability?"

The First-Person Voice Describing First-person Action Inquiry
Practice

If the reader turns back through the foregoing several pages, you will find a number of
instances, such as the question just before this section, where the author has used italics. The
italics are meant to capture sentences that are in more of a first-person voice than in a third-
person voice. Thus, the question just above is a first-person question for the author, and he is also
exploring whether it resonates as a question that at least some readers are concerned with for
themselves.

I am now going to speak with you, dear readers, in my first-person voice just a little, in order
to share a piece of writing by my friend Peter Reason, with his kind permission, in which he
illustrates the use of first-person voice to describe an example of his first-person research on his first-person practice:

**Freefall carving**

I have been curiously wondering why some pieces of writing don’t “work” for me. I have a sense of when I have dropped into the freefall mode these days, as I feel a sense of calm and spontaneous deliberateness, which sometimes just doesn’t seem to be with me.

I noticed a similar kind of feeling as I started woodcarving again: freefall writing (Turner-Vesselago, nd: see also Goldberg, 1986) is all very well, but since I spend so much of my time writing and reading, I do find my eyes get tired and I simply have enough of words. This week I picked up some of the carving pieces that have been around all summer while I have been busy with the boat—a bowl which Steve turned for me on his lathe, leaving a blank of wood around the rim for me to carve oak leaves into; and a green-man candlestick which I started for Sarah and put aside in some disgust.

That disgust was because it was not perfect. I felt I hadn’t done the research, got a clear image in my mind as to what I was carving, and in particularly hadn’t studied the kind of leaves I was building into his face. Elizabeth said to me, “I like that green man, it’s ok,” so I took it up and looked at it with some renewed affection. Most of the face and the sides of the head have been roughed out so you can see the features and how the leaves sprout and spread around, it just needs the design finished at the back, where the leaves from each side will meet, and then it needs careful finishing and tidying up.

So I took my pencil and boldly drew some outline leaves, following the kind of tri-foil pattern I have been using, thinking more about how the individual leaves would overlap rather than if they were “correct” as leaves. I cut around the design with the v-tool, getting a feel for how each leaf fitted within the curve of the wood and how it might come forward or fall back in relation to its neighbours. And I cut out some of the background, noticing how boldly I was cutting down the edges of the pattern and moving the gouge round to chop out quite big chips of wood. I felt almost a delight at holding the carving gouge in one hand, the round mallet in the other, having pulled my carving chops out from under the bench and dusted them off. I fell into the design without anxiety, with a positive pleasure at the feel of the wood under my tools.

So to chop down along the edge of a leaf, feeling the way the gouge enters the wood, noticing the different quality as it enters softly, squishily, when along the grain, firmly and soundly when across the grain, and harshly and unpredictable at that knot which sits in such an awkward place. My hands, my whole body, notices this feel, this communication almost, between gouge and wood, so that carving in freefall mode simply adjusts itself as if it needs little attention from my conscious mind—indeed it does need little attention from my conscious mind.

But mind does come into it as well! When I was carving the rim of oak leaves around the bowl, following Elizabeth’s design, I realised that I was wasting time by cutting the details of each leaf before I had carved out the planes on which they were to sit, with each leaf
overlapping the previous and underlapping the next. So I chose consciously to cut over and destroy the design details in order to do that, choosing a strategy and then falling into the skill of practice, coming out again to assess what I had done and re-establish the design, so I can now fall back into the skilled based cutting of the leaves. It IS like freefall writing, in that there is a time for the mind to choose ("I will sit down for ten minutes to write") and a time to allow the writing/cutting "without a parachute" to take itself forward (Reason, 2001).

Clearly, the point in conducting such first-person research/practice and then writing about it in this way is not to generalize some “true answer” about practice to everyone else, but rather: (a) to make the activity more pleasurable; (b) to make one’s work more effective or beautiful or integral by bringing a better attention to it; and/or (c) to invite other first-persons (you, me) to consider engaging in such first-person research/practice themselves. In first-person research/practice one attempts to generalize, not the outcomes of the search to everyone else, but rather the practice of such research to more times in one’s own life.

Another point that Reason’s report of his self-observation of his carving makes clear about first-person research is that although it can concern the past (e.g., writing autobiographically about oneself in an inquiring mode), as does almost all formal third-person scientific research, it is perhaps most at home as research on one’s present activity that can feed back instantly on one’s actions. (First-person research on the future is also possible [e.g., intentional “dreaming” about wishes for the future, or role playing possible ways of conducting an important upcoming conversation].)

Second-Person Research Voices Describing One Another’s Second-Person Practices

An example of second-person research voices occurs if team members are asked by an interviewer to assess each other member’s performance, and if each person receives as feedback, not some average number that masks the range and quality of different perspectives on his or her performance, but rather the actual phrases different people say (typically without the names of who said what). Obviously, such feedback may contain significant contradictions and incommensurabilities among the voices. For example, Jack, a COO, received these comments from others among the seven-person senior management team: “Jack is good on the budget and at talking and selling. He’s not good at personnel and unfortunately he thinks he is.” “Good relationship with George (the CEO) which helps the company.” “When Jack is upset in a meeting, he tends to be patronizing or to avoid the issue.” “He Sometimes unloads on others, gets hysterical.” “Jack sometimes acts like an unsure lover – he laughs too loud at George’s corny jokes.”

From a third-person, objective point of view, such results would seem to signal a lack of reliability among the raters and to reduce the validity and meaningfulness of the data. But from a second-person, intersubjective point of view, the quotes communicate the actual divergent effects of Jack’s actions on his significant others (of course, someone may be lying, or someone may later reconsider). The dilemma the recipient of this inconsistent feedback faces in determining how to act more effectively as a team member in the present and future is a real one.
(Basically, it is a sign that no single-loop change in behavior will please all; rather, a double-loop change in strategy or action-logic used in the present [and/or a triple-loop change in the kind of attention the practitioner pays to interactions with other team members] is called for.)

This second-person research on first-person practice in the past can transform into first-person research on first-person practice in the present and for the future, if the condition is created whereby the team members are invited (and at least some freely choose) to discuss what implications for their future action the (anonymous) feedback they’ve received suggests. In Jack’s case, when he took the lead in revealing the feedback he had received to the rest of the team, his initiative, his openness to the data, and the subsequent conversation permanently transformed his tentativeness and shiftiness in this setting, as well as his actual relationship to each other member of the team and the ethos of the team as a whole. In a word, what this specific example of research/practice generated, and what second-person research on second-person practice in general seeks to generate, is increased openness to difference and increased mutuality (Isaacs, 1999; Hartwell & Torbert, 1999).

What this example also begins to suggest is that there are many different types of possible and complementary social research. Indeed, there are at least 27 distinguishable types of research possible in any social situation: first-, second-, or third-person research on first-, second-, or third-person practice in the past, present, or future (3x3x3=27) (Chandler & Torbert, 2003). The developmental path through the octave of personal, organizational, and scientific action-logics is a hypothesized sequence through which human, intelligent systems can question the assumptions on which their current action-logic is based and transform toward action-logics that progressively make fewer assumptions and progressively deepen their capacity for listening into the dark inquiringly more of the time.

Using CDAI Theory in First- and Second-Person Research/Practice

The following case study (in some ways condensed and in some ways expanded from Fisher, Rooke & Torbert, 2000) attempts to breathe a little more life into Table 1 and Figure 1 and the question of how to test CDAI theory in the midst of action. The case study, told in a third-person voice, describes an organizational consultant cultivating a special first-person attention in the emerging present, much like the woodcarver in the earlier story, and then using CDAI theory in the midst of second-person practice with an organization. The case shows the consultant exploring in a short ten-minute break toward the end of his first day at the company: (a) how each senior manager and the organization as a whole descriptively reflects CDAI theory; (b) whether using the theory normatively, by inviting each person and the organization as a whole to experiment with the successive developmental action-logic, catalyzes change and transformation toward greater awareness, mutuality, and sustainability in himself, others, and the organization; and (c) whether using the theory analogically across the scales of the individuals, the intervention event, and the organization pinpoints a particularly powerful type of collaborative leverage for transformation available at this particular time.

Here is how the story evolves:
A small software company has burned through its initial round of venture financing, with net revenues for its products not yet foreseeable on the horizon. The partners are seeking a second round of venture capital, and everybody at the company knows they must make a breakthrough in marketing and sales. Yet, this “bottom-line” negative feedback alone, as stark as it is, is not propelling the company into a new operating pattern.

An organizational consultant who takes a CDAI approach is invited to help the company over a two-day period. He approaches the assignment with the sense that he must discover what disharmonies among the corporate dream, the leadership’s strategies, and the day-to-day operations account for the company’s continuing losses. But more than this, he must discover a positive way to reframe or restructure the situation with the leadership and company members, so that they become motivated to correct the disharmonies.

The consultant interviews the top management (the president and the three vice presidents for production, marketing, and sales) of the computer software company, which numbers 35 employees in all. The president is a generation older than the three vice presidents, and the company is a partnership between the president and one of the vice presidents. Together, the two of them developed the initial product.

In the following three years, the company has produced a large number of high-quality products, but they are not selling well. The consultant discovers numerous problems that have remained unresolved for a long time. Neither mission nor market is well defined. Pricing is a subject of acrimonious controversy. Employee morale is fragile because it is unclear whether competence or cronyism is the basis for rewards. Decisions are not driven by any internal sense of mission; they are made only when situations deteriorate into external emergencies.

The bottleneck in decision making appears to be the relationship between the two partners. They respect one another and attempt to share responsibility as though equals. But they repeatedly fall prey to differences in age, formal role, and managerial style. The president plays the role of optimistic, benign, absent-minded father. The vice president plays the role of pessimistic, sharp, rebellious son.

Having interviewed the senior managers individually during the first six hours of his two-day visit, the consultant is next slated to meet with the two partners to set the agenda for the next day’s senior management retreat. But based on what he has heard, the consultant fears that the agenda-setting session may itself fall prey to the partners’ well-intentioned wrangling.

In his 10-minute walk around the outside of the building prior to the session, the consultant engages in a first-person research/practice of intentionally bringing his attention first to his breathing and then, following that, to the vividness of the outside world, then to his feelings, and, only when he has established an ongoing circulation of attention, to what he now knows about the company. First, he becomes clear that the partners’ pattern of behavior must change before any other productive decisions are likely. Next, he applies developmental theory to the individual partners, to his two-day intervention itself, and to
the company as a whole, to help him generate design ideas for his meeting with the partners… only moments away.

Applying the developmental theory to each of the partners as individuals, the consultant estimates that the vice president is in transition from Expert to Achiever, both itching for and resisting the true executive responsibility that a person at the Achiever action-logic relishes. The consultant estimates that the president is in transition from Achiever to Strategist, ready to give up day-to-day executive responsibility in favor of an elder statesman role of mentoring his junior partner and godfathering the company’s research and development function (indeed, the president has spoken wistfully of his preference for the VP R&D position).

Applying the developmental theory to the company as a whole (refer to Table 1), the consultant sees the organization as spread-eagled across the fluid, decentralized Investments and Experiments action-logics, still living off venture capital on the one hand, while on the other hand experimenting with a whole line of products. At the same time, the company is failing to “bite the bullet” and meet the limiting, centralizing, differentiating demands of the Incorporation action-logic – the demand, in short, for net revenues.

Applying the developmental theory to his own two-day visit, the consultant interprets the initial interviews as the Conception action-logic of the intervention. In this light, the agenda-setting session with the two partners may represent Investments – in particular, how much investment each of the three leaders in this meeting is willing to make in truly experimenting with new ways of working together. If so, the question is how open is the consultant himself to restructure his consulting style at this point from a more passive, receptive interviewing process to a more active, intervening process that highlights both the consultant’s own investment in the process and the new investment the partners must be willing to make in decisiveness, if they are to achieve the major changes necessary in the organization as a whole. Looking ahead to the following day, the consultant also feels that binding decisions need to be made there and then in the spirit of the Incorporation action-logic. Analogically, the two partners, the company as a whole, and the senior managers and the consultant must act conclusively in the next day.

In this Incorporation action-logic spirit, the consultant first decides to recommend at the upcoming agenda-setting session that only the partners and the consultant participate in the next day’s retreat and that whatever decisions the partners reach the next day be put in writing with definite implementation dates. As for the agenda-setting session itself, the consultant’s reasoning leads him to ask how he can reframe the partners’ expectations and pattern of behavior from the very outset of the agenda-setting session. In their initial interviews earlier in the day, both partners have used the image of ballots to describe their relative power within the company. The president, referring to their equal salaries and to his style of consulting his partner on all significant decisions, speaks of the partners as holding “ballots of the same size” in company decisions. The vice president, however, spoke of the president as having the larger vote. The consultant now reasons that if the two switch their formal roles, at least for this one day, the (erstwhile) president should still see their votes as equal, while the (erstwhile) vice president should see his vote as having
become larger. Thus, the twosome should be more powerful, especially since the junior partner will now be in a proposing role rather than an opposing role. Moreover, the new roles should be more appropriate to each partner in terms of helping each to move to a wider action-logic. More immediately, the mere fact of having the two officers reverse roles for the agenda-setting meeting and the day-long retreat should alter their usual dynamics and put them into the serious-role-playing posture of simultaneous rehearsal and performance conducive to action inquiry. (All these images occur in much less time than it takes to read about them in this paragraph.)

Of course, the consultant himself will be in a similar posture as he makes this unexpected suggestion (and of course the partners won’t necessarily agree!). As he walks into the room where he and the partners will now be meeting, the consultant is reminded of the analogy between the kind of Incorporation action-logic initiatives he is now planning and the hexagram in the Chinese Book of Changes (I Ching) named Biting Through Energetically.

He arrives two or three minutes early, viewing himself as the host of this meeting, just as the partners are his hosts at the company. It can be a meeting of three peers. He arranges the three chairs in a triangle, without a table between them, and sits, facing the door through which the partners will enter. Leaning forward in a relaxed position, with his hands on his thighs, he exhales thoroughly, then draws in his hara three or four times before his next longer and deeper and quieter inhaling, followed by an equally long exhale, and now perhaps 7 or 8 clenchings-in-of-his-hara, and a third turn. His challenge in this meeting, he realizes, is to “bite through” and invite the partners to collaboratively “bite through” the norms that paralyze their action-taking capacities.

The consultant begins his feedback/agenda-setting session with the two partners by proposing that the vice president either resign or become president. This puts the vice-president in the action role right away, rather than his usual role of reacting to the president. Although quiet, the president seems to smile slightly, ready to play whatever this game may be. On the other hand, true to his customary "opposing" role, the vice president objects to “rehearsing” as president. “It’s fake.” “Oh, you don’t believe you could be or ought to be president?” asks the consultant. After considerable further probing by the vice president, the two senior officers agree to play this serious game.

Now the vice president (in the role of the president) acts decisively rather than reacting combatively. He and the consultant propose various changes, with the president (in the subordinate role) making constructive suggestions and raising questions. The two partners reach written agreement on six major organizational changes the next day. The first of these is implemented at lunch that day. The vice president for sales is invited to join them. The partners discuss the major changes they are considering, and ask him to accept a demotion. He agrees, expressing both his disappointment that he has let the company down and his relief that his duties will be more circumscribed (why this turns out so well is explored further in the version of this case presented in Torbert & Associates, 2004). A month later, all the changes have been implemented. Two months later, the company completes, six months ahead of schedule, a first-of-its-kind product for a definite and large
market. The company fails to get a second round of venture financing, but sales revenues begin to exceed costs for the first time in the company’s history due to the new product. In the meantime, the vice president decides not to become president. The president stipulates that henceforward he will draw a higher salary and exercise the managerial authority of CEO on a day-to-day basis.

Another three months later, the vice presidential partner decides he wishes to become president after all and negotiates the change with the other partner.

This case illustrates how CDAI becomes a first-person research/practice for a consultant engaged with his client and how that, in turn, generates a second-person action inquiry process among the senior members of a company who, in turn, transform the way the company operates, even though the partners and other members of the company themselves, in this case, remain unaware of developmental theory. CDAI theory predicts that a consultant’s intervention (or a CEO’s leadership) is increasingly likely to encourage organizational transformation if the interventionist is operating at the later action-logics (Strategist, Alchemist, Ironist) where one engages in action inquiry increasingly intensively and becomes increasingly open to double- and triple-loop feedback. (In this case the consultant was measured at the Alchemist action-logic.)

Of course, the claim that the company has transformed is based on rather impressionistic (but also, we argue, relatively plausible) bits of data: generating net revenues through sales for the first time; and more sharply differentiating, assessing, and adjusting leadership roles. Moreover, because this is only one case, we have no statistical way of testing the general validity of our causal attribution: that the consultant's intensive use of both the theory and practice of CDAI at the Alchemist action-logic is the independent variable that leads to the eventual organizational transformation. This hypothesis we became able to test statistically sixteen years later after an eight-year study of ten organizations during which the action-logics of all ten CEOs and all four consultants were measured, as well as the transformations (or lack of transformations) in each organization. We now turn to a description of that study.

**A Quantitative, Third-Person Study of Organizational Transformation in Ten Cases**

The foregoing consultant and three others each engaged for many years in various forms of first- and second-person research/practice of the sort described in the prior example prior to taking organizational consulting roles with the ten organizations included in the third-person study presented next. This study was first published in clinical, case detail in Fisher & Torbert (1995), then with statistical results in Rooke & Torbert (1998), and most recently with an expanded analysis, including new clinical and the quantitative results in Torbert & Associates (2004).

Here, we offer a brief overview of the quantitative study in particular, first as an exemplar of how first-, second-, and third-person research/practices can mutually interweave, and second in order to help explain why triangulating in this way is likely to explain more of the empirical variance than third-person-research-only studies. This study tests the empirically confirmable or disconfirmable proposition, derived from developmental theory (Torbert, 1987, 1991), that only
persons who transform to the Strategist action-logic or beyond reach the capacity to reliably support organizational transformation. This is so because only at these late action-logics do people regularly (and more and more intensively) inquire about and transform their own action for greater efficacy, and also because only at late action-logics do people seek to exercise shared-commitment-enhancing, mutually-transforming powers, not just unilaterally-forcing types of power that gradually erode others’ trust and commitment.

To determine the center-of-gravity action-logics of the key individual players, the 10-organization study uses one of several measures derived from Jane Loevinger’s Washington University Sentence Completion Test and adapted to work settings and leadership issues by Cook-Greuter and Torbert. These three closely related measures are Cook-Greuter’s (1999) Mature Adult Profile, Harthill’s Leadership Development Profile, and Torbert’s Global Leadership Profile (see Herdman & Torbert, 2010, and Torbert & Livne-Tarandach, 2009 for reliability and validity studies of the measure). In the 10-organization study, five of the ten organizations’ CEOs are measured as performing at relatively early action-logics (1 Diplomat, 2 Experts and 2 Achievers). It measures the other five CEOs and three of the four consultants as performing at the Strategist action-logic, and the fourth consultant as enacting the Alchemist action-logic. Table 3, below, summarizes the data from the study.

The four consultants worked in different combinations with the ten organizations for unusually long periods – an average of 4.2 years. Using various additional data sources, including organizational growth and profitability, customer and employee satisfaction, reputational measures, archival data, and “thick descriptions” (Geertz, 1983) of longitudinal cases, as well as a measure of organizational transformation to be described, the study calls itself a “retrospective field quasi-experiment” (Rooke & Torbert, 1998: 16).

Business and reputational measures showed that seven of the ten organizations improved dramatically during the intervention/studies, while the other three declined either mildly or dramatically. Based on the thick descriptions of the individual cases, three raters achieved perfect reliability (1.0) in scoring whether each organization transformed, remained at the same organizational action-logic, or regressed (they also achieved .90 reliability in agreeing how many transformations occurred in each organization). During the ten consulting interventions, the seven economically-and-reputationally-successful organizations all transformed (sometimes more than once) to later organizational action-logics. The three remaining organizations either remained at the same action-logic or, in one case, regressed. The initial main findings were that: (a) The five CEOs at the Strategist action-logic or beyond all supported positive organizational transformations and increased business success; and (b) by contrast, three of the five CEOs at earlier action-logics were associated with lack of transformations and even organizational regression and business failure.

The CEOs’ action-logic accounted for a statistically significant 42% of the variance in whether the organization positively transformed (Spearman’s rank order coefficient rho=.651, one-tailed \( p < .05 \)). Cohen (1983) classifies a “large effect size” as one that accounts for 25% of the variance in a correlational test (that is, \( r = .50 \)). Thus, a test that accounts for 42% of the variance, as this one did, represents an unusually robust empirical finding. Moreover, if one adds together the action-logic scores for the CEO and the lead consultant in each effort at
organizational change the resulting correlation accounts for 59% of the variance at the .01 level of significance (Torbert & Associates, 2004). The increase in percentage-of-the-variance-explained in the later analysis is due to the fact that the one Alchemist action-logic consultant led the only two engagements when pre-Strategist CEOs were associated with positive organizational transformation. In short, in these ten cases the developmental action-logic of the CEOs and their lead consultants emerged as the single largest cause in whether or not the organization transformed.

The foregoing study appears to offer powerful, quantitative confirmation for CDAI theory, practice, and method. But no critical reader will want to accept such results at face value. The critical reader will wish to inquire in greater detail how this “small-n” study coped with various potential threats to the Empirical Positivist, third-person, quantitative conception of validity-testing, and how it holds up against additional and different standards of validity associated with first-, and second-person research/practices, that we will presently adduce from the varied and dispersed social science literature on validity (Scheurich, 1997).

Table 3: Ten Organization Study Size & Type of Organization, Consultant Relationship, CEO Developmental Stage, and Organizational Transformation

<table>
<thead>
<tr>
<th>Type of Org’n (For-profit/Not-for-p)</th>
<th>Size (# of employees)</th>
<th>Length &amp; Type of Consulting Relationship</th>
<th>Lead Consultant’s Action-Logic</th>
<th>CEO Action-Logic</th>
<th>Organizational Transformation? (+ =yes; 0 =no change; - =regression)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Not-for-profit</td>
<td>325</td>
<td>5 years consulting &amp; board</td>
<td>Alchemist</td>
<td>Strategist</td>
<td>+ from conception to collaborative inquiry</td>
</tr>
<tr>
<td>2. For-profit</td>
<td>43</td>
<td>6 years consulting &amp; board</td>
<td>Alchemist</td>
<td>Strategist</td>
<td>+ from incorporation to collaborative inquiry</td>
</tr>
<tr>
<td>3. For-profit</td>
<td>10</td>
<td>7 years consulting &amp; management</td>
<td>Strategist</td>
<td>Strategist</td>
<td>+ from conception to experiments</td>
</tr>
<tr>
<td>4. For-profit</td>
<td>732</td>
<td>15 months consulting</td>
<td>Strategist</td>
<td>Strategist</td>
<td>+ from systematic productivity to collaborative inquiry</td>
</tr>
<tr>
<td>5. Not-for-profit</td>
<td>627</td>
<td>6 years consulting &amp; management</td>
<td>Alchemist</td>
<td>Strategist</td>
<td>+ from experiments to collaborative inquiry</td>
</tr>
<tr>
<td>6. Not-for-profit</td>
<td>847</td>
<td>5 years consulting &amp; board</td>
<td>Alchemist</td>
<td>Expert</td>
<td>+ from experiments to collaborative inquiry</td>
</tr>
<tr>
<td>7. For-profit</td>
<td>183</td>
<td>2 years consulting</td>
<td>Alchemist</td>
<td>Achiever</td>
<td>+ from experiments to systematic productivity</td>
</tr>
<tr>
<td>8. For-profit</td>
<td>1019</td>
<td>2 years consulting</td>
<td>Strategist</td>
<td>Achiever</td>
<td>0 systematic productivity</td>
</tr>
<tr>
<td>9. Not-for-profit</td>
<td>584</td>
<td>4 years consulting &amp; management</td>
<td>Strategist</td>
<td>Achiever</td>
<td>0 systematic productivity</td>
</tr>
<tr>
<td>10. Not-for-profit</td>
<td>481</td>
<td>4 years consulting</td>
<td>Alchemist</td>
<td>Diplomat</td>
<td>- regression from collaborative inquiry to incorporation</td>
</tr>
</tbody>
</table>
Testing the Third-Person, Internal and External Validity of the 10-Organization Study

Validity criteria that test the third-person generalizability of empirical findings "after-the-fact" are enumerated and described relatively exhaustively by Cook and Campbell (1979). Their conceptualization of validity has two general components, internal validity and external validity, defined as follows:

Internal validity refers to the approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of cause.

External validity refers to the approximate validity with which we can infer that the presumed causal relationship can be generalized to and across alternate measures of the cause and effect and across different types of persons, settings, and times. (Cook & Campbell, 1979, p. 37)

Cook and Campbell (1979) list 19 different potential threats to internal validity and 13 different threats to external validity. They suggest that researchers focus on the threats most likely to have a significant effect on the validity of their work. We will, therefore, here address only the most salient threats to the validity of the Rooke and Torbert (1998) study. (In Cook and Campbell's terms, the study is best described as a nonequivalent control group quasi-experimental design, whose “treatment” is the presence and action of a CEO and lead consultant at the Strategist action-logic or later and whose “effect” is organizational transformation.)

The most significant threats to internal validity in such a study are the interaction of selection and maturation, instrumentation, local history, and threats to statistical conclusion validity. And the most significant threat to external validity comes in the form of insufficient construct validity (Cook & Campbell, 1979). Another important threat to the external validity of the study would appear to come from the small sample size.

Let us start at the beginning. The internal validity threat of selection-maturation would arise in the Rooke and Torbert (1998) study if Strategist action-logic CEOs happened to be associated with types of organizations that had growth patterns systematically not encountered by the types of organizations headed by CEOs at earlier action-logics. In such a case, it could well be that extraneous causes, not CEOs’ and consultants’ action-logics, would account for the organizations’ transformation. In the Rooke and Torbert study, however, there was considerable variety: 1) in the size (10-1,019 employees, average=485); 2) in type (5 for-profit / 5 not-for-profit); and 3) in line of business (investing, automobiles, energy, consulting, education, health care). Moreover, the successes and failures in organizational transformation are not associated with any of these variables (e.g., two of the three organizations that failed to transform were not-for-profits, but three of the five not-for-profits succeeded in transforming).

The threat of instrumentation arises when there are scaling problems with the measurement of the dependent variable (organizational transformation, in this case)… such that changes are more likely to be measured in one group than the other. Looking, we find differences in the
baseline action-logics of organizational development of the different organizations, and we find that the three organizations unsuccessful in transforming were among the four organizations in the study that began at the Systematic Productivity action-logic (see Table 2). At first, this seems to suggest that the coding scheme the raters employed may not be sensitive to transformations above the Systematic Productivity action-logic, or that such late-action-logic transformation is much less likely to occur than transformations through the earlier action-logics (and all this could be explained as statistical regression toward the mean). However, a closer look reveals that six of the seven organizations that were coded as having transformed actually progressed to the Collaborative Inquiry organizational action-logic (beyond Systematic Productivity), thus showing that the dependent variable was in fact sensitive to such transformations and that they do occur with some frequency.

Another credible threat to internal validity, local history, is troublesome if there are events that only affect the experimental group and not the control group. Here, there were ten experimental groups of somewhat varying developmental configuration and no control groups, one might say. Or, one might say, there were five experimental groups (the five organizations with Strategist CEOs) and five non-Strategist-led control-group organizations. As far as we can tell, this threat of local history is substantially eliminated by the variety in geography (multi-national), industry (six industries), and market niche of the ten organizations in the Rooke and Torbert (1998) paper.

Lastly, threats to statistical conclusion validity also endanger the internal validity of studies in the Empirical Positivist tradition. Statistical conclusion validity concerns our ability to determine statistically significant (within a specified $\alpha$ level) co-variation between our independent and dependent variables (Cook & Campbell, 1979). In the focal study, the threats to statistical conclusion validity were minimized since the authors used the Spearman rank order test, which is the appropriate nonparametric statistical test, and found results that were statistically significant at the .01 level. (Note that nonparametric tests make fewer assumptions about normality of the distribution and interval distances between numbers, and that they are therefore less likely to make false assumptions.)

With regard to external validity of the measure of a person’s leadership action-logic, Rooke and Torbert’s (1998) detailed discussion of the history of reliability and validity studies of the sentence completion measure at that time, thus minimizing many of the threats to construct—and also, by definition, external—validity. A decade later, additional reliability and validity studies of the measure have further demonstrated its reliability and validity (McCauley et al, 2006; Torbert & Livne-Tarandach, 2009; Torbert et al, 2010).

The construct validity of the organizational action-logics can be claimed, less voluminously and less conclusively, on three grounds:

1. by the theoretical analogy between personal and organizational development (as shown in Table 1);
2. by the clinical usefulness of the developmental theory for organizations to the consultants themselves and their clients during their interventions (e.g., the consulting case offered
above; see also Fisher, Rooke, & Torbert, 2000, chapters 8-10, for thick qualitative descriptions of numerous interventions using CDAI); and

3. by the high inter-rater reliability achieved by the three coders in this study (again, 1.0 on whether and if so, which way, an organization transformed; and .90 on the exact number of transformations in each case).

But what about the small sample size in the 10-organization study? Isn’t that a huge barrier to claiming that the results are in any way externally generalizable to other organizations? (It’s always been amazing to me how it’s the quant jocks that jump in with these objections first, even though they’re the ones who ought to know better.)

In fact, the answer is “No.” The small sample size did introduce a slightly higher risk of a Type II error (falsely rejecting a valid finding), since the statistical power is slightly less than the conventional .80. But this small-sample-size effect would have affected the interpretation of the results only if a significant correlation had not been found. What a small sample that explains a high percentage of the variance indicates is how powerful a causal factor the independent variable is, for almost every recorded case must align with the hypothesis. Put differently, what an n of 10, accounting for 59% of the variance at the .01 level of statistical significance means is just the same as an n of 1,000 at the .01 level of statistical significance – namely, that the hypothesis is confirmed, with less than one in a hundred chances that the inference is in fact false. Put yet again differently, if the n had been 1,000 and the result had achieved the .01 level of statistical significance, then although the hypothesis would still be confirmed, the independent variable (CEOs’ & consultants’ action-logic, as measured by the LDP) might have accounted for a much lower percentage of the variance in the dependent variable and would therefore not have been demonstrated to be as powerful a causal factor as it has been demonstrated to be in this study.

At the same time, however, it is important to remain cautious about the generalizability of the findings in two regards. Since the largest business unit in the study had 1,019 employees, we cannot know whether the findings will hold for Fortune 500 size. Also, the organizations in this study, whether for-profit or not-for-profit, are all productive, economically-oriented, work organizations; hence, the findings may not be representative of all types of organizations (e.g., spiritual organizations, temporary political campaign organizations, families, or government agencies). On the other hand, the results should be generalizable to the more than 95% of business and competitive not-for-profit organizations that have 1,000 employees or less.

Other Third-Person Validity-Enhancing Criteria

Cook and Campbell (1979) are not the only authors who have addressed the validity of third-person research. For instance, Lincoln and Guba (1985) have advocated for methods that are likely to positively increase the validity and trustworthiness of objective social science, rather than explicating lists of threats to be minimized. The qualitative validity-enhancing methods that Lincoln and Guba recommend include:

1. conducting prolonged engagements;
2. engaging in persistent up-close observation; and
3. triangulating sources, methods, and investigators.
Let us review briefly how the Rooke and Torbert (1998) CDAI action/research in the 10-organization study fares in these terms.

1. the engagements were certainly prolonged (4.2 yr.s on average), with
2. persistent observation (the four participant/consultant/researchers intensively engaged at least the CEOs and the top management levels);
3. the researchers triangulated methods (by using an extensively validated psychometric measure to test the developmental stage of the CEO and many members of the top management teams and the consultants as well as using wide-ranging business indicators, interview data, and meeting-behavior data to make assessments about organizational development and success. The use of multiple coders who displayed a high level of inter-rater reliability also increased the credibility of the assessments. In terms of the 27 “flavors” of action research [Chandler & Torbert, 2003], the organizations that successfully transformed engaged in as many as 15 different kinds of action research).

These validity-enhancing postmodern interpretivist features of the study suggest that it produced credible findings and predictions (reinforcing the empirical positivist validity test findings described in the previous pages). Note that the researchers’ intimacy with the data is generated by the fact that they included themselves within the experiment and collected data on themselves as well as the other subjects.

**First- and Second-Person Validity Testing and Enhancing Methods Applied to the 10-Organization Study**

While Lincoln and Guba (1985) do address the objective, third-person aspects of qualitative validity, they also emphasize the techniques used to increase the trustworthiness of research by attending to the second-person aspects of research. Two additional, key techniques that they propose are (a) peer debriefing among researchers as a qualitative external check on the inquiry process; and (b) member checking, or direct testing of findings and interpretations with the human sources from which they have come. In Rooke and Torbert’s (1998; Torbert & Associates, 2004) 10-organization study, we find a high degree of both peer debriefing and member checking. By engaging each other as mutual co-researchers, the four consultants would repeatedly (at every possible break when directly engaged with clients) seek each other’s (dis)confirmation of the validity of their actions. Moreover, member checking is a vital, ongoing feature of research in the CDAI paradigm. All senior management members in the ten organizations who agreed to take the developmental psychometric measure were offered feedback about the results, along with careful inquiry about the participant’s sense of the validity of the result (further member checking). Seven of the ten CEOs had estimated themselves at the same action-logic as the LDP found; the rest agreed after discussion and further clinical debriefings of later action episodes. In a later study, we offer an example of a case when member checking about the LDP rating led to a change in both the member’s estimate and in the researcher’s view (McGuire, Palus & Torbert, 2007).

More generally, theories related to first- and second-person research encourage on-the-spot and at-the-moment validity tests. Thus, the first-person theory of “four territories of experience” (Torbert 1973; Torbert & Associates, 2004) permits any of us to test how many territories of
experience our awareness is embracing (the outside world, our own sensations as we know them from within, our own thoughts and feelings, and the dynamics of the attention itself) anytime we choose to investigate. Likewise, the second-person theory of four distinct, but interweavable speech acts that generate increasing efficacy as they are interwoven permits any of us in conversation the potential to test which we are missing as we are speaking (the four speech acts are named framing, advocating, illustrating, and inquiring [Torbert, 2000b; Torbert & Associates, 2004, ch. 2]). (Argyris' version of action science [Argyris, 1993; Argyris, Putnam, & Smith, 1985] offers a challenging discipline for going beyond mere member checking to testing whether the entire quality of interpersonal dialogues is such as to increase or decrease the likelihood that one is learning the most significant valid information available. Currently, increasing attention is being paid to the validity of intersubjective, second-person, "during-the-act" research [Bradbury & Lichtenstein, 2000; Heron, 1996; Reason & Bradbury, 2001; Torbert, 2000b].

Let us explore further, into the realm of second-and-first-person criteria of validity. In her article “Validity after Poststructuralism,” Lather (1993) introduces four additional types of validity that have implications for first-, second-, and third-person research/practice. Lather calls these qualitative, Postmodern interpretivist ways of enhancing validity: paralogical validity, ironic validity, rhizomatic validity, and voluptuous validity.

*Paralogical validity*, according to Lather, requires the researcher to develop methods that help her “unlearn her own privilege” (Lather, 1993, p680) and be open to multiple interpretations from the audience. Here, Lather uses the Lincoln & Guba categories of "peer debriefing" and "member checking" that we have already discussed above; so we will take this criterion as having been met by the ten-organization study, without further discussion.

*Ironic validity*, according to Lather, problematizes the existence of “truth.” It invites the researcher, writer, and readers to question the foundations of their epistemologies (their assumptions about what knowledge is and how to tell the difference between truth and error). For example, our two stories earlier (the 1st-person story of woodcarving and the 2nd-person story of consulting [told in a 3rd-person voice]), hopefully suggest arenas and voices for scientific truth-seeking that problematize the impersonal tone regulative of most of this article and of Empirical Positivist descriptions of studies in general.

In addition, developmental theory itself, properly understood, should problematize each person's sense of truth. For, in studying the theory (e.g., Kegan 1994, Torbert, 1991, Wilber, 1999) we come to recognize that, no matter what our action-logic, all our perceptions and conceptions are framed by assumptions that only a minority of other people share. How come any of us is so sure?

A third example of *ironic validity* is found in the hypothesis of the Rooke and Torbert (1998) study:

CEOs whose cognitive-emotional-sensory structure recognizes that there are multiple ways of framing reality and that personal and organizational transformations of structure require mutual, voluntary initiatives—not just single-framed hierarchical guidance—are more
likely to succeed in leading organizational transformation. (Rooke & Torbert, 1998; underline in original, italics added)

In other words, the ironic proposition of the ten-organization study is: leadership that relies primarily on unilateral causal power based on the leaders' “truth” is less likely to cause organizational transformation than leadership that “listens into the dark” beyond its current version of truth (because that leadership, based more on inquiry-in-the-present and mutually-transforming power than on unilateral power, is attuned to generating mutual causality and outcomes better than anyone's unilateral truth would have predicted at the outset).

*Rhizomatic validity*, Lather’s third type of validity (in analogy with the underground stems and aerial roots of rhizomes), fits jigsaw-puzzle-like with the mutual-power idea just mentioned. *Rhizomatic validity* requires the maintenance of contradiction by a listening and a reportage that both reflects, and is itself an instantiation of, the unexpected emerging present in all of its multi-voiced contradictoriness. In the ten-organization study this form of validity was enhanced by interviewing all members of the senior management teams early in the consulting processes before the consultants developed other preconceptions, with feedback to each member shortly afterwards of the verbatim (anonymous) comments of his or her peers, so that each "heard" the raw, possibly discordant voices of all one's significant others. The teams were then offered a non-compulsory opportunity to reflect on that feedback with those same peers. Usually, the first to volunteer was the person who had received the most unexpected negative feedback. Thus, that person, usually the most discordant and disliked before, suddenly became the most transparent and vulnerable, therefore playing a big role in setting a new norm of testing differences of perspective early and often in the subsequent organizational transformation effort.

Yet another example of *rhizomatic validity* (and, more generally, of 1st- and 2nd-person research/practice written up for a 3rd-person audience) is the book *Action Inquiry* (Torbert & Associates, 2004). It is full of vignettes, analyses, and action experiments described *in the voices of many different protagonists holding many different interpretive frameworks* (different action-logics). Lastly, to pick an example closer to your (the reader’s) current experience: we expect that different readers may be touched by different "moments" of this article, while feeling indifferent to, or alienated from, other sections… member check invited!

*Voluptuous validity*, Lather’s fourth and final type of validity-enhancing method, *voluptuous validity*, increases when the researcher is both engaged and self-reflexive in the study, not distanced and detached. Indeed, Lather “goes wild” here, espousing such engaged and self-reflexive practice “to the point of leaky, runaway, risky practice” (Lather, 1993, p. 686). A neophyte musician is encouraged "to play the difficult passages and mistakes loudly," in order to hear the mistakes better and to learn faster. Based on the earlier example of freefall carving and writing, would you call those practices runaway, risky practices? (I might call them more self-reflexive, disciplined dances.) Would you say that the practice of the consultant in the case study of the software company presented earlier (e.g., when he asks the two partners to switch organizational roles) exemplifies risky, engaged self-reflexivity? In any event, the landscape and the writing style provided through first- and second-person verbal and written action research descriptions surely promise to be slightly livelier, or at least less dessicated, than the traditional third-person peer-reviewed academic-research-journal article.
The notion of *voluptuous validity* offers a final opportunity to state why the LDP, based on CDAI theory, is so successful at pinpointing which CEOs and consultants successfully support organizational transformation in the ten-company study: *each later action-logic is increasingly open and committed to integrating action and single-, double-, and triple-loop inquiry* (“listening into the dark” “engaged and self-reflexive at each moment of practice”). *This increasing frequency of listening into the dark is likely to increase the frequency of timely, transforming actions and organizational results.* Because the CDAI paradigm at its core understands and enacts power as primarily mutual, and only secondarily and usually less effectively as unilateral... And because the vast majority of organizational members in all contract-organizations today operate at action-logics that treat unilateral power as real-er than mutual power... Organization-members’ behavior will initially tend to be heavily influenced by whom they regard as having the most conventionally-tamed unilateral power (e.g., a CEO or a lead consultant to an organization-wide strategic-action). Such CEOs must be able, by example, not just rhetoric, and through the liberating disciplines of timely action-projects, to lead mutually and thereby teach others to lead mutually as well. Exercising vulnerable, mutually-transforming power and inquiry in spontaneously timely action amidst others may constitute the essence of voluptuous validity.

**Validity-threats that Apply to Positivist Research more than to CDAI Research**

Once one commits in practice to first- and second-person action inquiry, some of Cook and Campbell's (1979) specific threats to internal and external validity are much less likely ever to become an issue in research theoretically and practically informed by CDAI. For example, Cook and Campbell (1979) address the threat of *hypothesis-guessing by subjects*, which is best avoided by making hypotheses hard to guess or deliberately giving subjects false hypotheses. These “remedies” (utilizing uninformed researchers and lying to subjects) are neither attractive, nor regarded as ethical in paradigms after the action turn, like cooperative ecological inquiry and Developmental Action Inquiry. Paradigms after the action turn invite researchers to test the efficacy of their own actions and assumptions with peers (Kahane, 2010; Senge, 1990; Scharmer, 2007; Torbert, 2000b), and invite all involved in the research to become “observant participants” (Torbert, 1991) who seek mutuality and trust through their actions and inquiries as one condition for the inquiry element of each timely action, as well as for the full mutuality necessary for successful relational and organizational transformations.

Another threat to the Empirical Positivist version of validity that applies much more lightly to CDAI is the threat of *experimenter expectations*. This threat describes any situation in which the researcher taints the subjects with his or her experimental goals. To reduce the effects of this threat, Cook and Campbell suggest employing experimenters with no expectations or false expectations (Cook & Campbell, 1979: 67). Since the “experimenters” in paradigms after the action turn are sometimes also key actors in the experiment, providing them with false expectations seems likely to be considered stupid, as well as unethical, and less likely to lead to efficacy and validity than:

1. empowering all research/ participants to aim high for themselves and the community of inquiry as a whole in terms of new actionable learning;
2. creating exercises for all research/participants to master performances synchronous with their own aims;

3. creating measures by which research/participants may estimate their own and the community’s performance;

4. assuring the primary experimenter(s) operate(s) at a late action-logic (since action inquirers at late action-logics are the least likely to rely on expectations to begin with and the most likely to recover from false expectations the fastest by testing the validity and efficacy of their own and others’ actions, theories, and assumptions in the course of the study); and

5. creating a context where the experimenter is motivated to help all research/participants equally (a condition the ten organization study meets because each organization was an independent, paying client and the division between experimental and control groups was made only analytically and only after the all the consulting assignments were complete).

A second way that social scientific research after the action turn combats the threat of experimenter expectations is by studying topics, such as adult development and organizational transformation in real time, as the 10-organization study does, where positive results are very desirable, but also very difficult to achieve. (Jane Loevinger, a self-confessed Expert and Empirical Positivist, once advised against using her original version of what now constitutes three-quarters of the items of the leadership-related sentence-completion measures in studies seeking to generate transformation... because, she said, she knew of no studies that showed anything other than “no change,” like most educational-intervention research. [And at that time, given the pre-action-turn-methods used both in research and in intervention practice, she was right (Torbert, 1981)].)

A third way that social scientific research after the action turn guards against the distorting effect of experimenter expectations is by using measures that are difficult to cheat on, no matter what experimenter or participants expectations may be. For example, there is specific research to show that even when research subjects are invited to “cheat up” on the Loevinger sentence completion measure (forerunner of the LDP), they almost never succeed (Redmore, 1976).

Fourth, experiments after the action turn concern real-time events of vital concern to the research participants (e.g., the future of their careers and their organizations), so they are much less likely to abdicate power to researcher/consultant/interventionists who are not acting credibly or effectively.

Fifth, the primary researcher/activists themselves (if they have developed to the Strategist action-logic or later and are attuned to the action-turn-spirit of acknowledging incongruities as a precondition for transformation) want to learn the truth about how and when their theories work or do not work in practice, since they want to increase their effectiveness in real-time in the future more than they want to fake results for the purpose of academic success.

For example, in the Rooke and Torbert (1998) study the primary purpose of the third-person research project, undertaken after the first-and-second-person research-and-consulting processes had been completed, was not to prove the success of the approach in general, but rather to learn more about why we clearly failed in certain cases. One way of generalizing what we learned is that, as consultants with the mission of helping small and
mid-sized organizations transform constructively, when we encounter an organization whose CEO does not measure at Strategist or later, we ought to direct as much attention to testing the validity of that finding and to helping the CEO transform (or find a different role) as we direct toward helping the organization more broadly to transform.

Testing the Comparative Validity of Two Paradigms

Having now reflected on the 10-Organization study and on the construction of this article as two opportunities to assess the various types of validity against which research in the CDAI paradigm can be tested, we next address the issue of the relative validity of the paradigm itself compared to a currently-legitimate scientific paradigm such as empirical positivism. Lichtenstein (2000), in a kind of review of research paradigms in management, reframed Taylor’s (1992) characterization of paradigm transitions, arguing that there are three criteria by which it is possible to judge the relative validity of two paradigms. The criteria Lichtenstein proposes are:

1. whether the new paradigm is more comprehensive than the former;
2. whether the new paradigm can self-reflectively explain why it is more effective, and
3. whether the new paradigm adequately eliminates an erroneous finding of the previous paradigm.

By analogy, Lichtenstein shows how quantum mechanics is more valid than Newtonian physics with its ability to explain more (e.g., subatomic behavior), explain why it can explain more (e.g., providing the dynamic equation through which mass and energy transform into one another), and by correcting errors in the Newtonian model (e.g., using warped space-time to correct Newton’s inaccurate predictions of planetary orbits). We will use these same criteria to adjudicate the validity claims of the CDAI meta-paradigm.

Is CDAI more Comprehensive than EP?

About the first criterion, asking whether the new paradigm (here, CDAI) is more comprehensive than other paradigms (here, EP), Lichtenstein (2000, p. 1352) writes:

Models that are more inclusive of all aspects of science and of human nature would be more valid than those that focus only on scientific frameworks... For example, research models that take into account the subjective quality of human perception while at the same time using objective measures of perceived phenomena would be more inclusive than those that focus on either a subjective account or an objective one alone.

As we believe we have shown, action inquiry is distinctive in its call to integrate objectivity, intersubjectivity, and subjectivity -- through third-, second-, and first-person research/practice. According to this paradigm, the truth-quest is insufficiently engaged if we are solely concerned with retrospective views of patterns there-and-then; we can also attend to and question our mutuality and the integrity of our actions here-and-now, as well as the interplay among first-, second-, and third-person processes in the past, present, and future.
By contrast, EP privileges third-person objectivity with regard to the past, as well as single-loop, hypothesis-testing learning over all the other modalities of learning – the subjective and inter-subjective, the present and the future, the double-loop and the triple-loop, the in-action as well as the in-reflection.

Can CDAI Reflectively Explain its Wider Comprehensiveness?

The second criterion of the validity of new paradigms is whether the new paradigm polemically disregards the previous theory, or, rather, is self-reflective as to how and why it is more comprehensive. CDAI values EP third-person research/practice as an opportunity to be challenged by, and to challenge, others not directly involved in the research… as well as valuing the additional aspects of second- and first-person research/practice presented here. The proposition is that the paradigms after the action turn represent more valid social science in their ability, unshared and unsought by EP, to improve the efficacy and inquiry of the parties involved in the original research and action, while also seeking to inform (and even potentially catalyze transformation in) third-persons, such as you, dear readers.

Put differently, CDAI does not dichotomize objective knowledge from inter-subjective meaning-making and subjective action, as do paradigms before the action turn. Instead, CDAI theory explains how humans and science can develop from impulsive subjectivity, through critical objectivity, and then on into active, constructive, mutual, and inquiring intersubjectivity that integrates subjectivity and objectivity in an increasingly timely fashion…

Does CDAI Eliminate an Erroneous Finding of EP?

Lastly, a new paradigm can be considered valid if it corrects an error embedded in the previous paradigm. From our perspective, the fundamental error in purely third-person, unidirectionally causal social science theories and methods is that "objective truth," "inter-subjective meaning," and "subjective consciousness" become increasingly alienated from one another and the possible mutualities between mind and body, self and other, technology and nature (human, animal, vegetal, and mineral) become obscured. This alienation is reflected in (a) economic models that, bizarrely, treat the natural environment as a variable exogenous to the economic system, its goods free, our harm to it uncounted as a cost; (b) political models that offer no vision of vulnerable, mutually-transformational power; (c) medical models that focus almost exclusively on bio-chemical sources of disease and little on subjective and intersubjective sources; and (d) an even more general tri-furcation among the true, the good, and the beautiful -- objective science, intersubjective ethics, and subjective aesthetics.

When we examine all the validity assessments taken together, we see that Developmental Action Inquiry responds to three broad types of validity concerns, whereas Empirical Positivist research is concerned predominately with what we have classified as third-person validity criteria. Research/practitioners engaged in CDAI test validity not only in third-person analytic terms primarily comprehensible to scientific communities, but also in the real-time action terms meaningful to, and usable by, second-person practitioner communities, as well as in terms of here-and-now, post-verbal, first-person awareness and action. Moreover, we have shown that CDAI avoids a fundamental source of error in EP, by including the researchers within the
research and not trying to fool other research participants about the hypotheses. Of course, we are just at the outset of finding helpful ways to characterize first- and second-person validity testing and how to integrate first-, second-, and third-person research and action. Our efforts by no means claim to be exhaustive and final, but are rather no more than introductory and suggestive.

In any event, you, dear readers, can no doubt by now see what the most demanding challenge will be, if you who read about this approach wish to engage with, use, and master the CDAI awareness, theory, practice, and empirical assessment tools to further test how to generate personal, organizational, and/or scientific transformation. The most demanding challenge will be, not how to master developmental theory and assessment methodologies (though these are as complex, or more so, than many other social science theories and empirical methodologies). Instead, by far the most demanding challenge will be, under what conditions and to what degree can you become sufficiently present in real-time to act in inquiring, mutual, timely ways?

To become a mature social scientist in the CDAI paradigm requires personal development across one’s adulthood toward later action-logics, through participation in organizations that move toward becoming real-time communities of inquiry, beginning as an aspirant and potentially transforming later to a peer, gaining increasing ability to relate, with both discipline and spontaneity, to an increasingly wide range of situations and worldviews, til one retires into the background of non-doing.

Conclusion

Collaborative Developmental Action Inquiry and Cooperative Ecological Inquiry—the social science paradigms theorized as embracing the action turn at the outset of this essay—are different from earlier paradigms in that their primary focus is on presencing inquiry for timely action amidst real-time interactions with others. CDAI, in particular, integrates first-person, adult spiritual inquiry and consciousness development in the emerging present with second-person, transformational, mutuality-seeking political action inquiry for the future, and third-person, objectivity-seeking social scientific inquiry about the past.

This essay is primarily a third-person form of social science, applying validity criteria to past studies. But it also points to the significance of first-person research/practice that generates adult development of consultants and CEOs to the Strategist action-logic or later, if second-person organizations are to transform toward communities of simultaneous action and inquiry. We have attempted to illustrate how, in CDAI, first-, second-, and third-person forms of action and inquiry require and reinforce one another.

If our readers wish to test the validity of this paradigm further for its possible value in your scientific, organizational, or personal lives, we believe you will need and want, not only to read further in the literature cited, but also to explore how to engage directly in first-person and second-person research/practice.
References


The Arc from the Body to Culture: How Affect, Proprioception, Kinesthesia, and Perceptual Imagery Shape Cultural Knowledge (and vice versa)

Michael Kimmel

Abstract: This essay approaches the complex triadic relation between concepts, body, and culture from an angle rooted in the empirical cognitive research of the past three decades or so. Specifically, it reviews approaches to how the body gives a substrate to and shapes cultural cognition. One main section examines how the body contributes to cultural learning and another how abstract cultural concepts and reasoning are grounded in sensorimotor experience, perception, and inner somatic states. Both sections’ purpose is to survey and briefly critique different theoretical frameworks, probe into their complementarity, and summarily evaluate to what extent higher cognition is embodied. The third main section outlines elements of an epistemological framework that connects culture, concepts, and the body in a sensible way. The paper closes with a discussion of how the embodied cognition paradigm advances a rapprochement of different areas both within cognitive research and beyond.

Keywords: Affect, concepts, convergent evidence, culture, embodiment, imagery, senses.

Introduction

The cognitive sciences are currently witnessing a surge of research that integrates questions that traditionally were the prerogative of the social sciences and humanities. One cornerstone of this development is an anti-Cartesian view of the human body as a shaper of higher cognition, somewhat parallel to the much cited “body-turn” in the social sciences. A growing camp of cognitive scientists now emphasizes that cognition is not disconnected from the human body, but grounded in sensory percepts, affect and other inner somatic experience, as well as imagery and sensorimotor activations. The debate revolves around the catchwords “embodiment” (of language or thought) and “(perceptual) grounding” or “perceptual simulation”. In this essay I will introduce empirical and theoretical developments of this field. The perspective applied takes into view the contribution of the body and bodily experience to cognition, thereby opening a compellingly fresh vista on ancient quandaries about the human condition bogged down by centuries of dualism and a general disregard for the body. Across academic disciplines contributions to this long-term paradigmatic agenda have cropped up, consolidated, and built up

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momentum towards a critical mass. The best indicator of “embodiment’s” coming of age is a currently emerging theory net that combines methods as well as viewpoints, radiates outwards, and stimulates empirical research.

The paper’s specific task is to demonstrate how recent research fundamentally reshapes our understanding of cultural concepts, reasoning, learning, and communication. In doing so, I will survey approaches from linguistics, psychology and anthropology that address these issues. I shall therefore deliberately insert the socio-cultural aspect into a triadic equation together with the body and cognition. This has a double implication: Researchers who understand culture as a generic property of being human use the notion of embodiment to emphasize that human knowledge is rooted not only in physical interaction with the world, but bodily mediated social intersubjectivity. A complementary viewpoint most typical of linguists and anthropologists investigates cultures (in plural), thus prompting questions like: “What is universal about the body and what varies?” and “How do human patterns of anatomy, locomotion, affect, etc. to the extent that they are transcultural, constrain or enable specific cultural manifestations?”

We may begin with a couple of summary observations about recent theorizing that I aim to flesh out in due course, both as regards points of consensus and certain rifts:

1. Cognitive theory is moving away from a view of meaning encapsulated in the “mind”. As the cognitive philosopher Mark Johnson succinctly formulates in an interview, a presently growing view sees meaning as “located in the complex, dynamic arc of interactions that includes brains, bodies, environments, and cultural artifacts and institutions” (Pires de Oliveira & de Souza Bittencourt, 2008, p. 45). Correspondingly, we are currently witnessing a growth of three overlapping research trends that focus on socio-cultural, embodied, and collective/distributed cognition, respectively. With this triple turn away from the internalistic and disembodied orientation of past cognitive theory research is reaching a point where it is effectively “growing into” the agenda formerly thought to belong to the social sciences.

2. In the embodiment paradigm, my present focus, the body shapes human reasoning and it is a medium for acquiring conceptual skills. Thus, many recent theories bootstrap higher levels of cognition from basic perceptual and bodily skills. With this we have come to a better, although not full, understanding of abstract concepts. I propose that the foundations of abstract thought constitute a key site for our understanding of the relation between body and culture, particularly as they relate to the important but vague notion of ideological “superstructure”. In this field, there is an essential complementariness between views that develop the compositional structure of complex schemas (i.e. morphology) and those that analyze the ontogenetic development of abstract ideas.

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2 To anticipate a possible misunderstanding it should be noted that a large body of literature on cultural cognition either operates outside the embodiment paradigm (e.g. by positing propositional cultural schema, narratives, reasoning or argumentation patterns without a notable embodied aspects to them) or discusses phenomena that include embodiment, but go beyond it. It is not my present intention to review these, a task that would take a separate paper (see Shore 1996, Cienki 1999, Kimmel 2002, 2004).
3. Embodied cognition views abstain from pitting the body against culture. They agree that it is false to assume that abstract “metaculture” is remote from and ontologically set apart from the body, as many traditional accounts both in the cognitive and social sciences presuppose. Many recent analyses show that bodily constituents (e.g. schemas of verticality, path, or balance) become scaffolded to shape abstract concepts, abstract concept learning often happens via bodily practices, and so forth.

4. The precise relation between body and culture is more debated. It depends on whether we ask cultural phenomenologists, cognitive linguists, or cross-cultural psychologists, to name a few key positions. In my view, a unilateral determination of culture by a (universal) body does not match up with the joint weight of comparative research, although some approaches selectively emphasize this. We need to take scholars seriously who emphasize that inchoate body experience can be inherently cultural or that cultural models in turn filter and modulate what the body contributes to cognition. Starting from an inherently reciprocal causation between culture and body, our task is to work out the specifics and examine the relative contribution of each by domain in a cross-cultural view.

5. Embodied theorizing is still far from monolithic regarding the specific aspects of the body it focuses on. Even when we only look at abstract concepts bodily cognition can refer to anything from kinesthetic or spatial schemas used to build metaphors, via inner affects to subtly “simulated” sensorimotor action tendencies. In fact, various strands of research rarely interact at present. As one important future site of inquiry, I shall pinpoint two complementary, but seldom combined viewpoints. One of these asks how cultural concepts help us reason and create inferences, while the other asks how cultural concepts become motivational by creating qualitatively saturated somatic states that give rise to “embodied commitments”.

The present challenge therefore lies in connecting various perspectives in a nuanced way. An integrative view should make space both for cognitive universals and cultural situatedness, allow for several types of embodiment (e.g. affective and perceptual simulation), and specify how methods and theories at different levels converge (e.g. abstracting and context-situated views). To do this, this paper must cultivate an epistemological sensitivity, while resting on the conviction that key issues like how universal the body is and how putative universals shape cultural ideas also decisively depend on data from as many fields and as many cultures as possible. This strategy alone will allow us to incrementally build domain-specific evidence, so as to avoid premature generalizations.

Here is the plan of the essay: The remainder of this section introduces what the “body” and “embodiment” mean and in reaction to which traditions the paradigm entered the arena. The second section discusses the body’s role in cultural learning and, as a contested but decisive battleground, the nature of abstract concepts. Along the way a host of largely complementary empirical approaches to embodied concept analysis are surveyed. The third section identifies a number of epistemological challenges we face in connecting the triad “culture”, “concepts”, and “body” without succumbing to reductionisms (such as typically result from a narrow scope of
research methods). The concluding section traces the ways in which the cultural side of the embodied cognition paradigm calls into question disciplinary boundaries. It fosters a rapprochement between cognitive scientists, anthropologists, (social) psychologists, sociologists, and linguists, and beyond this may establish a genuine interface within a “vertically integrated” common architecture that reaches out to the humanities (cf. Slingerland 2008).

**How Meaning Comes About**

I would like to begin with the fundamental debate in the cognitive sciences that revolves around the general nature of meaning, and specifically about whether it is relative to our experience of the world perceived around and in us or whether it is relative to other concepts. This is called the “symbol grounding problem” after Harnad (1990).

Historically, the theoretical antipode to my later topic has its roots in Cartesian mind-body dualism and formal theories of symbol processing. The so-called symbolic cognition paradigm builds on the assumption that knowledge is independent of the “hardware” it is implemented on. It is just stored and run there via the manipulation of symbols and algorithms. Thus, the mind-as-computer metaphor reigns supreme. Concepts are understood as software that is “loaded into” the mental hardware, while their invariant bodily substrate does not otherwise affect the content or process. Reasoning is understood as symbol manipulation. By consequence, the paradigm focuses on mental processes that come about via “amodal” representations, such as a computer would use (cf. Fodor, 1975). Another key metaphor of this field makes reference to the surface level of language, by explaining abstract knowledge as linguaform. They strive to model meaning as propositional structure.

Structuralist theories of language hinge on equally disembodied assumptions. They regard linguistic meaning as defined in a self-sustaining semantic network where one conceptual node either cross-references to or sets itself off from another (e.g. “light” = “opposite of dark”). These nodes do not relate to perceptual experience, but operate in a purely symbolic mental currency. Such theorizing is not wholly absurd, as children observe regularities in the usage of concepts, and gather stochastic patterns about usage situations and co-occurring concepts without necessarily having a sensorial experience of what the concept in question refers to (which is impossible with abstract concepts). Structuralist theories have recently received fuel by computational approaches of word and text comprehension, which demonstrate with some success that co-occurring words can, at least in principle, go a pretty long way in defining meaning (Landauer & Dumais, 1997; Burgess & Lund, 2000). This works via high-dimensional matrices that are calculated from millions of word co-occurrences, whilst the software remains completely ignorant of the world and its actual appearance.

The social sciences have a long pedigree of accounts of disembodied ideational structure. The great theorists thought of ideology as devoid of moorings in sensory experience, i.e. a superstructure remote to the senses and body. When Marx posited that material being determines (ideological) consciousness, he may have had the right idea, but did not focus on bodily experiences as a key shaper of social practices or beliefs. Hence, theories prior to Bourdieu and

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3 Note that I will avoid on purpose the debates on representationalism, objectivism vs. constructivism, and the mind-brain issue.
Foucault graft the Cartesian body-mind dualism onto a stratified architecture where disembodied ideational structures tower high above perceptual experience. Even today, mind-body dualism continues to make its mark in the cognitive analysis of cultural concepts. In psychology and linguistics, propositional structures are a classic way of explaining knowledge. For example, van Dijk (1980) inaugurated the analysis of complex narrative schemas by claiming that text elements incrementally become integrated into macro-propositions. In cognitive anthropology the traditional approach to cultural models like illness or cultural concepts like mind equally works with propositional networks (D’Andrade, 1976, 1987). The now very popular evolutionary epistemology paradigm stresses domain-specific principles (Hirschfeld et al., 1994) and construes them as organized by “hard-wired” modules for naïve biology, numeracy, essentialism, etc, that need not tie back to bodily experience, except for domains like naïve physics and the visual attribution of causality perhaps. Hence, many theories leave a troublesome gap with their neglect of the body.

Disembodied theorizing held sway, way into the 1990s. A now increasingly powerful countercurrent claims that, at some point, meanings have to refer back to the body, the senses, and what we experience of the world to really mean anything. This countercurrent made its appearance in various fields of academia that have become loosely associated since then. A share of current embodied views ultimately hark back to German Gestalt psychology (e.g. Rudolf Arnheim), albeit indirectly, to various older theories of metaphor (e.g. Giambattista Vico), to the phenomenology of the body (e.g. Maurice Merleau-Ponty), and to American Pragmatism (e.g. John Dewey) as well as, again indirectly, Empiricism (e.g. David Hume). On the whole the disenchantment with the dominant philosophical, linguistic, and psychological theories spawned the movement at several American West-Coast universities in the 1970s and 80s. Since its inception, a number of developments have contributed to the reinvigoration of embodied thinking in cognitive sciences:

- subjective methods such as phenomenology are reemerging again after having been rejected by behaviorism, including interesting new methodologies for tapping into lived experience (see below);
- powerful methods like fMRI scans or transcranial magnetic stimulation are becoming widely available (and more portable), thus paving the way for a better understanding of sensorimotor centers in the brain that feed into higher cognitive tasks like reading texts;
- clever experimental designs like recognition priming are being used by psychologists to tap into structures of the cognitive unconscious (like imagery underlying language comprehension);
- cognitive robotics has drawn attention to the body structures and sensory “kit” needed to perceive and act in a humanoid way;
- neuroscience heralds “mirror neurons”, which were originally discovered in the brains of macaque monkeys, as the biological mechanism underlying mimetic bodily behavior; as well as
- findings from social cognition research and related disciplines demonstrates the importance of bodily interaction to human development (see below).

Provisionally defined, embodiment means that the “higher” realms of cognition associated with conceptual knowledge and culture, build on the “lower” levels of bodily knowledge. In this
vein, my present aim will be to chart the terrain of approaches to the embodied grounding of cognition (for extensive summaries of the state-of-the-art see Gibbs, 2005; Pecher & Zwaan, 2005; Semin & Smith, 2008; Barsalou, 2008), i.e. the vertical architecture whereby our proprioception, kinesthesia, bodily affect, and the external sensorial apparatus inform cognition.

The Notion of the Body and Embodiment

As Violi (2008) points out, there is no unitary usage of the notion of embodiment. Many fields currently offer distinct approaches, which at best form a “theory net” of complementary elements and at worst, run the risk of creating misunderstandings. To avoid the latter we need to deal circumspectly with the notion. Embodiment theories are found at various levels and in varying disciplines, ranging from neuro-physiological and computational approaches, via approaches to a “cognitive unconscious” in linguistics and psychology, to more explicitly phenomenological views (Rohrer 2001). This also implies that the respective methods look at quite different phenomena from the (sub-)cellular level, via language and behavioral experiments, to social interactions in their cultural context.

The lynchpin of the argument, the body itself, is neither a self-evident nor a simple notion, despite appearances. When understood as a theoretical entity (as opposed to the mind, for instance), it is a construct of a complex sort. There is more than one way to understand it. What shows how much “body” is a construal dependent on cultural concepts of the body. The various medical traditions dramatically illustrate this. The Western biomedical body is surely not the same as that of Traditional Chinese Medicine (TCM) or the numerous other ethnomedical traditions. It is not easy to detect the biological universal underneath the different views. This construal-dependency opens up the possibility that the underlying actual body experiences differ across cultures, a point I shall get to later (cf. Csordas 1994). In philosophical discourse theories also vary in scope. While some look at the physiological organism itself, others focus on the brain and central nervous system that monitor body states and action, and still others include the way the body extends beyond the flesh and outwards by interpenetrating with its spatial, social or other environment (cf. Pires de Oliveira & de Souza Bittencourt, 2008, p. 23). The latter position emphasizes the situatedness and relatedness of human cognition (cf. Bernardez 2008). When we look at applied perspectives, these set their sights on the body quite differently, ranging from phenomenological body experience (“the lived body”), via the body schema/image as basis of personhood, as well as how the body perceives space and acts in it, to social theories about the body or metaphors of the body. In social science, too, we have seen a distinction between techniques of the body, the body as a source of symbolism, and the body as a locus of social power regimes (Scheper-Hughes & Lock, 1987). None of these perspectives is fully co-extensive with the other, neither notionally nor methodologically.

Next, how do we define “embodiment”? The expression suggests that something that appears to be in a way different from the body, such as the mind, is nonetheless shaped by it. The body with its capabilities for perception and action thus extends outwards into the realm of cognition. There are various ways of reading the claim that cognition is embodied. An almost trivial version is that cognitive processes have a material substrate that cannot be ignored for understanding mental processes. Simply put, “mind” research can benefit from “brain” research.

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Virtually everyone in the cognitive community agrees with this claim, although the emergence of mind from its material substrate is far from being understood. A stronger version of the embodiment claim is that the bodily substrate influences what a cognitive agent can do. At the level of perception, its structures and abilities constrain what can be meaningful, ultimately because organisms have developed cognitively in such a way that they can attune to their environments and meaningfully couple with them. They perceive in order to act or interact. Therefore there is no such thing as a neutral kind of percept. Because evaluations and potential motor actions are always implicated in perception, moving bodies can actively seek out percepts of useful kinds. These may have co-evolved with the environment and reflect an interaction history with it (affordances after Gibson 1979, see section 2). More radically, some authors such as Andy Clark suggest that we had best speak of supersized mind that extends out in its environment and requires “feedback, feed-forward and feed-around loops: loops that promiscuously criss-cross the boundaries of brain, body and world” (Clark, 2008, p. xxvii). The interactive nature of the body, in some views, actually makes concepts less representations of the world, rather than “control structures for the regulation of interaction with the external world” (Violi, 2008, p. 66). There are several noteworthy sides to “supersizing” that bear on the notion of culture: The exploitation of environmental structure is the basis for complex cognitive skills, as it allows cognitive offloading to cognitive artifacts which enable complex feats like collective and distributed cognition in teams (Hutchins, 1995). Even more fundamentally, cognition requires human interaction and intersubjectivity (Zlatev et. al, 2008) and “a complex, relationally grounded interpersonal social and cultural environment” (Violi, 2008, p. 73). To make this point, I shall later present Michael Tomasello’s approach to language learning and Daniel Stern’s work on the infant’s first developmental steps, both of which emerge from bodily interaction.

In the study of language and thought we again find embodiment claims of various strengths. Here, a developmental version of embodiment holds that sensorimotor knowledge in infant experience creates building blocks for concepts or helps to bootstrap them (Mandler, 1992, 2005; Johnson, 1987). A stronger version holds that conceptual states are accompanied by or constituted by real-time simulations of bodily states. Thinking, planning, and concepts do not involve any time-pressured action in a real environment (cf. Wilson’s 2002 notion of “offline” cognition); cognition is essentially simulative here and operates in an “as if” mode. Many recent studies have looked at such processes in language comprehension (Gibbs 2005). More generally this is based upon the idea that modality-specific sensory systems stand at the basis of cognitive processes (Barsalou, 2008). Variants of this basic claim include Damasio’s (1994) theory of emotion and self, Glenberg’s (1997) theory of memory, and Gallese’s (2003) theory of intersubjectivity, as well as forms of imagism by scholars like Lakoff, Johnson, Barsalou and Prinz that explain the representational content of concepts and will be discussed below in some detail.

Acquiring Culture through the Body

If we accept that the body is continuously shaped by living cultural lives, we can look at it as a culturalized substrate from which further aspects of cognition arise. What we need is a perspective on embodied cultural learning that addresses (a) procedural memory and sensory modalities as loci of learning and (b) specific patterns of bodily social interaction, including institutionalized practices. This section will, accordingly, discuss two strands of embodiment
literature. One of these understands culture as a comparative and ethnographic notion, while another investigates how bodily communication, seen as a generic trait of the culturality of all *homo sapiens*, plays a key role in cognitive maturation. While the flavor of the former strand is more phenomenological the latter is more “cognitive”.

**From “Habitus” to Cognitive Acquisition Studies**

An early influential attempt to bridge the chasm between the body and the cultural, ideational realm was Bourdieu’s (1977) theory of habitus. He claims that cultural knowledge is acquired via practices and that day-to-day bodily performance forms the substrate in which ethnicity, class, and gender are enacted. Among the Algerian Kabyles, his ethnographic fieldwork site, formative experiences are written into the household, agricultural work, the usage of artifacts, postures, and habits. For example, he describes a gendered system of homologies that define postures, practices, and loci in social space. All kinds of spatial relations that are up and outwards directed are male, while down and inwards directedness is female. Learning thus largely bypasses explicit instruction; it occurs mimetically by watching elders and peers and is then reproduced in embodied performance. These enacted practices belong to a “cultural unconscious” that naturalizes certain behaviors and aims, while making others unthinkable. Despite Bourdieu’s promising turn to ground ideology in practice and despite his embodied programmatic, he falls short of a viable theory of cultural learning and cultural knowledge. No specifiable motor capacities are involved in his account, just a blank-slate body – a “living memory pad” (see Slingerland, 2008, pp. 95f). This leaves to be explained how bodily knowledge undergirds human cognition and how imagery, affect, motivation, and general-purpose schemas come into the process. Bourdieu makes do without explicit consideration of scaffolding, i.e. how skills are superimposed on earlier or more generic ones. Second, no real account is given of concepts; by disavowing (conscious) thought as locus of culture he makes it seem as if they play little role. Third, Bourdieu’s analysis privileges learning by observation and participation over other channels. His view of acquiring habitus by osmosis, as it were, is incomplete in that it downplays both special formative situations outside everyday occurrences (e.g. in ritual) and the role of discourse or other explicit instruction. Thus, although current sensorimotor theories of learning and representation fit with Bourdieu’s emphasis of the preconscious dimension and mimetic learning, his theory is only a starting point.

In Bourdieu’s wake, a study by Jackson (1983a, pp. 336f) on initiation rites among the Kuranko of Sierra Leone emphasizes that ethical values like moderation are transmitted through kinesthetic and sensory learning. Novices have to learn to regulate their body in various ways. Apart from emotion control and facial impassivity under pain, there are taboos on calling for food, speaking out of turn, moving, or crying during the operations which is connected to an ethos of keeping secrets and oaths, forbearance and circumspection. Time spent in a smoke filled house after the novices return from sequestration reinforces the ability to withstand hardship. Keenness of smell is correlated with the newly acquired quality of discrimination, while controlling the eyes is related to the newly acquired sexual proprieties and mindfulness of forbidden domains. Finally, the enforced confinement during initiation serves to instill self-restraint and self-containment. Bodily self-mastery is the precondition for social and intellectual mastery. Correspondingly, Kuranko metaphors for initiation refer mostly to the sensorimotor domain. Much like in Bourdieu’s view, learning by observation and imitation are emphasized as
a key mechanism, but – like for Mead and Bateson (1942) who studied Balinese body habits – the assumed cultural dominance of the mimetic leaves room for other styles.

We find detailed acquisition models for embodied and perceptual knowledge in recent cognitive anthropological research with a developmental bent. For example, Toren (1993) shows how the symbolic and metaphoric dimension of placement in the social space of Fiji gradually develop in young children. Thus, from a bodily meaning that stands for itself space becomes symbolic of something other than itself. Similarly, Shore (1991) argues that the Samoan key concepts of mana and tapu, the first of which refers to the special potency of gods and chiefs while the second means “sacred”, “marked” or “set aside”, arise through embodied learning. This learning occurs in formative situations to which the concepts apply. Young Samoans begin to acquire these concepts through a position called fata’i which requires the young person to sit still in an upright position, with legs crossed, as well as with muscular control and a sense of containedness. The presence of a high-ranking chief is further associated with his central position and immobility as well as with salient features like size, brightness and shiny skin, which prototypically represent mana. In effect, mana and tapu manifest themselves in dance styles, gender styles, attributes of different chiefs, posture or rituals. In that sense the account is Bourdieu-like, but adds a conceptual dimension. The embodiment-induced concepts thus integrate complex proprioceptive and multisensory perceptual schemas from several settings that come to be associated with “awe” or “luck”. Another important case study by Shore (1996, pp. 258f) claims that cultural knowledge with a key status will be coded both in procedural (sensorimotor) and semantic memory to become “a total cognitive fact”. In the walkabout, an Aboriginal initiation ritual, the novice acquires a complex cultural schema by moving through the landscape, which serves as conceptual anchor for narratively expressed cultural notions. Thus, concepts are superimposed on the procedural memory of the walkabout. Progressively, procedural memory and semantic memory become interwoven as layers of abstract semantics are superimposed on procedural memory pegs. Instead of a “direct transfer of a narrative model to novices”, there is a “translation of the narrative into a sequence of kinesthetic experiences and performances” (Shore, 1996, p. 315).

In addition to ritual transmission, embodied acculturation can be embedded in everyday settings. In a truly encompassing case study Geurts (2002) discusses how the highly cultivated schema of balance and, more generally, all kinds of proprioceptive awareness come about among the Anlo-Ewe of Southern Ghana. While balance is a universal human propensity, here it is given special articulation and a distinct cultural direction from infancy on. This begins with limb flexing exercises and continues as infants learn to walk with the frequent exhortation “balance!” Balancing serves the head-carrying of heavy objects, but goes far beyond it. It is said to make free and level-headed. Posture and moving are also linked to the evaluation of a moral character, i.e. the cultivation of an elegant “non-shifty” walk of a purposeful person (but also somatic agility and adaptability). Finally, Geurts reports a host of balance-related metaphors like morality as balance and straightness, the cultural ideal of balancing between cultural and outside influences, as well as a diachronic balance of temperature and keeping a balanced audience in a specific ritual. Thus, somewhat in contrast with Bourdieu, balance is also discursively reflected and elaborated on explicitly for a bundle of cultural aims. From a theoretical viewpoint, it is significant that a sensorimotor schema like BALANCE straddles the fence between the embodied and symbolic domains (more on this later). Note, finally, that we have also seen many affective elements in the value of Kuranko moderation, Samoan tapu, and balancing among the Anlo-Ewe.
Thus, an undercurrent in all these examples concerns cultural emotion models, by which I understand the ability to evoke culturally shaped dynamic feeling states.

**Cultural Sensory Formations**

The cultural modulation of the body is also thrown into relief by the genre of “sensorial ethnography”, which follows the aim to “reconceptualize the senses as ways of thinking and knowing” (Howes, 2003, p. 50) and turns to cultural sensory formations. Ethnographies akin to Geurts’ work on Anlo-Ewe proprioception have emerged since the 1980s. They have, for example, drawn attention to the supreme importance of smell among the Ongee of the Andaman islands as well as among the Tuareg of Niger, the frequent precedence of hearing over vision with the Kaluli of Papua New Guinea, the Songhay’s cultivation of taste in Niger, and the Tzotzil-Mayas’ focus on temperature (surveyed in Classen, 1993; Howes, 2003; cf. also Stoller, 1989).

One point is that people in these cultures hierarchize sensory modalities differently than the often proclaimed (but perhaps equally reductionistic) Western visualism. Moreover, some ethnic groups like the Amazonian Desana cultivate cross-sensory awareness as such, while the Casinuahua of Peru distinguish a special mode of “synesthetic sight” in hallucinogenic experiences. The sensoria literature is relevant to our discussion both with regard to sensory acculturation processes that shape cultural bodies and how sense-scapes are endowed with further social significance, e.g. by concepts defined via sensory indices or metaphors. For example, the Ongee conceptualize the life cycle in terms of different kinds of scent. Or, the Desana, as Howes (2003, p. 46) says, code “every sensory quality with social meaning”.

Of equal interest are studies from the discipline of medical anthropology, which focuses on the nexus of body and knowledge in healing. Laderman (1994) emphasizes that cultural symbols acquire an embodied counterpart, when she recounts her own coming to feel a Malay humoral theory and two special concepts. The concept of *semangat* (“spirit of life”), that, when lost, is felt as a loss of bodily energy and confidence. The concept of *angin* (“inner winds”) determines a person’s temperament and character and equally is used by healers to diagnose bundles of felt bodily states.

The reader may ask herself what the possible ways of bodily involvement in acculturation and learning are. Here, an illuminating study by Hsu (1999) reports on the modes by which Traditional Chinese Medicine is transmitted. She did her fieldwork in three different settings. In the first setting the style of transmission was embodied via meditation (related to *qigong* practice). In the second it was embodied via ritual, using otherwise largely a-semantic learning of formulas. In the third setting, a modern TCM university, theoretical frameworks like the *Five Phases* were presented and gradually applied to diagnosis and healing. These exemplify yet another mode of embodied transmission based on specific imagery and metaphors, which however relies on explicit discourse. A similar (but binary) distinction of memory systems in cultural learning is found in Whitehouse’s (1995) work on religious rituals and initiation in Papua New Guinea.

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5 According to Shore’s survey of cognitive formats, these may be seen as non-linguistic cultural models that encompass olfactory, sound and visual models, kinesthetic schemas of posture, interpersonal space and muscle tone (as well as more abstract image schemas, see below). Furthermore he lists stylized action sets and performances and emotion models (Shore, 1996, pp. 59f).
Basic Resources of Space and Kinesthesia

On the linguistic and psychological side we see models that focus on how basic spatial schemas are acquired. One major debate revolves around image schemas, i.e. basic experiential gestalts that we get to know from sensorimotor experience in infancy (Johnson, 1987) and that include PATH, CONTAINER, LINK, BALANCE, CYCLE, SYMMETRY, CENTER-PERIPHERY, UP-DOWN, PART-WHOLE, SURFACE, CONTACT, SCALE, NEAR-FAR, STRAIGHT, MULTIPLEX-MASS, ENTITY and AGENCY. Infants acquire image schemas via motion, object manipulation and bodily proprioception. For example, what a container is can be directly experienced because we are ourselves containers for air, blood, and feces and because we experience what it means to be inside a room, going outside, and what a boundary is. Later in life the topological logic of “inside”, “boundary” and “outside” can be redeployed in many conceptual ways, e.g. to understand what a category is (see section on metaphor below). A detailed acquisition model for image schemas is found in Mandler (1992, 2005), although the cultural dimension plays little role here. However, others like Sinha and Jensen de López (2000) explore this dimension by comparing English and Danish children on the one hand and Zapotec children on the other hand regarding their understanding of containment. Children are exposed to cultural objects and environments which influence their ability to notice linguistic differences. Danish and English children are quicker to notice differences between “under” and “in”, because they are encouraged to play with upright cups, whereas Zapotec children use a smaller number of containers and use them more multi-functionally. Linguistic highlighting may play a further role in the acquisition of particular image schemas. In describing two objects, Korean makes children distinguish LOOSE FIT and TIGHT FIT through exposure to the verbs kkita and nehta, while English highlights CONTAINMENT and SUPPORT instead through the prepositions in and on (Bowerman 1996). A third influential factor are cultural performance styles in gait, posture, everyday action, and ritual such as illustrated by Geurts’ (2002) study of the BALANCE image schema (see above). Thus, children from all cultures have an innate ability to schematize certain basic spatial and kinesthetic relations, but this is modulated by cultural experience.

As to adult cognition, comparative psychological studies point to important differences concerning the perception of grounds and figures as well as causal attribution to either (Nisbett, 2003), spatial reference frames (Pedersen et al., 1998), manner and path of motion (Slobin, 2004), and objects (Lucy, 1996). These perceptual abilities and foci are influenced either by what a language encodes obligatorily (cf. Deutscher, 2010) or by various other cultural factors like the environment or cultural ideology. The partial cultural modulation of perceptual skills does not commit us to a strong relativity assumption, the so-called Sapir-Whorf hypothesis. In light of the present evidence it makes more sense to say that language and culture highlight a part of perceptual reality to attention, without strictly committing to it.

The acquisition of perceptual and actional schemas is not only interesting in its own right, it is equally important for understanding conceptual feats. One of the big discoveries since 1980 is the extent to which spatial and kinesthetic schemas are used to structure abstract concepts via conceptual mappings. Apparently, humans are endowed with a highly differentiated perceptual system geared to real-time action in a physical environment. Such “perceptual reasoning” is a resource that our forbearers possessed long before complex concepts came along and that lends itself to conceptual spin-offs. One model for how this happens claims that recurrent experiences
shape spatial (and in fact multimodal) schemas, which are then decoupled from their usage domain and can then be mapped to abstract domains. For example, physical purposes in space are most typically end-points of paths and we talk about non-physical purposes in the same way (“passing an exam”, “reaching a life goal”, etc). Johnson’s above cited account of image schemas suggests such a viewpoint. A related viewpoint emphasizes to a lesser degree the arbitrary projection of a general purpose image schema on an abstract target, but takes recourse to concrete formative settings much like in Shore’s Samoan account mentioned above in which source and target co-occur. Below I shall discuss a speculative, but linguistically plausible model by Grady (1997, 1999) who explains the way we learn some metaphors through “experiential metonymies” in some simple formative settings like being held tight be a parent, which are likely to occur in similar fashion in all cultures. This model is reinforced by a study of how infants learn to recognize metaphors as a phenomenon in its own right (Johnson, 1997).

Interpersonal Learning and the Body’s Role

The perspectives discussed so far all focus on the cultural environment as a context, but not specifically on the sociality and interactive nature of embodied learning. Our inquiry now shifts to the broader question of what it takes to become “conceptual” in the very first place. Developmental research suggests that bodily interaction with caregivers, gaze, gestures, and shared attention to objects are the touchstone of conceptual and linguistic abilities. To provide one well-known example, Tomasello’s (2008) studies of apes and children investigate how embodied resources are phylogenetically required to bootstrap more abstract linguistic faculties. The possibility to communicate through the body is the basis of all further cultural feats. The basic dimension shared by great apes is the direction of attention of others through one’s gaze or by pointing gestures. This allows requestive functions such as asking for a food item (the analog of linguistic demonstratives like “this”) and understanding the intentionality of others. A step further, the roots of human communication apparently lies in collaborative activities that require a shared intentionality in the pursuit of joint goals. At this level reciprocal “mindreading” is the unique faculty that humans possess, but not apes. (Because both participants know they are engaged in cooperative action, the pressure arises to establish mutual assumptions and communication norms). Following Tomasello, bodily communication again drives the development. Humans have the ability to pantomime and produce iconic gestures for expressing noun and verb concepts, which allows not only for immediate requesting, but for informing about things displaced in space and time. This prepares for a third and final step. The fact that gestures co-occur with vocal signs allow language to become arbitrary and symbolic, because it can piggyback on easy to understand iconic meanings of when the hands shape, draw, or enact something.

In another strand of developmental research, there is an interesting convergence between how shared intentionality and multimodal schemas develop. Stern (1985, 2010) highlights how multimodal correspondences in body expression of caregiver and baby establish schemas. For example, infants learn to match sound and tactile impressions when getting stroked by the mother with a voiced “THEEEeere”. The infant begins to repeat these contour-carrying patterns (in the sense that they change intensity over time and thereby create something akin to the tonal contour of a melody) and engage in a shared game with the mother. At the same time cross-modal patterns are established like contours over time in what one sees, feels, and hears. Stern calls
these basic embodied patterns that help the infant establish shared intentionality as well as a shared social world “vitality affect contours.”

The Role of the Body in Expert Skills and Super-individual Cognition

Many more complex conceptual operations require training in adulthood. However, conceptual cognition at this level still exploits perceptual resources inherent in the body and the environment on a regular basis. The cognitive anthropologist Edwin Hutchins (1995) has coined the term *cognitive artifacts*, which refers to externalized knowledge recorded in human artifacts. Written records are a basic artifact of this kind. In navigation, for example, dials, gauges, sextants, or logs provide sensate tools the mind can hook onto and thereby make complex tasks tractable. How these instruments, the different experts on a ship, each with their own skills, as well as the communication channels between them are arrayed and synchronized is crucial for the super-individual unit (i.e. the ship) to work. Some cognitive artifacts can even be projections of the visual imagination, as Hutchins shows in his analysis of Polynesian navigators, who use imaginary islands on the horizon as a fixation point to monitor the boat’s course.

Cultural learning also impacts our ability to engage in interactions and create intersubjectivity. Even mundane interactions typically require us to recognize meaningful *affordances*, i.e. enabling states for our next action perceived in real-time. In particular, we incorporate the dynamic flow of body signals (gestures, gaze, gait, etc.) from others into how we modulate our own actions. Just imagine a simple nonverbal negotiation of two persons sliding past each other in a narrow corridor. Sophisticated martial arts, dance, or bodywork skills that require years of apprenticeship equally highlight *enactive intersubjectivity* (Fuchs & de Jaegher, 2010). As Kimmel (2012) argues, dancers of tango argentino can fluidly improvise together only when they actively explore the partner at every moment and reciprocally make their bodies amenable to being sensed (e.g. a good follower strategically creates muscle chains allowing the leader to sense via her shoulder blade what her leg is up to.) Communication depends on a highly organized “tango body” with ingrained postural, muscle related, and attentional habits. While complex intersubjectivity skills fundamentally build on immediate perception, they place the senses in a continuum with functional concepts and regulative imagery. For example, tango experts stick to basic enabling states by imagining a constant “magnet” or “torch seeking the partner’s sternum.” This helps maintain rapport in any situation. More complex regulators keep track of functionally important sensory coalescences, e.g. an “energy ball” representing the couple’s joint weight at a given moment. Here, multi-channel sensory input gets blended “into” the image, including proprioception, the partner’s body, and space. The current position of the ball summarizes system-level information, allows dynamic feedback to be felt in *the flesh*, and thus provides a control structure for joint action. Finally, the tango case sheds light on the hidden cognitive substrate of dynamic decision making. Accomplished tango leaders fluidly combine basic micro-elements without enacting scripted step sequences and without much premeditation. They simply recognize a large repertory of dynamic configurations that signal affordances to exploit “on the fly” on a given trajectory or to nudge the couple to when still a bit away. Experts do this without enforcing anything, but by “soft-assembling” the interaction within repertoire related as well as sensory constraints (somatic feedback, music, available space).
Summary of this Section

The reviewed literature underwrites several general claims:

a) Key elements of a child’s acculturation are dependent on the various perceptual (visual, auditory, tactile, olfactory, gustatory), proprioceptive, and kinesthetic faculties of the body. What is acquired includes both performative and conceptual elements;

b) There is an important degree of contextual situatedness to the process of learning, which is modulated by cultural everyday habits, rituals, and institutions (as well as subject to discursive shaping, which I shall focus on only later);

c) There is an important element of cultural shaping in embodied learning: structures like the BALANCE schema seem at first blush to relate to a universal human body, but are not quite as universal in the way they are culturally enacted and modulated in usage;

d) From an enactive viewpoint, other bodies dynamically interpenetrate our own bodily actions and thereby provide a flux of resources for orienting our actions, just as cognitive artifacts do. Complex intersubjectivity skills like pair dance are a key site for studying cultural learning that interweaves the body with concept-like regulators.

To What Extent are Abstract Concepts Embodied?

A cognitive account of abstract concepts is decisive. Nothing less is at stake than how everyday commonsense and higher cognitive feats are connected. In particular, the study of worldviews, ethos, and ideology needs a cognitive account of representations removed from direct experience. In traditional views, the mind is the operative locus of these, while the body cannot shape what or how we think. As the embodied cognition paradigm is growing to maturity, a broader embodied perspective on elaborate abstractions like freedom, justice, truth, ownership, democracy, the Kantian Categorical Imperative, God, tapu, karma, and qi is taking shape. What role does the body play when people “think-feel” abstract cultural concepts? The basic mechanisms our inquiry is after relates to what the cultural anthropologist Fernandez (1986) dubbed the scaffolding of cultural knowledge from the inchoate, i.e. bodily experience, to the symbolic. A whole group of theoretical approaches now engages in what I would call “abstract concept analysis”. They pinpoint perceptual, sensorimotor, and other embodied structures in instances of higher cognition, notably how humans form, hold, and use elaborate abstract concepts. Several competing, but in many respects complementary, theories target how representational content is informed by embodied resources and how a morphological analysis of conceptual structure can be implemented.

Theoretical Approaches

Probably the most frequently discussed family of theories explains experiential grounding with respect to inferential features that concepts possess. Their common point is that they see concepts as mediated by various kinds of schemas that capture recurrent features of space, motion, or inner body experience. A first such account of abstract concepts is based on scripts.6

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6 Scripts are generic schemas of activities that encode stereotypical aspects of episodic structure by defining the action slots and the correct order of events that we culturally expect for this particular
and what needs to be done in a specific situation. It is hard to define democracy as a feature list, but to understand the concept we can imagine what people in a democracy do. Boroditsky & Prinz (2008, p. 103) claim that “the democracy script may include representations of hand raising and other means of casting votes”. Hence, a script-based concept is defined by the procedural knowledge that shapes actions and behavioral responses for the concept-defining situation. The basic idea is well established, as many experiments have demonstrated that sensorimotor action potentials arise in connection with a number of different concepts. For example, Chen and Bargh (1999) show that evaluatively loaded words like “love” or “hate” facilitate approach and avoidance gestures, respectively (for overviews see Gibbs, 2005; Pecher & Zwaan, 2005; or Semin & Smith 2008). Still, the limitation for explaining abstract concepts is obvious. Casting a paper in a ballot box or even a bundle of such scripts hardly represents the full meaning of voting, not to speak of democracy itself. The abstract concept seems to include agent configurations of voters and politicians, non-physical goals like bringing someone to power, concomitant feelings like duty or pride, etc. It is unclear to what extent scripts like convening to pass laws, choosing a leader, debating an issue (or more general script-like structures, say, unforeseen difficulty, trying in vain, belated success, wanting to avoid harm) are embodied. Ultimately, if human thinking, wanting, or evaluating are equally co-defined by traces of sensorimotor knowledge remains unclear.

The perceptual symbol systems (PSS) account by the psychologist Lawrence Barsalou aims to confront some of these problems (Barsalou, Yeh, Luka, Olseth, Mix & Wu, n.d.). A perceptual symbol refers to any aspect of experience from external percepts, via proprioception and affect, to the introspection of representational states. The PSS account claims that any kind of concept can be built compositionally from such perceptual symbols as temporary constructions in working memory. For thinking of a concrete, but creative notion like striped cloud we can join the concepts of “striped” and “cloud” in a single image. For the concept kindly we simulate a dynamic process that includes initial introspective states, followed by facial expressions, and actual behavior (this fits with the scripts approach). PSS also works well for proprioception and affect, e.g. an angel may be created by joining the image of how one thinks it looks like with feelings of consolation known through human relationships. But what about the more typical abstract concepts? Barsalou and Wiemer-Hastings (2005) ran a thought elicitation task for the concepts truth, freedom and invention and found that while concrete concepts involve objects, locations and behaviors, abstract concepts focus on social aspects of situations, people, communication and social institutions. The latter seem to have some perceptual content. More problematically, abstract concepts also involve a high proportion of introspections (goals, beliefs, evaluations/affects, and complex relations like if-then, temporal sequence, possession, or part-whole relations). This implies that abstract concepts involve relational properties, abstract social configurations, beliefs about beliefs, and many other hard to ground aspects. We don’t really know how perceptual these are in nature. In addition to clarifying this more precisely, PSS needs to be applied to a greater number of complex concepts to reach its ambitious aim.

An approach with almost as broad an agenda, but a far greater range of actual applications, has emerged in cognitive linguistics. The oldest theory in this family is the theory of conceptual activity. In the now canonical Restaurant Script example a customer needs to enter, sit down, choose, order, eat, pay the bill, and leave, in that order, with optional added slots like washing one’s hands. Classic scripts have defined roles, locations, props, entry conditions, and results, all bound to a scene.
metaphor. Scholars of metaphor have found linguistic and psycholinguistic evidence for reasoning about abstract event structure, values, mental activity, communication, and many others (Lakoff and Johnson, 1999). Their findings are expressed in formulas of the shape “target domain = source domain”, including patterns such as

<table>
<thead>
<tr>
<th>PURPOSES ARE PATH-END-POINTS</th>
<th>IDEAS ARE OBJECTS</th>
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<tbody>
<tr>
<td>CAUSES ARE FORCES</td>
<td>MINDS ARE CONTAINERS</td>
</tr>
<tr>
<td>GOODNESS IS UP</td>
<td>THEORIES ARE BUILDINGS</td>
</tr>
<tr>
<td>MORALITY IS UP</td>
<td>REASONING IS A PATH</td>
</tr>
<tr>
<td>POWER IS UP</td>
<td>LIFE IS A JOURNEY (PATH)</td>
</tr>
<tr>
<td>HONESTY/ TRUTH IS STRAIGHT</td>
<td>DEATH IS DEPARTURE (PATH)</td>
</tr>
<tr>
<td>DECIDING IS WEIGHING</td>
<td>CATEGORIES ARE CONTAINERS</td>
</tr>
<tr>
<td>REASONING IS A PATH</td>
<td>TOPICS ARE CONTAINERS</td>
</tr>
<tr>
<td>COMMUNICATION IS OBJECT TRANSFER</td>
<td>EVENTS ARE ACTIONS</td>
</tr>
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The evidential force of the claim that these are actual cognitive patterns comes mainly from the observation that linguistic, gestural, and pictorial realizations exhibit systematicity. For example, THEORIES ARE BUILDINGS may occur as “a resilient/ strong theory”, “collapse/ bring down”, “demolish/ wreck”, “theory building/ buttressing”, “theoretic fundaments/ building blocks”, and in many other expressions. In fact, most of us are able to come up with further creative example that other people will still understand because they fit the formula (or a related, but better delineated one like THEORIES ARE STRUCTURED SYSTEMS). The discovery of systematic linguistic clues has led Lakoff and Johnson (1980) to conclude that conceptual metaphors, i.e. permanently stored mappings from a concrete to an abstract domain, actually cause the observable linguistic metaphors. Although there has been some debate on whether conceptual metaphors are the only or obligatory way that language processing occurs (Gibbs 2005) the argument runs that humans structure abstract concepts through a mapping of an experientially well-understood gestalt. The reader is encouraged to check the terms on the “source domain” side of above examples and it becomes apparent that these source concepts are spatial or have a spatial element to them. More specifically, the gestalts that abstract concepts become grounded in via metaphors are embodied image schemas (see above). Conceptual metaphor theory claims that these intuitive embodied structures map on underspecified abstract domains to enrich or even constitute their meaning. Image-schematic mappings seem to underlie everyday concepts (see below) and a wide range of philosophical, political, economic, scientific, and mathematical concepts. Philosophy from the Pre-Socratics via Descartes and Kant to Analytic Philosophy and Rational Choice Theory is fundamentally metaphoric, based on FORCE, PATH, CONTAINER, LINK, or BALANCE image schemas (Lakoff & Johnson, 1999, pp. 337-548; cf. Holyoak & Thagard, 1995). For example, Kant’s notion of “Ends” presupposes PATHS, permissible actions towards them are based on FORCE CONSTRAINTS, and immoral actions are those that interfere with other people reaching their ends (Lakoff & Johnson, 1999, p. 428). In turn, people and their freedom become “ends-in-themselves” through Universal Reason, whereby the latter is the causal source (FORCE) for morality and being moral is obeying a categorical imperative for its own sake.

What are the limits of this embodiment account? Jackendoff (1992) argues that conceptual metaphors cannot explain concepts exhaustively, even when image schemas are present. The cultural concept of ownership relates to CONTAINER metaphors such as being “in” someone’s
possession, but non-metaphorical knowledge defines the sentiments of anger or the wish to see a thief punished (Prinz, 2002, see below). Hence, other kinds of embodied knowledge may be involved (as in the PSS account). More critically, many conceptual metaphors cannot be easily explained through image schemas at all. ARGUMENT IS WAR includes references to generals, strategy, allies, etc. Thus, elements get mapped to the abstract target domains that are themselves complex. A strategy, an item from the war domain, is certainly not anything simple image-schematic or merely spatial, even though certain aspects may be related to paths via yet different metaphors like “following a strategy”. Because of this complexity, the challenge here would be to find appropriate perceptual simulations of all the aspects of a source domain like war. Finally, for many metaphorical mappings to be created some proto-knowledge about the concept in question may need to be in place already, which is then presumably non-metaphoric. Not all conceptual metaphors are equally central in this respect. Some are created because a concept is intrinsically poor in structure and the concept can therefore be said to be metaphorically constituted (e.g. some scientific key concepts), while other conceptual metaphors simply contribute further inferential patterns for reasoning. The question is: do mappings simply exploit an existing image-schematic resemblance between the source and the inchoate knowledge of the target concept or do they project image schemas into a very weakly structured near-void?

Part of the answer is given by one of Lakoff’s students, Joseph Grady, who claims that a number of basic conceptual metaphors are rooted in prototypical bodily experiences from early childhood. Grady (1997, 1999) speaks of basic “experiential metonymies”. These are multisensory correlations in the parent-child relationship like AFFECTION IS WARMTH (→ body temperature), INTIMACY IS CLOSENESS (→ being held close by a caretaker), or RELATIONSHIPS ARE ENCLOSURES (→ living together). Others derive from affects like HAPPY IS UP (→ walking erectly), BAD IS STINKY (→ putrid food), and POWERFUL IS UP (→ wrestling) or come from object manipulation like UNDERSTANDING IS GRASPING (→ manual exploration), MORE IS UP (→ piling up objects), IMPORTANT IS BIG (→ visual salience) or FUNCTIONALITY IS STABILITY/ERECTNESS (→ shelter building, etc.). Finally, locomotion shapes TIME IS MOTION, STATES ARE LOCATIONS, and PURPOSES ARE DESIRED OBJECTS. Following Grady, both sensory (warm, stinky) and image-schematic (up-down, path) sources come to constitute the prototypical instance of the respective target concept. The metaphors in language come about because a source repeatedly co-occurs with the target in a concrete setting (or did so in our formative periods), so that a connection is created between an abstract concept of wider applicability and its most common experiential form. Grady calls these mappings “primary metaphors”, which compositionally inform several “complex metaphors”.

A third cognitive linguistic theory addresses the fact that, to explain complex concepts, we also need to account for the selection, combination, and interaction of conceptual inputs. Metaphor theory is restricted by its uni-directionality, whereas many concepts require multiple inputs or selectively recruit these both from source and target. Fauconnier and Turner (2002) remedy such shortcomings in their theory of conceptual integration networks (aka. blends). They claim that the selective co-projection of knowledge from two or more input spaces results in a blended space, where this knowledge is integrated so that novel inference can unfold and emergent structure of a complex sort can arise. The approach is semiotic and encompasses metaphor, analogy, counterfactual reasoning, creativity and art, ritual, and many other fields. Since, we just discussed metaphor, let us use one typical case as an example: Saying that “this surgeon is a butcher” creates the suggestion of incompetence neither from the source domain of
butchery (where healing is not the actual aim) nor from the target of surgery. The intended inference results by selectively projecting the tools and means of butchery onto a surgeon’s task. Only by actualizing the tension between source and target, once we “run the blend”, the inference arises that this surgeon cannot be doing a good job. Blending goes beyond a mere addition of constituents and describes how structure that is not predictable from any input alone comes about. Whether blending is more than a versatile semiotic notation remains debated (Gibbs, 2000; pace Coulson & van Petten, 2002). Although it provides a heuristic model, it remains non-predictive with regard to emergent structures and difficult to falsify. The major caveat for our context is that blending is rarely discussed for its relevance to embodiment. Only some very recent attempts focus on the role of embodied input structures explicitly. Slingerland (2008, p. 195) uses blending as “a special tool for tracing the manner in which basic emotional reactions can be harnessed and attached to novel stimuli”. Turner (2001, p. 44) and Deacon (2006) propose that blends can function as carriers for complex emotional effects. Deacon (2006, p. 48) suggests that “art brings together uncharacteristically associated emotional schemas” that can play out their tensions. Blends might project a visceral reaction originally reserved to a part of its input to the emergent structure. A religious blend invoking paradise as a garden transfers the soothing emotional response to nature to the potentially unsettling idea of death. We may also deploy the framework to think of the process whereby something qualitatively more complex emerges from basic inputs, e.g. cultural emotions like awe (appreciation + fragility) or nostalgia (happiness + fear of loss). Of course, somatic aspects like these are only one possible kind of embodied input structure; imagery would be another and muscular action potentials a third. Overall, blends are a promising tool for analysis because they allow for merging various kinds of embodied structures, including affects, with less embodied ones. As such there seems to be some potential to re-describe all previous theories in terms of blending, although this has not yet been attempted.

The Motivational and Affective Dimension of Concepts

It is interesting to note to what extent all the above theories focus on inferential aspects of concept meaning (with the exception of Slingerland and Deacon). However, there seems to be more to concepts, namely that which lends mere ideas affective, evaluative, and motivational saturation and gives rise to “embodied commitments” (Clore & Schnall, 2008). How the embodied dimension of concepts creates normative power is a question too important to pass over lightly. Thus, I shall survey a second family of theories, which has focused most on emotion concepts in the past, but could be applied on a broader basis. This family of theories appeals less to abstract imagery or inferences, and more to the visceral dimension and the felt internal milieu. They claim that proprioceptive-affective experiences are constitutive for meaning. Using a concept means activating a specific somatic state. A theory that has been widely received, but also contested is Damasio’s (1994, 1999, 2003) “somatic marker hypothesis”. He proposes that proprioceptive feedback from muscle tension, skin temperature, hunger, indigestion, homeostasis, or pain is central to cognitive functioning. Somatic markers are held to be involved in responding to a perceptual trigger situation, action preparation, and using body feedback from actions. Emotions, for example, are defined by a patterned set of somatic markers (which in turn explain differences like what makes anger different from fear). What makes this theory of interest for understanding abstract concepts? To Damasio, specific somatic feelings are irreducible aspects of all rational processes. He reports that the neurologically impaired who have a diminished range of affect (qua somatic feedback from one’s own body) also have difficulties making rational
decisions or altogether lack motivation to decide. This can either concern embodied preferences for choosing among options, or, depending on the version of the theory, the more specific claim that long-term outcomes are considered via embodied preferences (cf. Colombetti, 2008). Feelings provide a necessary somatic ingredient of reason, i.e. normative judgments and cost-benefit calculations. Thus, without somatic affects no sense of concern drives towards a decision. Without a bodily feeling acts lack full meaning. While negative somatic markers function as “alarm bells”, positive ones are “beacons of incentive” (Damasio, 1994, p. 174). While arguing for a necessary augmentation of the somatic core through symbolization and narrative, Damasio emphasizes the basic fact that somatic markers stamp valences on putative options. Compatible with this, recent emotion research speaks of core affect, a somatic primary form of meaning analysis determining whether a stimulus is helpful or harmful and whether an active behavioral response is required (Barrett 2006). Core affect appears to be a psychological primitive (Mesquita & Walker, 2003). All humans can distinguish feeling good from feeling bad (Barrett, 2006, p. 31) and all languages have words for them (Wierzbicka, 1992). The somatic dimensions most reliably and stably associated with concepts relate to the core dimensions of activation of the autonomous nervous system (arousal) and valence (pleasant/unpleasant). In addition, we find elements of action readiness and behavioral goal setting. This might still reduce the somatic to a few general patterns. Complexity enters through conceptual appraisals that seamlessly interweave with the somatic (Mesquita & Walker, 2003, p. 778). Several critical voices have remarked that conceptual forms must take on an organizing role (Parkinson, 1996; Parkinson et al., 2005; Ratner, 2000), because core affect does not neatly match specific triggers, specify any reactions, or have any precise physiological substrate in which a specific emotion is located, especially not in cultural comparison (Heider, 1991). Only a full conceptual appraisal of a situation tells us, for example, whether we pound our fists, cry, sulk, or become chillingly polite in response to anger.¹

Independent somatic components of emotions could also mix and fluctuate with the situation or the environment (Griffiths & Scarantino, 2008).

Complex concepts that accompany culture-specific articulations of affect have drawn substantial ethnographic interest. For instance, Renato Rosaldo (1984) discusses the culture-specific concept liget of the Ilongot of the Philippines (glossed as energy, passion, driving force). He also gives an account of how he suddenly understood the Ilongot headhunters upon being bereft (his wife had a fatal accident) and experiencing a similar state of rage. His self-report underscores the importance of empathically experiencing somatic marker arrays. Further cultural concepts with a strong emotion component are surveyed by Wierzbicka (1992, pp. 135-179). Note that all concepts briefly glossed in what follows go with elaborate cultural theories: Japanese amae (“wish to be interdependently loved”), Javanese sungkan (“polite restraint not to disturb the equanimity of equals”), Ifaluk sago (a mix of compassion, love and sadness), and Tahitian arofa (a mix of empathy, pity and compassion). In all these cases the appraisal of the emotion triggers and processes is analyzable into (potentially universal) primary components.

¹ Integrative approaches like Scherer (2000) or Lewis (2005) try to model particular patterns of synchronization between the embodied and appraisal related subsystems within a non-linear dynamic systems framework (i.e. reciprocal, recursive, and multi-causal processes whereby higher-level effects can emerge). This allows us to pinpoint event onsets that kick off further events in a non-linear, intertwined process. However, it makes little advance for understanding types of complex cultural concepts and their affective components.
In psychology much of the current debate still revolves narrowly around emotion concepts as such, rather than taking abstract concepts (including cultural key notions) as a point of departure for inquiring into the somatic affect matrix they elicit. However, where ideological appraisals are concerned, Tomkins’ (1991) affect-script account proposes an interesting starting point. He argues that basic affects, together with their distinct physiological profiles (e.g. enjoyment creates a rapidly relaxed tonus), define classes of behavioral scripts. Tomkins experimentally demonstrates that affective scripts correlate with ideological preferences along the humanistic vs. normative dimensions. This is somewhat similar to the study by Caspers et al. (2011) who describe neural patterns for collectivism vs. individualism. The limitation remains that both merely correlate affect with highly general cognitive orientations. We know very little about which somato-visceral signatures go with specific ideological concepts. Future case studies might emulate the style of Slingerl and (2005, 2008) who applies somatic marker theory to ancient Chinese ethics, hence cultural concepts designed to evoke specific normative feelings. He investigates how ethical discourses exploit the linkage between the somato-affective and conceptual such that rhetoricians map familiar visceral responses to new trigger concepts, often via metaphor.

A view publicized under the banner of “affect logic” attempts to shed light on the affect matrix of ideological concepts. When the theory was first articulated by Ciompi (1997) it aimed to trace the co-evolution of affective – hence, embodied – and cognitive states. Ciompi starts from clinical evidence to investigate how thought and affect create two-way trade-offs and stabilize into mutually supporting patterns over time. Specifically, repeatedly activated feeling and thinking trajectories become entrenched as “tracks” and may ultimately achieve conceptual closure, thus creating mentalities with particular properties to them. For example, a psychotic-phobic creates an intrinsic world (“Eigenwelt”) of fear in which all cognitions align with this dominant affect (“Leitgefühl”). The latter select for concepts in memory that are compatible with them, and activate them while suppressing others. Such trade-offs between affect and cognition do not only characterize disorders; even the “neutral” affects of the mundane world and the “disembodied” feel of abstract reasoning work like this. What is more, these trade-offs are held to inform various self-similar scales, somewhat after the fashion of mathematical fractals. Focusing on collective mentalities, Ciompi and Endert (2011) extend the theory into what we may call a historic-genetic account. They examine the affect logic underlying National Socialism, the Arab-Israeli conflict, the relation between Islam and the West, and Obama’s election. Again, dominant affects act as facilitators or inhibitors, for example when extreme anger leads one to polarize conceptually and to assign blame to scapegoats. Mechanisms like group resonance and multiplication add to this. Even individual affects of a charismatic leader can enter into reinforcement loops with feedback from the masses, e.g. when the German people’s enthusiastic feedback boosted Hitler’s self-stylization as a Messiah. Importantly, general affective-cognitive mechanisms apply to quite different dominant affects and these affects in turn can be realized within yet more specific historically situated concepts. The dominant affects of Nazism were anger and hatred, which were coupled with specific concepts like the master race ideology and anti-semitism. In Islam the dominant affect of a mystic “love of the Whole” couples with a belief in social equality and a personally mediated, yet abstract God. In the current crisis of the Arab world affects of shame and weakness couple with conservatism and the belief that lacking secular
power means having deviated from God’s path. Feelings like weakness or shame are somatically realized. At the positive end of the continuum, feelings of solidarity, love, joy or empathy, all of which enhance somatic well-being, can become self-reinforcing. In president Obama’s electoral campaign the affects of sympathy, trust, and hope kicked off an unprecedented wave of solidarity. Generally, the collective level brings “we-feelings” into play as mediators. These are conceptually reflected in ideas like the Nazi Volksgemeinschaft or the umma in the Islamic Renaissance. They may historically spring from reactions to shame affects (by the victors of the 1st World War, by Western economic dominance), but also from a need for renewed perspectives as in the case of Obama. To explain the dynamic properties of dominant affects Ciompi applies a systems theoretical viewpoint. Systems of affect logic tend to create group-specific mentalities that become self-reinforcing at times by gravitating towards attractors, although when they experience tension unexpected “leaps” into new stable states equally occur, e.g. after the break-down of the Third Reich. Finally, the book also analyzes why belief systems clash. The affective incompatibility of collective mentalities often makes it near-impossible to defuse powder-kegs such the Arab-Israeli conflict. Affective filters make the two parties perceive dissimilar issues and sources of conflict, while the tie to collective identities and the group history (such as the Shoah) entrench the conflict further. In sum, Ciompi and Endert’s view focuses on how the relation between affects and concepts plays out over time. It traces why ideological concepts come to be established against the backdrop of dominant embodied affects with a main emphasis on the top-down effects of affective macro-systems. The theory’s merit is its attempt to span different levels of analysis, whereas a shortcoming for our purposes remains that it seldom becomes very specific in analyzing the somatic states underlying affect.

An approach from a non-cognitive background launches its inquiry from complex somatic matrixes and the cultural dimension of bodily experience. Cultural phenomenology (Csordas 1990, 1994a, 1999) examines unique ways in which the “lived body” unfolds in experiences of and cultural practices surrounding sickness, ritual, dance and sports, healing, and music. Csordas deliberately moves away from representational theories that see bodies as symbols of cultural ideology, enacted metaphors, or anything else in a “stand-for” relation. He emphasizes a primary level of meaning where experiential qualities stand for themselves, thus bringing the inchoate, pre-representational layers of experience into focus. Somatic experience is inherently meaningful and represents the “existential ground of culture” by shaping the lived self. This view seems eminently compatible with Damasio’s emphasis that the ongoing stream of body feedback is the basis of the self and primary for creating meaning. However, while Damasio writes on a (universal) core consciousness from a neurological perspective, Csordas focuses on the complex cultural phenomena and apparent multidimensional somatic marking. Contributions in the 1994 volume trace this in cultural body images (e.g. obesity), suffering (e.g., in torture and rape) and culture-bound syndromes, such as anorexia, Victorian hysteria, Central American susto, etc. For example, the experience of nervios in Latino communities is expressed as incorporating foreign sensations, loss of bodily control, or feelings of fragmentation and absence (Low, 1994). Somatically marked symptoms surface metaphorically, together with literal language that expresses symptoms like heat, trembling, or perspiration. So where does conceptuality enter this framework emphasizing the pre-objectified and pre-reflexive level of bodily experience? A first answer is that the mediating power of metaphor elevates inchoate somatic states to a conceptual level. A related answer is that concepts arise through (often, but not necessarily metaphoric) discursive acts that causally objectify somatic state, e.g. spontaneous and pre-conceptual feelings that get objectified by healers as “being possessed by a demon”. The causal interpretation is then
back-projected to the inchoate somatic experience and provides a way of changing it. The third answer is that pre-objectified somatics are seen as functional concept-equivalents, insofar as they stamp valences on options that prepare for complex actions. Several studies reviewed by Csordas point to an autonomous physiological level at which bodies (re)act in genuinely cultural ways. Thus, once we take the position that concepts are for action “conceptualness” in the sense of reflexivity or focal awareness is not a requirement. From the present perspective, cultural phenomenology seems to provide a kind of compositional, if not always systematic, morphology of complex somatic states and some studies specify how acts of objectification meld inferential signals into inchoately somatic states of bodily being.

Lessons for an Integrative Theory of Concept Analysis

In summary, no single theoretical framework for embodied concept analysis is currently able to provide a comprehensive account for all abstract concepts. Even their joint weight cannot fully reduce abstractions to perceptually grounded elements. The question to what extent abstraction is grounded must remain open pending further developments (e.g. concerning abstract scripts, relational and introspective knowledge). For the time being, mixed models can claim much attractiveness, such as Shore’s model of procedural-cum-semantic cultural learning (1996), the double-coding approach by Sadoski and Paivio (2001), or Louwerse and Jeuniaux’s (2008) integration attempt between semantic web and simulation approaches. However, the theory landscape gives us a fair idea of what a more integrative theory will require. I have suggested that the major watershed in the current strands of theorizing runs between a somato-visceral, affective and motivational viewpoint on the one hand and a focus on complex inference and the deployment of mapped schemas on the other hand. Ultimately a cognitive approach to cultural embodiment will need to address the motivational and inferential power of concepts in conjunction. From the viewpoint of a given abstract concept the analysis may include any combination of the following dimensions: (1) perceptual features of the situation that trigger the concept, (2) typical behaviors and action scripts, (3) a somatic core affect with a positive or negative basic valence, (4) a more complex and culturally situated somato-affective quality, (5) an image-schematic ontology of the event itself (e.g. an object moving on a path over time) or other kinds of image-schematic input structures, and (6) a combinatorial model that explains how the inputs give rise to the overall concept morphology. A mature paradigm should integrate all of these dimensions.

All this does not imply that every conceptual act involves the body to the same degree; quite the contrary. As an illustration take some religious metaphors, presupposing, for the sake of argument, that most individuals of a group represent the concepts in approximately the same way. Conceptualizing God as fire, energy flow, flash, or felt potency invites affectively and sensorially saturated imagery, which is grounded in the bodily experience of some religious people. By contrast, conceptualizing the deity as residing in an abode above us, as a father or as a king refers to the social domain and usually functions to create inferences rather than evoking a somatic experience of potency. (While some may really feel dwarfed physically or experience filial love within, when we look at it on a gradient the verticality, kinship, and royalty metaphors produce much less saturated somatic experiences than fire, flow, light, or strength metaphors.) One could also say that the main focus of the concepts differs a bit in usage. So researchers should be aware of the fact that embodiment phenomena occur on a gradient. It may well be that a concept is
embodied in one way and not another. In any case, several levels require an explanation. It won’t do to reduce concepts to a single dimension like inferential power and to evaluate the embodiment issue in those limited terms only. We therefore need sub-theories, of which several are presently available.

**A Selection of Cultural Domains Where Abstract Concept Analysis has been Applied**

As socio-cultural and embodied theories of concepts are coming of age, the embodiment paradigm needs the application to a range of diverse conceptual domains, if possible across cultures. Such analyses are cropping up in many important domains, four of which I shall now outline. The findings shall allow me to reiterate the point that two stories of embodied grounding can be told in almost any field, one more somato-affective and the other more inferential.

In the study of time concepts we see both levels. At one level, time is an experiential fundamental that enters into the experience of everything else. It is embodied in the body-clock, an inchoate feel of time-fl ow coming about through breathing, heartbeat, locomotion, mental states that change, or visual flow, as well as a periodic bodily urges such as hunger and sleep. It seems that universal neural mechanisms underlie the span of the “felt present moment”, at maximum 3 seconds (Evans, 2004). At a second, linguistically mediated level reasoning about time becomes possible. It draws on a conceptual “master mapping” TIME IS SPACE that is apparently licensed by the experiential correlation between these two domains. Specifically, time is conceptualized either as motion or as location. Besides this general pattern, some culture-specific elaborations are documented concerning the orientation of the time axis and who moves on it, the direction of future and past, as well as the variety of time models (Alverson, 1994; Yu, 1998; Boroditsky, 2001, Nuñez & Sweetser, 2006). Finally, time aspects like reckoning in clock or calendar time or cultural constructions of the past are culturally highly variable (Munn, 1992).

In the field of self concepts we again have reason to believe that a basic sense of self is rooted in somatic experience. Damasio’s (1999) concept of “core consciousness” refers to a moment-by-moment automatic awareness of our embodied state that arises via a flow of intero-, proprio- and exteroceptive input. Damasio explains subjectivity as grounded in somatic signals of changes from one moment to the next. The counterpart to core consciousness, which comes in pulses activated by the present situation, are triggered memories at the conceptual level. It is here that metaphorical mappings for the self are found. Metaphorical self concepts focus variously on the aspects of boundaries, control and regulation, continuity, parts/ layers, essences, autonomy/ interdependency, and agency (Lakoff & Johnson 1999, pp. 267ff.; Hirose, 2002). It is easy to speculate how the most widespread metaphors emanate directly from various aspects of self phenomenology. SELF CONTROL IS OBJECT CONTROL and SELF CONTROL IS MOVEMENT OF AN OBJECT relates to a felt bodily sense of agency, while SELF CONTROL IS POSSESSION relates to a typical instance of object control, possession. The locational self, i.e. SELF CONTROL IS BEING IN ONE’S NORMAL LOCATION, is motivated by the human body schema and the perspectival nature of experience. ATTENTIONAL SELF CONTROL IS HAVING THE SELF’S PARTS TOGETHER corresponds to the experience of focally situated attention. An experiential motivation that is perhaps less bodily is SELF ROLES ARE DIFFERENT LOCATIONS ONE MOVES BETWEEN. It seems to derive from the social experience that being in different places leads to different ways of self-experiencing. SELF-
EXAMINATION IS GETTING OUTSIDE THE SELF CONTAINER is based on an experiential mapping from visual perception, not proprioception. Finally, some metaphors may not much correspond to somatic marker information. We often talk of a split self in which SUBJECT AND SELF ARE INTERACTING AGENTS (adversaries, friends, interlocutors, caretakers, masters, controllers) and an essential self THE TRUE SELF IS AN ESSENTIAL SUBSTANCE OR OBJECT (as hidden inner layer, an object to be found). It may be that these are less based on embodied experience. Finally, we may note that both the ethnographic and cultural psychological literatures are replete with claims of interdependent selves, i.e. selves reaching out across the skin barrier and privileging group agency over individual agency in non-Western societies (cf. Markus & Kitayama, 1991). These have not yet been discussed from a genuinely embodied angle to my knowledge, but such an interactional phenomenology could be rooted in recent theorizing about intersubjectivity. We know that attunement to or complex co-regulation with others is constitutive for the self (Stern, 1985), that our bodies regularly become continuous with other bodies in a super-individual embodiment, and that we routinely create body “extensions” forth into the environment (Clark, 2008).

Concepts for morality constitute a domain where somato-affective and more metaphoric-inferential approaches are both needed. According to Prinz, a philosopher who champions the former aspect, moral judgments such as good/ bad, right/ wrong, justice, obligation, permission, entitlement or responsibility are ultimately grounded in emotions and these in turn are observations of our sensorimotor states, for example, an aversive response. Thus, “[t]o recognize the moral value of an event is […] to perceive the perturbation that it causes” (Prinz, 2005, p. 99). Moral concepts are stored records of perceptuo-motor states, specifically of the preparations for action that accompany emotions (e.g. repelling for something disgusting). Since morality is a fairly complex domain, it is excellent for demonstrating that the somato-affective and motivational aspects highlighted by Prinz’s approach cannot constitute a full theory, although some metaphors for morality per se seem to be compatible with Prinz’s claim about stored records of perceptual-motor state. Following Lakoff and Johnson (1999, chapter 14) we find the conceptual metaphors MORALITY IS PHYSICAL STRENGTH and MORALITY IS RESISTING A FORCE, BEING GOOD IS BEING UPRIGHT/ DOING EVIL IS FALLING, and MORALITY IS STAYING ON A STRAIGHT PATH. Arguably, these force image schemas are not kinetic abstractions, but can be felt within as embodied qualities. The awareness of moral strength may be felt inside one’s body container, temptations to be immoral may create sensorimotor activations which the conscience resist only by keeping these impulses “in check”. This can even be felt as sapping one’s strength. One somewhat further reaching aspect of morality for which conceptual metaphor is apparently needed revolves around specific reasoning about just retribution, revenge, and related cultural notions. This involves a moral accounting model, which is partly based on a BALANCE image schema, but also on non-image-schematic notions of bookkeeping. Interpersonal interaction should be like an exchange of commodities whose values have equal weight. Retribution is about “setting the balance straight”, fairness is about “paying debts”. It contradistinction to the moral strength metaphors, it is open to debate whether these metaphors produce direct sensorimotor activations of the same kind. Finally, although there is little comparative or historical research

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8 Interestingly, the pioneering experiment by Caspers at al. (2011) discovered neural activation patterns that point to different processing strategies of moral issues in collectivists and individualists, respectively. Although caution is warranted in interpreting the findings, they may suggest that the relative proportion of somato-affective and inferential elements varies with personality.
here (pace Slingerland 2004, 2008), it is obvious that at such a higher level of reasoning embodied motivations for morality are secondary to cultural ideology.

In the religious field, finally, there are a number of theories which emphasize primary somato-affective qualities. James (1902) and many after him argued that religious experience resides in feelings that accompany conceptual appraisals. More recent phenomenological approaches emphasize the pre-reflexive dimension, like Csordas’ (1993, 1994b) notion of “somatic modes of attention” in religious experience. The somato-affective element in religion is well known from sensory regimes (kneeling, incense, a choral) to active phenomena like speaking in tongues, self-chastising, or pilgrimages, all of which aim to create specific bodily states. The somatic effects of beliefs and practices are investigated by neuro-theologians (e.g. Newberg & Lee, 2005), who provide evidence that body techniques and pharmacological substances correlate with blood pressure, hormones, the limbic and immune system. Important as this primary somatic level is, again, religious reasoning requires more than this. Some approaches emphasize the continuity between the somato-affective and conceptual, saying that believers graft the created moods on concepts and use somato-affective elements as a basis for inference (Ozorak, 1997, p. 194) and for religious transmission (Thagard, 2005). Other approaches emphasize strictly schematic structures, in particular for explaining concepts of the nature of true reality, of deities and supernatural agency, and the special status of religious specialists. A perhaps near-universal example is that supernatural agency seems to be rooted in force image schemas. Justin Barrett (1999) claims that a universal “theological correctness” in thinking about supernatural agents is fashioned after everyday modes of agency. It rests upon the general human propensity to detect intentionality in all kinds of perceived information. When deities are understood to possess intentionality and causal power a force-mover and a kind of caused motion is imagined. Many far more complex (and less universal) religious concepts based on metaphors and blends have been analyzed, including imagery of interrelatedness and wholeness (Olds, 1992; cf. Kimmel, 2002, 2005) or notions of paradise (Evola, 2009).

A Critical Epistemology for the Body-Culture Arc

After having delineated theoretical angles and types of phenomena, I want to turn to general precepts conducive to a non-reductionistic understanding of the terminological triad “culture”, “concepts”, and “body”. How do humans create extremely diverse concepts through far less dissimilar bodies? And that said, how do we best deal with the (often unnoticed) fact that the body is definitely not in all respects universal? Finally, how much de-contextualization is admissible for analytic concepts when we address these issues? I will primarily depart from cognitive linguistics, a discipline I am closely familiar with, for illustrating the kind of epistemology needed.

Learning: The Dialectics of Discourse and Body

First, I would like to return to embodied learning. If we conceive of the body as the experiential shaper of concepts and culture as their discursive shaper, then a possible reductionism meets the eye. Some theories privilege one avenue of embodied learning over others, in principle, often implicitly. A telling example is the research on conceptual metaphor, where a universal body bias enters (cf. Kimmel, 2005, 2008) and the analysis is usually done in
such a way that basic embodied image schemas acquired in early infancy are the privileged source of explanation. Lakoff and Johnson, who espouse a philosophy of “embodied realism”, operate on rather unidirectional assumptions and a developmental perspective. In essence the argument runs that embodied image schemas provide the basis of abstract discourse because they are acquired by infants in the spatio-kinesthetic domain and later projected to abstract domains. The learner possesses a repository of well understood image schemas and ways of spatial reasoning through them; later these get mapped onto concepts and surface in linguistic metaphors expressing the former. Thus a pre-linguistic understanding precedes conceptual learning. Bodily skills are, for the most part, already in place so that no new schemas need to be mastered with the move to the discursive. Let us call this account “projection”, i.e. a feed-forward mapping of schemas.

Not all embodied learning works like this ideal-type model. No full pre-linguistic understanding needs to be in place. Instead discourse can be used as a tool to create embodied knowledge within a still underspecified experiential substrate. Dance classes, body therapy, meditation practices, or all kinds of professional drill, military or other, all bear witness to this. Instructors use metaphors to encourage embodied experiencing in others, thus externalizing their own experience. Discourse can also “go under our skin” when a narrative triggers new somato-affective processes. For these reasons, the projection account needs a dialectic counterpart explaining how individual body awareness becomes a map onto which experts and elders prompt us to inscribe discursive imagery. Let us call this “retrojection” (cf. Kimmel, 2008), a process whereby discursively objectified knowledge comes to resonate gradually with our own proprioceptive awareness, sensorimotor habits in walk, posture, gesture or gaze, as well as affects and moods. Discourse, whether it is words, gesture, onomatopoeia, paralinguistic signals, or pictures thereby becomes an effective shaper of bodily experience. It is crucial to see that in many cultural settings retrojection infuses into the body something beyond simple image schemas like PATH or simple mimetic schemas like KICK. Discursive input can give rise to quite novel embodied experiences for two reasons: One is the compositional structure of language. Another is that the acquisition of complex imagery happens very gradually and often over various stages of trial-wise accommodation in a body that already possesses certain skills, but not others. My own ethnographic research investigates how practitioners of martial arts, dance, and somatic healing disciplines acquire complex imagery over years of apprenticeship. Their feats are considerable. Experts simultaneously manage complex imagery matrices that combine action-vectors, attentional foci, distributed muscle tone, kinesthetic readiness and energy channels,

9 Let me illustrate both points, starting with the second one. In contact improvisation teachers employ metaphors to make dancers experiment with new body experiences, e.g. water imagery that depicts dancing as a continuous flux and the bodies as “pouring through” their partners (Felton, n.d.). While the image schemas needed to understand these metaphors are familiar, they produce something new when the learner figures out how exactly the metaphor could be projected into the own muscles, experiments with timing and learns to recognize specific triggers when the pattern is appropriate. Novel embodied patterns typically emerge from compound image schemas. Teachers of the pair dance tango argentino often use several metaphors to convey complex body-concepts (Kimmel, 2012). How these complement each other may be seen from the following example: To execute a pivot one metaphor may target how the torso produces the energy, a second how muscle chains between shoulders and hips are created for energy transmission, a third how the axis remains stable, an a fourth how knee bending produces a lower center of gravity for increased stability. The pupil who succeeds in placing these metaphors “into the body” and in simultaneously enacting them thereby creates a novel bodily gestalt with a unique feel to it.
complex trajectories in space, or modes of metabolic activity (flow, relaxation, or arousal). While such examples are more on the side of “bodily” skills than “embodied” concepts, we have seen in section 2 conceptual aspects that mesh with this in tango and that would become even more pronounced in healing systems like Shiatsu where bodily sensing meshes with regulative “concept maps” like the Five Phases. Earlier, we have also seen in Geurts’ and Shore’s ethnographic analyses that abstract conceptual domains can become receptors of such bodily imagery and that discourse is part-and-parcel of a multimodal transmission.

Retrojection also suggests a new perspective on how conceptual metaphors are acquired by children. Let us return to the conceptual metaphors for morality, which showcase how somatic resonance and “embodied commitments” are created via force schemas. However, moral training is more complex than simply grafting a fully embodied image schema to the moral domain. Why? First of all, metaphors can be used to some effect long before their embodied power fully unfolds. A child hearing “do not stray from the right(eous) path”, “pull yourself together”, “show backbone” over and over again may understand the implied meaning globally due to the pragmatic usage setting, e.g. due to the parents’ being angry when they use it. Yet, the child may not have experienced the metaphors’ full somatic implications. Toddlers who have a far simpler vocabulary (e.g. happy, tired, and mad) need frequent negotiations around morality related issues with the mother to slowly develop their comprehension of internal states within the global cognitive maturation especially regarding empathy (Lamb, 1991). Something similar could be the case for embodied metaphors later in development. Second and related, the image schemas in the above metaphors need to be augmented in a complex process. Even preschoolers will understand that motor control can be important to avoid disaster (e.g. from a high-bar on the playground). Then, a parent who applies this to morality will encourage a mapping onto a generalized constraint of inner impulses without any visible path. To distinguish admissible from inadmissible “courses of action” a new imaginary path needs to be formed in the moral domain (always assuming the child’s proto-understanding of morality as such). My point now is this: discourse as a whole, i.e. metaphor and the rest, will focalize somatic states and control features differently from any pre-existing motor schemata of walking when somatic control must be understood as applying to subtle inner impulses to constrain appropriate thinking. As part of the discursive augmentation, the idea of a moral path throws an affective loading (e.g. “taboo”) into the mix that has a phenomenological “flavor” different from the fear of losing one’s footing on a physical path and which children have access to at an early age. And, for abstract morality a socially defined somatic action pattern needs to be assimilated by the body, which will happen only gradually, often mediated through complex social performances that infuse a schema with social significance (see Jackson, 1983a, 1983b). These performances use language amongst several other means. We may thus assume that few children who are old enough to understand metaphors (and willing to please their parents) are able to produce the appropriate somatic self-control right upon hearing the injunctions against straying and the like.

The avenues of retrojection (discourse => body) and projection (body => discourse) aren’t mutually exclusive. Neither cultural discourse necessarily precedes the body, nor vice versa. The body-discourse loop is genuinely bi-directional and perhaps even dialectic in a diachronic view.

10 An interview-based study of primary school children by Gansen (2009) suggests that the pragmatics of everyday situations (speech acts and their purposes, observed affects and situations, conflicts, etc.) figure importantly in the process of mastering metaphors.
A child may inferentially understand a metaphor and only later endow it with full embodied resonance, or, conversely understand its motivational aspects and the inferences only later. It may thus be best to ask at which point discursive learning and at which pre-linguistic embodied experience take precedence.

Finally, schema acquisition may by-pass discourse altogether. Recall our ethnographic examples that focused on pre-verbal and mimetic learning. Or, take Western gender habitus. Girls typically learn to sit with the knees closed and they throw differently from boys, without being explicitly instructed to do so (Young, 1990). Neuroscience attributes mimetic capabilities to dedicated brain mechanisms. Much excitement has surrounded the discovery of mirror-neurons – or large cell assemblies in the case of humans – that underlie imitative behavior. Thus, hand gestures when observed subliminally activate the same neural assemblies that actively produce them (Gallese & Lakoff, 2005). However, especially at a complex socio-cultural level of analysis a simplistic view of bodily mirroring as a mere “copy-paste” process can be ruled out. Mimetic learning of advanced skills sits within a (cultural) environment of already mastered skills, which in turn constrain what can be a priori perceived and at what level of detail. From that angle, mimesis comprises an active effort at construction within the aforementioned perception-action-cognition continuum and – at a reasonable complexity level – requires scaffolding by earlier acquired skills. It is subject to general constraints from human action systems as well as the knowledge of general “good tricks” and heuristics for learning (deutero-learning). These are the reasons to think Bourdieu’s account remains reductionistic even where mimesis is the transmission channel of choice.

A similar multi-stranded analysis could be applied to the cultural formation of emotions, which often happens via kinesthetic and body-based habits, including emotion displays and direct interaction with one’s caretakers in infancy, the encouraging or discouraging of emotions, but also via verbalization and cultural narratives (Ratner, 2000, pp. 22f). All in all, mimesis, projection and retrojection are all plausible mechanisms and require a broad and at the same time sufficiently granular approach to trace which process takes precedence when in the interplay.

A Middle Ground Between Universalism and Relativism

Studies of embodied grounding provide an excellent starting point for inquiring into human universals and variation, and many scholars have in fact done so. Even if culture-invariant bodies cannot, strictly speaking, exist, it seems tempting to posit some limited universals of bodily experience. In some domains we may assume some cross-cultural similarity of experience that motivates similar conceptual patterns. Let us look at two of the better-studied fields where one would expect this and see what they teach us. Concerning time, many languages use the mapping THE FUTURE IS AHEAD and THE PAST IS BEHIND US. This is motivated by the experience that the

11 This is highlighted by a laboratory study of the brain activities in observers of ballet dancers and Capoeira experts performing complex movements (Calvo-Merino et al., 2005). Unsurprisingly, the highest mirror-like brain activity occurred among those observers who were able to perform the movements themselves. Interestingly, however, Capoeira performers and ballet dancers showed more activation when watching experts from the other discipline than people untrained in either discipline. This either points to shared motion patterns across the two disciplines, a generally enhanced mirroring ability among those who actively train, or both.
path before us is the path we step on in the future. However, the Andean language Aymara is the sole known exception to this pattern. It uses space inversely, i.e. THE FUTURE IS BEHIND (Núñez & Sweetser, 2006). The experiential motivation here is visual via the inference that the future, which is unknown, is like an unseen object behind the back. (Another conceptual metaphor, namely KNOWING IS SEEING here influences the time mapping). The lesson from the Aymara outlier to the general pattern is that the body can motivate concepts in more than one way.

For a second lesson, take emotion concepts, an example sitting at the interface of the somato-affective and the inferential. A comparative study of emotion concepts by Kövecses (2000) reveals that all sorts of emotions are metaphorically conceptualized as forces, be it as opponent, wild beast, agitation or natural force, and by extension as social or mental forces (tricksters, insanity). One variant of this is ANGER IS A HOT FLUID IN A CONTAINER (“I was fuming with rage”, “He was close to exploding”), in which case the force comes from within and creates pressure. There is a clear somatic motivation for these concepts through blood pressure, body heat, muscle tension and the body boundary. Attempts to control negative emotions such as anger are equally somatically motivated. They are conceptualized as vying forces, one of which wins out. This conceptualization is somatically grounded in a sensorimotor impetus to act out the negative emotion, while rationality restrains the impulse, creating a tension between muscle agonist and antagonist. With minor variations similar patterns were found in about 10 languages. Yet, surprisingly, on the Micronesian atoll Ifaluk (Lutz, 1986) the body as a whole is downplayed for conceptualizing emotions. The key concept song (anger) does not take the body as its ontological locus to begin with. Instead, anger happens in the public field, and the concept accordingly emphasizes moral and social implications. We don’t know exactly if the people of Ifaluk experience emotions in a similar way as in other cultures. Perhaps they do, but with a much greater sensitivity for what goes on around them and how they interact. The point is that this putative inner anger experience does not become relevant for motivating conceptual thinking about emotion. Apparently, the wider cultural ideology, i.e. the cultural model of EMOTIONS ARE IN SOCIAL SPACE, can become an equally possible source. In fact, it can actually override bodily motivations if these indeed exist, by deemphasizing the ontological relevance of somatic experience for the domain at hand. (A third possible point will be discussed later, namely that cultural discourse can actually change bodily experience.)

My argument so far was this: near-universal conceptual metaphors are suggestive pointers to a level of shared human somatic experience that is powerful enough to create similar concepts. The somatic experience of emotions and time probably has something universal to it. Yet, exceptions from the rule established by research show that no full conceptual universals follow suit. So how can we best reframe the issue? Cognitive linguists can be credited with the elegant notion of experiential motivation which steers clear both of determinism and relativism (e.g. Kövecses et al., 2003). The idea is that concepts are likely to be motivated in some way through embodied or perceptual experience, but that we cannot predict beforehand which these will be. Yet, even if somatic experiences exert bottom-up influences on the conceptual system, these need not necessarily be deterministic. (Several types of somatic experience can be drawn upon to motivate

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12 Other findings by Wierzbicka (1992) indicate that all languages use involuntary external body behavior for expressing emotion, involuntary accompanying reactions observed in others, and body-based descriptions of psychological experience. However, the specifics of all three dimensions vary substantially.
the same type of concept.) And, cultural fields can interact with bodily motivation in a top-down fashion. Thus, what are the particular mechanisms of constrained variability that explain why and how culture modifies or even interrupts the causal arc in cases where we assume some near-universals of somatic experience? First, body phenomenology may be prevented from motivating concepts because it is culturally hypocognized (i.e. de-emphasized) in a given domain. For example, the skin as a container may be hypocognized in the context of thinking about the self, as Frank (2003, pp. 76ff) claims on the basis of an analysis of the Basque language. There also is research showing that the opposite, namely cultural hypercognizing, and therefore an experiential differentiation leads to more nuanced concepts in a domain like emotion (Levy, 1984). Bodily signals may also be genuinely transformed top-down by cultural appraisals that, for instance, give a positive status, to a painful experience. Somatics are subject to shaping by cultural goals, such as honor, and prevalent norms such as individual achievement vs. group harmony (Mesquita & Walker, 2003, pp. 781f). Certain somatic signals may not even arise in acculturated adults when their habitus becomes a tool to preempt them (cf. Laderman, 1994). Thus people do not become angry as much because social means of control anticipate this. Finally, certain somatic motivations may exert effects very infrequently because the cultural environment avoids the relevant triggers (Mesquita & Walker, 2003).

Thus, a multi-deterministic and dynamic framework is needed. Using emotion metaphors as an example, Kövecses (2000) suggests several dimensions of cultural variation within universals. He discusses (partial) motivation via widespread embodied metaphors and metonymies, but also culture-specific factors. To him, conceptualized emotions minimally need to be consistent with some constraints of universal physiology. Yu (2008) proposes, specifically, a “circular triangle relationship” between metaphor, body, and cultural models. He posits that conceptual metaphors are usually grounded in bodily experiences that may be universal, while culture interprets the body by filtering for target domains. For example, experiences of what hands are good for are culturally similar, but metaphors and metonymies of the type “point out” or “put one’s finger on” differ in terms of conceptual range, explicitness, and number of expressions. Yu also argues that further metaphors may influence some of the cultural models that select for the aforementioned metaphors, such as the body-relevant Chinese models of Ying-Yang and the Five Phases, which specify the body parts (such as the gallbladder) in which a specific emotion (such as courage) is situated. Overall, any part of the triangle implicates the other two: “Thus, culture, by interpreting the bodily experience, affects the formation of conceptual metaphors; body, by grounding metaphorical mappings, affects cultural understanding; and metaphor, by structuring cultural models, affects the understanding of bodily experience” (Yu, 2008, p. 389). In my view, the details of that complex relationship will differ (not all cultural models are metaphorically constituted or influence other metaphors, nor are all body experiences as universal as hand actions), yet the model shows how bottom-up and top-down viewpoints may be intertwined.

We may have to discuss top-down motivations by cultural ideology more head-on. Goatly (2007, chapter 6) lists social motivations that complement bodily ones as well as various possible reasons for non-universality at the level of metaphorical conceptualization (ranging from the very absence of target concepts, via variable pairings of source and target, to subtle differences within the latter). He also points out that many kinds of metaphors do not seem to be motivated in the same sense that emotions are. With reference to Bourdieu, Goatly (2007, p. 279) highlights that metaphors like HUMAN IS MACHINE may be “ideologically constructed in order to produce
particular embodied experiences”. This inverted directionality of explanation radically calls biologistic views into question; and it shows how domain specific our claims ultimately are. 13

Equality between Abstract and Situated Theorizing

Let me turn to one assumption of paradigms such as PSS and image schema theory that often blocks an interdisciplinary dialog with scholars of culture. What the latter find unattractive is that psychologists and linguists focus so much on highly abstract primary constituents. For instance, image schema theory posits primary experiential units like PATHS, CONTAINERS, or VERTICALITY that seem to be universal precisely because they are so simple. In view of cultural experience being essentially contextual and holistic, it may be an artificial exercise when these disciplines try to tease basic embodied schemas from richer contexts. What do we make of this skepticism concerning the units of embodied analysis? I agree with psychologists and linguists that there must be a level that represents image schemas in a de-contextualized fashion in entrenched memory. For example, we represent the word meaning of “into” (or other prepositions) by evoking a highly schematic topology before the mind’s eye, i.e. an in-out relation. No further complementation through specific object shapes or other contextual details is needed. Because it is so reduced, this simple image-schematic relation can be shared by a maximum of otherwise different scenes (different boundaries, different agents, etc.) Such “pure” image schemas are most consonant with Johnson’s (1987) original formulation. Yet, this is only half the story. It would be reductionistic to treat image schemas exclusively as non-situated units that reflect the most general properties of the human cognitive inventory. I agree with the following reflection on Csordas’ ethnographic work on healing:

[d]emonic possession (…) begins with an inchoate (pre-objectified) feeling of loss of control over the body … This is then objectified by a healer in terms of what Johnson calls the “container schema” and is diagnosed as an intrusion across a boundary, to be corrected by a suitable form of embodied action in response. What emerges, then, is something quite particular and also something comparable to other contexts in which the container schema is similarly activated. (Strathern, 1996, pp. 188-189) [my italics]

Rich cultural experiences such as symbolic healing have experiential uniqueness, even if some building blocks, such as CONTAINER schemas, are universal. Whence originates this uniqueness? First, new emergent qualities arise when basic image schemas coalesce in compounds. In our example, the healer’s image-schematic scene in which a powerful agent drives another agent from a body-container by force creates a far more complex topology than any contributing element and instantiates what I have called a compound image schema (see above and Kimmel, 2005). 14 To amplify the point, some embodied knowledge is probably even learned to begin with at the level of specific scenes or scripts rather than at that of independent constituents. This would

13 More generally I would urge caution against the common practice of making emotion concepts a paragon case for embodied grounding at large. They seem to be tied up with physiology more than others (via metonymies) and are rather a-typical for what we call an “abstract” domain to begin with, especially if we espouse the Jamesian view that emotions are apperceptions of felt somatic states.

14 This notion runs parallel to the cognitive linguistic theory of grammar proposed by Langacker (1987), who envisages complex imagistic scenes that each word in a sentence contributes to with one particular feature. The constituent parts are familiar, yet the overall outcome is novel.
fit with theories of embodied learning appealing to mostly culture-specific and in any case complex formative settings or body techniques (e.g. Grady, Shore, as well as a paper by Alverson, 1991).

Second, in many contexts we use stylized versions of specific actions such as skipping, kicking, sitting, pinching, turning a screw, or picking up an object, rather than the more generic image schemas. The stylized actions have a higher degree of experiential saturation. In memory these action concepts require a different kind of gestalt representation, as it references onto specific action properties of the human body and not only its topological and kinesthetic invariants. Zlatev (2005) dubs this image type *mimetic schemas* and suggests that more abstract image schemas like UP-DOWN may in part emerge inductively when infants generalize across shared features of action concepts like CLIMB and JUMP.

Third, context can be all-important to fully render schemas effective, a point emphasized by theorists of situated cognition (e.g. Lave, 1991; Griffiths & Scarantino, 2008). In particular, the motivational and somato-affective layer that creates “embodied commitments” seems to arise only with contexts that disambiguate and flesh them out. In on-line cognition motivational aspects arise because the schemas are embedded into a context with rich sensory information, specific goal knowledge, and so forth. This is beautifully illustrated by Geurts (2002) concerning BALANCE in a Ghanaian context where the cultural elaboration of this universal schema, the refined balancing skills and many practices surrounding it, as well as many metaphorical uses of balance stamp the schema with uniqueness. Thus an entire level of embodiment is not predictable at the level of very abstract schemas but only from the situating context. Image schemas at the level Johnson has in mind are so flexible that they are still motivationally uncommitted. The psycholinguist Gibbs (2005) is a notable advocate of the view that these and similar cognitive structures may be primarily created “on-the-fly”.

Finally, a neuro-cognitive perspective points to an inherently multi-level ontology. Image schemas can be encoded at multiple hierarchical levels, with the aim to make the mind flexible to generate both high-level gestalts and simple constituents where needed. Neuro-cognitive models posit sensorimotor feature maps that are progressively funneled into so-called “convergence zones” (e.g. Damasio, 1989).

From the developmental viewpoint it remains an empirical question which level of schematicity arises first. For example, Mandler’s (2005) evidence for the claim that infants acquire singular features like PATH before more complex gestalts this does not rule out the importance of Zlatev’s mimetic schemas. Coming earlier in time is simply not the same as being ontologically more basic in the cognitive system of adults. Furthermore, in one important sense image schemas remain theoretical constructs. How universal they appear to us depends on how contextual our description of a phenomenon is and which phenomena we compare under the same rubric. The more our methods are geared to going into the details of situated concept usage the less we will find universals. So whenever we search for universal embodied schemas this presupposes some degree of abstracting away from situated and cultural specifics (cf. Goatly, 2007, pp. 272f). While many researchers now acknowledge the inevitable necessity of choosing a limiting vantage point, it is commonly overlooked how much our view of cognitive situatedness actually depends on our research method. As I have argued, both de-contextualized and highly context-modulated aspects of cognition are real from certain vantage points and thus both need to
be explained. I thus propose a “stereoscopic view” that understands cognition both at the situated level of the phenomenologist and social scientist and at the more functional and abstractive level of the cognitive researcher.

**Recursiveness and Emergence**

At the end of the section on emotion and time metaphors I considered how bodily experience and concepts motivated by it could be culturally modulated. An idea of equal importance was just hinted at when I talked about compound image schemas that create a scene structure of a non-universal sort. The argument runs that (a) human thought is combinatorial and recursive, which allows huge expanses of knowledge to be generated out of a finite inventory of conceptual tools (Pinker, 1997, p. 360), and that (b) embodied constituents are key elements of this inventory. This is intuitively plausible, but the challenge lies in doing the appropriate concept analysis. It requires a framework with recursive scaffolding, recombination devices, and an explanation for the emergent structure at the output level. We got a brief glimpse of scaffolding earlier, when I discussed source domain aspects like “strategy” (from the war domain) which may themselves, in part, be metaphorically constituted at the next lower level. Yu’s examples from Chinese pointed to criss-crossing scaffolding relations between various types of cultural knowledge. However, the merit of an extended empirical demonstration for recursiveness belongs to Slingerland (2008, pp. 196ff), who applies the blending framework. His analysis of ancient Chinese moral philosophy illustrates how complex blends combine metaphorical mappings, imbue them with emotions, and connect their inferences. For example, in the philosopher Mencius’ view of proper moral self-cultivation an array of metaphors from the domains of warfare and agriculture is presented within an extended argument to suggest that self-cultivation needs to be gradual, should happen in accordance with nature, but also requires some effort. The upshot is of two sorts: First, Mencius’ overall rhetoric purpose is only served by the emergent structure of all metaphors taken together. Second, the basic elements, the individual metaphors, could probably be used for the purposes of very different concepts and the same is true of their embodied elements, notably FORCE imagery (manifested as water flow, irrigation, military force, etc.) We have seen that such complex combinatory patterns arising from more elementary units can also reside in the body and procedural memory. Two examples broached earlier concerned the complex sensorimotor gestalts Shore uses for his analysis of Samoan tapu/mana and the complex somato-affective patterns that determine cultural affliction in Csordas’ paradigm.

Hence, basic constituents can combine into cultural gestalts with unique emergent effects. This integrative argument may go a long way in explaining cultural concepts, while at the same time tying these to a more limited experiential basis. The argument is of special appeal for those who think that variations in bodily experience are not huge. It is quite possible that many fundamental somatic experiences are cross-culturally similar, while their compositional derivations and emergent structures are highly varied. Whether or not we believe this the creation of emergent structure from basic elements remains an irreducible part of any investigation. In other words, it is a prerequisite for the morphological analysis of concepts as such. Note in this regard that, although many social scientists find it little palatable, we must not discard the notion of certain universal “primaries” too rashly. Much empirical evidence is still out, but the research aim as such is a worthy one.
By its very nature, cognitive cultural research is after two things. First, a detailed morphological understanding of the “stuff” a concept is made of, and second, a “toolbox” of general elements that accounts for shared functional principles across content variation. Shore’s (1996, chapters 1 and 2) discussion of the *psychic unity of mankind* provides us with an excellent survey of “toolbox” items, as he lists several dozens of structural-functional model genres from the cognitive literature (synesthesia, image schemas, scripts, metaphors, propositional models, narratives, etc.) The analytic dimensions specified by each model type provide a certain common ground by letting us accommodate cultural specifics in them. Meanwhile, three levels of current theorizing have a bearing upon the psychic unity claim. At the first level *functional process universals* delineate generic mechanisms that remain uncommitted as to their content and that otherwise different phenomena share. Core affect, somatic marking, cross-modal correspondences, analogical mappings, and conceptual integration structure cognitive processes at this level. (Note that some, but not all of these deserve the epithet “embodied”). At a second level we see embodied *content universals* (or near universals) of a substantive kind. Examples are the five or six basic emotions, a universal directionality in synesthetic language (e.g. tactile stands for auditory but seldom vice versa), universal spatial reference frames, and even some near-universal metaphors (cf. Kimmel, 2004; Popova, 2005; also see above). There is a third level more difficult to accommodate in this scheme. It seems to be situated somewhere between process and content, and may be thought of as adding to them *domain-specific constraints*. A thriving research community has laid claim to domain-specific knowledge being universal because it is rooted in human evolution. This includes the body schema, folk theories of mind, religious agency, essences (in biology and social kinds), numeracy, naïve physics, and categorization principles (for a good summary see Slingerland, 2008, pp. 115-137). Some of these domains can be related to embodiment, although the connection is seldom drawn explicitly. It is a priori evident concerning the body schema. Naïve physics is largely grounded in gestalt perception and the pan-cultural tendency of attributing agency at least piggy-backs on perceptual habits. (Apparently falsely attributing intentions is a safer evolutionary strategy than missing an actual agent, e.g. a predator). Other evolutionary patterns from the above list like essentialist thinking and folk theories of mind have an unclear status with respect to embodied grounding.

Be that as it may, my first point is that all domain-specific theories rightly eschew a “blank slate” which cultural cognition would simply get superimposed on. Instead, there are evident constraints that issue from our biological make-up. My second point is that a nuanced understanding of human universals can ultimately only gain from an improved grasp of the interrelations between the three levels I have specified. While evolutionary cognition research cannot be ignored, we must abstain from the false dichotomy of pitting psychic unity against psychic diversity, an argument based in an overly essentialist biology (Shore, 1996, p. 312). Third, none of what has been said commits us to a sharp distinction between a so-called A and a B system of cognition, where the A system comprises a *universal* common-sense, including a shared bodily and perceptual reality, and the B system includes variable higher concepts. Cognitive scholars of religion like Pyysiäinen (2009, pp. 189ff) exemplify this view. Indeed, our

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15 In addition, theorists of the “epidemiology of representations” (Tooby & Cosmides, 1992; Sperber, 1996) claim that universal trends in thinking may become established because the cognitive make-up of humans ensures their easily use and transmission in a group. One impetus for transmission can be phenomenological plausibility and experiential grounding (“intuitiveness”), but as we shall see in the last section of this paper, contravening forces to plausibility may enhance a concept’s memorability.
intuition clings to the hunch that certain body-based elements of being human are not terribly different across cultures, while ideology almost always is. In the extreme, the notion of an A versus a B system invites dualism by suggesting that the two realms are rather disconnected. Embodiment approaches, by contrast, attempt to trace where the two levels of human cognition are connected. Slingerland’s discussion aims to ground meta-culture on the bedrock of innate cognition, while according embodiment a key role. According to him, counterintuitive and complex ideas become comprehensible via being grounded in a set of commonsensical ones. For example, scientific theories are informed by complex blends that recursively link back to innate domains, “their final court of appeal” (Slingerland, 2008, pp. 212f, 237). To be sure, Slingerland does not reduce common-sense to perceptual grounding alone because innate modules are added and acknowledges limits to the recursiveness of blends (Slingerland, personal communication). In my view this approach to bootstrapping from commonsensical domains provides an appealing hypothesis if, indeed, the embodied inputs can be traced to the output level. Yet, many case studies of specific counterintuitive or complex representations will be needed to make general claims on recursive grounding, be it through blending or other scaffolds.

Implications of Embodiment Research

Finally, what role should we accord embodied grounding in understanding human society? A relatively weak view holds that embodied, especially perceptual, elements simply underlie complex meta-cultural representations in a morphological analysis. A stronger and more controversial claim is that a concept derives its credibility, intuitiveness, and authenticity from grounding, thus becoming an “embodied commitment”. Do certain concepts thrive thanks to their embodied status? Can something wholly ungrounded in embodied common-sense catch on at all in a culture? And, do all input elements need to be grounded or only some? Let us, again, take on the inferential and somato-affective levels separately.

Many cases make evident that perceptually grounded elements are needed to discursively articulate a worldview and its inferences (e.g. boundary and exclusion metaphors have quite different inferential consequences than such of proximity and relationship). However, whether grounding in perceptual commonsense is always needed for concepts to be successful remains open to debate. Contra this claim, Boyer (2001) speculates that religious concepts are viable because they paint a starkly counter-intuitive element with a veneer of the known and have just the right degree of counter-intuitiveness, thus enhancing the retention rate in memory and thereby the concept’s cultural transmission. If we equate “counterintuitive” with “non-grounded”, full perceptual grounding would a priori be undesirable for this class of concepts. On the other hand, Boyer’s claim has little predictive power, especially concerning types of counter-intuitiveness that do not catch on (besides the problem that the framing of the problem inoculates it against falsification). Another counterargument to obligatory grounding is that common-sense elements such as essentialism are “hardwired” in the brain and therefore need not be experience-based to begin with.

16 This applies especially to functional bodily skills like learning to walk or ones that are easily adopted like driving cars. By contrast, the realm of abstract ideas seems to produce an infinitely greater diversity, clash, learning difficulty across cultures, and, we may add, greater resilience to change under conditions of globalization. My point is not to negate differences at the bodily level, which have been amply studied by the anthropology of the body, but to draw attention to a possible difference in extent.
Somato-affective grounding of “embodied commitments” is clearly needed for many levels of society to work: People act in conformity with society for many affective reasons, including such unrelated to the accepted key concepts, e.g. opportunism. What is more, analytically it may often be impermissible to analyze single concepts only for their own somato-affective payoffs while neglecting those provided by the wider socio-cultural field (especially elective affinities with other concepts and/ or somatic states). It may well be that a particular concept is accepted not due to its payoff, but that it stabilizes through somatic affects permeating an entire lifestyle (e.g. children accept harsh ideologies because they love their parents). Macro-affects and local cognitive concepts can dynamically stabilize each other. Inculcation by “brainwashing” would largely depend on such mechanisms, although it can just as well work as structuralist theoreticians would predict, i.e. a concept is accepted mainly because its surrounding web of mutually cross-buttressing concepts stabilizes it. If the latter mechanisms can completely override the need for affective acceptance remains open to debate.

The grounding of concept systems in particular somato-affective qualities often has a normative aspect to it. Lakoff (1996) argues that American conservatives have a metaphor system much like their liberals counterparts, in which image schemas, metaphorical mappings and other principles play a role. What distinguishes the two (in addition to different metaphor related preference orders and contextuality) is that the liberal system respects a very basic somatic level of nurturance while the conservative emphasis on discipline, punishment, and strict morality fails to do so. Thus, Lakoff argues, liberal ideology is better grounded in the human condition, which is geared towards well-being. I actually doubt that it is always possible to equate conservatism with an upbringing devoid of nurturance and embodied welfare, but whatever the empirical case may be, Lakoff showcases the normative implications underlying embodied concept grounding.

Beyond this, repercussions on normative arguments are perhaps most evident concerning emotion. There is an ongoing debate about whether morality is primarily driven by emotions like anger, shame and guilt or by feelings of empathy (cf. Prinz, 2011), while others emphasize appraisal related over embodied constituents altogether. Repercussions on conflict management are evident as well. The acceptance of somato-affective components as being part-and-parcel of conceptual processes is the accepted first step in conflict mediation; only when we acknowledge anger, etc. we can channel its more deleterious effects. (cf. Ciompi and Endert, 2011). Finally, social cognition research dramatically strengthens the role of embodied subjectivity in teaching, therapy, and many other fields. Bodily communication is the fundament of language acquisition. And, the enacted bodily self is a primary source of intersubjectivity. Phenomenological research in particular relativizes rationalistic ("Cartesian") interaction ideologies. Young parents, caregivers of dementia patients, therapists, coaches, and many others now receive support from research when they use the bodily sense of being with one another as a key resource. Practitioners in many fields also use what we may call embodied language (e.g. gestures, metaphor, synesthetic images) in order to saturate reason with affect and imagery.

Summary

In this section I have argued that an integrative theory of embodied cognition and culture requires a number of epistemological strategies. These envisage;
a) a bi-causal loop between body and culture as concerns learning;
b) a middle ground between bodily determinism on the one hand and cultural determinism
and arbitrariness of ideas on the other;
c) a multi-level theory that accounts for the situatedness of cognition (but also the occasional
absence thereof) together with a critical reflection of the abstraction in our analytic
constructs;
d) a morphological apparatus for analysis that addresses how complex knowledge is
combined out of simple elements and how embodiment thus creates variation, and
e) a careful consideration of what we wish to imply with embodied cognition arguments
about the human condition and, by further consequence, for disciplines like pedagogy,
ethics, and politics.

**Embodied Cognition as Integrator of Disciplines**

In conclusion, what role does our topic play for integrating cognitive research itself and for a
rapprochement to surrounding areas of scholarship? Building on the sketched notional arc that
encompasses body, mind, and culture (as envisioned by Frank et al, 2008) I propose that this arc
can simultaneously become an interdisciplinary one, a process already under way.

**“Embodiment:” a Fuzzy Notion?**

Viewed from a distance we notice how much “embodiment” has become a vogue term, yet
how different the meanings accorded to it in different disciplines are. It is therefore crucial to
specify the level of research and the focalized cognitive mechanisms at this level (e.g. grounding
in external percepts vs. grounding in proprioception; phenomenology vs. sub-conscious
cognition). A cavalier lumping together of everything that surrounds embodiment hampers a
genuine dialog by suggesting pseudo-similarities. The notion’s associative richness turns into a
hurdle when it becomes a catch-all term for performance and habitus, learning by various
mechanisms, and different kinds of concepts. Especially the often postulated “body turn” invites
generalizing claims about the embodied mind *tout court*. In view of this, a more reflexive
handling of the matter is called for in two ways:

a) **Level specificity:** we need to operate with precise definitions that foster an acute
awareness of the level of embodiment that a given study is addressing, and
b) **Domain specificity:** we need to evaluate evidence piece-meal and for a specific domain
of human cognition, before making overarching claims. Only thereby do we
acknowledge that different kinds of concepts come about in different ways.

Hence, although a sizable body of data is now available, years of comparative cultural
research lie ahead of us to fully flesh out the picture. And, as I will argue next, existing
interdisciplinary ties will have to be exploited and strengthened.
The Need for Convergence and Scaffolding

This paper selectively looked at research from the embodiment literature that is pertinent to the complexity level of culture (and even then I haven’t had space to address topics like synesthesia or many aspects of current social cognition research). Surveying approaches from cognitive linguistics, cognitive psychology, and cognitive anthropology in one single spot makes sense. There is an evident degree of complementariness between these approaches, all of which study cognition and embodiment with a focus either on cultures (plural, i.e. comparatively) or display an interest in the fact of socio-cultural mediation of cognition. While these disciplines strive towards a common goal, convergences are not being exploited as much as they could. Somewhat paradoxically, discussions of how we may bridge the gap to the “brain” sciences are attracting far greater attention than the arguably easier interpolation between areas that belong to the approximately same realm on the “mind” side of things. Important convergence zones remain neglected due to a lack of mutual awareness of neighboring disciplines. For example, most cognitive psychologists are at best vaguely aware of linguistic research, while work in cognitive anthropology tends to be read by neither. One crucial convergence zone has been drawn attention to when I suggested both that somato-visceral and inferentially oriented theories must eventually join forces within a single framework. Connecting these areas would, as a beneficial side-effect, create a greater typological awareness of aspects of embodiment and, as I shall argue in the next sub-section, its multi-tier architecture.

On the asset side, the aim of integrating embodied cognition phenomena from various different levels has appeared on the agenda. A description of the multi-level architecture of research is a first step that Rohrer’s (2001) survey of approaches from the neural to the socio-cultural levels takes into view. Actually linking these levels in an integrative model is the obvious next step, as in Feldman’s (2008) computationally implemented “Neural Theory of Metaphor”, or Slingerland’s (2008) argument for scaffolding from innate or otherwise universal cognitive elements to metaculture with high variability. Incomplete as these attempts remain, they show the direction to go in the future.

I hope the reader has glimpsed, at various points, affinities between discussed theories which occupy an important juncture of the multi-tier architecture described by Rohrer. What kinds of scaffolds and bridges do I have in mind, then? First of all, by acknowledging that embodiment can refer to unique, rich experiences as well as to schemas at various levels of abstraction we can focus on relations of progressive “enrichment” between these levels. We may thus compare the Anlo-Ewe “enriched concept” of BALANCE discussed by ethnographer Geurts (2002) to the more generic schema suggested by the philosopher Johnson (1987) and specify contextual or cultural constraints responsible for the difference. Second, it seems that different methodologies fill different slots in a scaffolded multi-tier architecture. Most importantly, some methods reflect more cultural situatedness than others. Cognitive anthropologists and cultural phenomenologists aim to be ecologically valid, cognitive linguists come next, in cultural psychology the picture is somewhat split, while experimental psychologists gravitate towards a more context-free paradigm. Along this continuum an evident trade-off meets the eye here: The immersive methods of ethnographers capture context and allow us to understand culture holistically and, often, from the viewpoint of lived experience. At the middle level linguistics provides dimensionally more focused (hence less holistic), but systematic data from across several cultures. The far end of the
continuum is occupied by controlled laboratory methods (e.g. Nisbett, 2003) and specializes in causal explanations. This depends on isolating variables and investigating how variations in one variable (like cultural origin or mother tongue) influence a second, dependent variable (like the performance in a cognitive task). The net gain can be causal models for adjudicating debates like the long standing controversy around the Sapir-Whorf hypothesis (cf. Deutscher, 2010). The flipside is that experiments reduce socio-cultural context to somewhat artificial settings. Thus, “stereoscopic theorizing”, as I called it earlier, between ecologically valid and controlled methods is imperative.

I see particular promise in sub-disciplines that straddle disciplinary fences to begin with. Cognitive linguistics is becoming one such “hub”. It displays considerable ability for traversing boundaries (cf. Frank, 2008, p.5) not least because of its gestalt approach. The eschewing of propositional modeling and the current paradigm switch to a simulation based account appeals to phenomenological and ethnographic quarters alike and inherently requires far less bridge-building than, say, traditional AI frameworks or 1970s-style cognitive models would. It is far from accidental that cognitive linguistics has expanded beyond linguistics proper and spawned much multimodal research, as witnessed by a burgeoning field of gestural and pictorial studies. Hence, particular frameworks are inherently more connectable than others both thanks to their theoretical paradigm and the methods that go with it. Accordingly, since its inception in the early 1980s the discipline has proven its ability to engender new convergence zones such as cognitive semiotics, cognitive poetics or cultural linguistics, and radiates outward into discourse analysis, musicology, and performance studies.

Convergent Evidence, Triangulation, and Methodological Pluralism

Various method-related developments now also make it easier to cross disciplinary divides. For one thing phenomenology is now taken seriously and has created important applied perspectives. Compared to the time when Jackson (1983a, p. 330) diagnosed a “dearth of studies of the body-as-subject” much has changed, both in anthropology and cognitive science. The advent of empirical phenomenology (Pollio et al., 1997) demonstrates that subjective approaches need not veer off into the impressionistic and can systematically address aspects of subjective experience. Special methods both of interviewing (Stern, 2004; Petitmengin, 2006) and doing think-alouds create snapshots of cultural/individual experience, arrest its fleetingness, and – with reference to embodied knowledge – make explicit praxeological skills that lie “hidden in the body” or just below the consciousness threshold (Kimmel, 2012). Likewise buzzer-cued spontaneous recordings select a small slice of subjective experience for later scrutiny by the researchers (Hurlburt & Heavey, 2006), yielding exciting insights on some individual’s tendency to be in a “somatic”, or “imagistic” state of awareness, while others tend to engage in verbal thought.

On the behavioral side, multimodal approaches to cultural communication are providing unprecedented resources (e.g. Finnegar, 2002, pp. 223ff), often in conjunction with a video-based micro-analysis and complex coding schemes (e.g. Norris, 2004). Scholars have taken to comparative work on non-verbal communication modes like facial expression (Levenson et al., 1992), speech-accompanying gesture (e.g. Efron, 1941; McNeill, 1992), gaze (e.g. Rossano et al., 2009), and rhythm (e.g. Agliati et al., 2005). The latter study is also exemplary for many others in
that a micro-analytic qualitative approach is embraced which simultaneously takes advantage of pattern detection software. Mixed methods like these are of value in general, not least because social scientists are beginning to realize that the fear of “measuring” is unfounded with the advent of micro-analytic methods.

What about methodology as such? Many quarters within cognitive science are showing great ability to harness together different sources of empirical data in exploring cultural cognition. Lakoff and Johnson (1999) push for this explicitly in their “convergent evidence” framework. They claim that, since sub-personal cognition is difficult to access, theoretical constructs un-falsified by six or eight independent methods must have great strength. While this point is well taken, method triangulation in single projects is an even more important ideal to aim for, for approaches like Geurts’ mix of developmental, linguistic, and ethnographic tools remain rare to date. By applying different methods to the same data pool much is gained over a post hoc arraying of convergent evidence. An example for this, again, comes from my aforementioned project on tango in which I applied phenomenological methods in conjunction with motion tracking by high-speed cameras, hence measurements of corresponding factors to the dancers’ subjective theories of technique. What is special about a triangulation such as this? It is not only that specific data slices are compared across methods. To begin a motion tracking study we need a great deal of qualitative input gained through introspection, expert interviews, and projecting these on the initial results in a continuous loop of refinement often over months (e.g. when expert dancers provide feedback to some data samples). And what is the outcome? To give an example, we discovered precise kinetic counterparts of subjectively marked phases experts think and speak of in characterizing tango gait. Thus, an evolving dialog between the methods creates granular descriptions far beyond what convergences from across data sources can give us.

“Vertical Integration” and the Role of Embodied Cognition

When I called for the exploitation of convergence zones above this suggested a near-horizontal interpolation between not quite so remote research areas. However, the interpolation may become more vertical when we widen our purview and look at cognitive science on the one hand, which branches out into the natural sciences, and the social sciences and some of the humanities on the other. Embodied perspectives on cognition, especially to the extent that they are situated, display a natural affinity to the social sciences and can infuse the latter conceptually and empirically. Cognitive scientists on their part should pick up impulses from the sociology of knowledge, phenomenology, and all kinds of qualitative social research to gain in ecological validity.

In a valiant book-length effort to stimulate an interdisciplinary dialog, Slingerland (2008) recently coined the notion of “vertical integration”. He claims that the cognitive arc from basic elements to meta-culture implicates a disciplinary arc, where the humanistic or social sciences hold the top position and the natural sciences form the fundament. Slingerland proposes that the humanities are not necessarily incommensurate with cognitive research, despite the doubts of the former. He claims that for a true rapprochement between the often-cited “Two Cultures” embodied cognition research is a key site, a point well worth underscoring. In my view, the humanities and social sciences can gain in several respects from the empirically-minded, but also epistemologically grounded debate I have surveyed. First of all, other disciplines stand to gain
from descriptive tools such as conceptual integration networks, notions such as image schemas, and multi-level models like those from emotion research. Second, the cognitive embodiment paradigm tidies up some conceptual clutter and formulates in a tractable way the key question “how can universals lead to cultural specifics?” Related to this, it dominantly challenges views that assume a causal supremacy of culture over cognition tout court, i.e. cultural constructionism, or see culture as removed from the realm of the body, i.e. a form of dualism. Researching functional cognitive universals while allowing for content specifics (and near-universals) is perhaps the paradigmatic achievement the social sciences and humanities should emulate. Ultimately, the very framing of the research agenda, which crucially benefits from domain-specific evidence, a multi-tier architecture, and empirical methods as such, helps us reject false dichotomies.

I close with expressing my conviction that the study of embodiment is a cornerstone of the important enterprise linking cultural processes to the trans-human cognitive makeup. The scholarly discourse is fairly broad now with a sizeable number of cultural areas that have been empirically investigated (although many others are still missing) and with many different methods employed in the service of a common goal. With the recognition that no approach has full answers for the complex set of questions discussed here we need to knit ever closer ties and transform the emerging multi-perspective mosaic formed around a shared programmatic into a genuine theory network.

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References


Integrating Conceptions of Human Progress

Rick Szostak¹

Abstract: This paper applies interdisciplinary techniques toward the investigation of the idea of human progress. It argues that progress needs to be considered with respect to an ethical evaluation of a host of different phenomena. Some of these have displayed progress in human history, others regress, and still others neither. It is argued that it is possible to achieve progress on all fronts in the future, but only if we engage constructively with the true complexity of the world we inhabit. Classification is seen as a critical complement to interdisciplinary analysis.

Keywords: Ethics, human progress, interdisciplinarity, policy.

Introduction²

The existing literature on human progress predominately focuses on a small set of indicators: optimists stress advances in economic output or technology, while pessimists bemoan environmental or cultural deterioration. Yet progress can potentially be evaluated across hundreds of indicators. Indeed the Organization for Economic Cooperation and Development heads a collaborative research project designed to develop such a list of indicators. However, we can only speak of progress in this way after first identifying what would be ‘good’ or ‘better’ with respect to a variety of social, political, psychological, and other variables. Is it possible to develop consensus cross-culturally on the direction human societies should move?

This paper will argue that it is indeed possible to identify what most humans would consider progressive across a wide range of phenomena. It is then possible to perform a historical survey in order to ascertain for which of these phenomena progress (or regress) has been observed historically. And then it is possible to speculate on whether it is possible to achieve progress in the future for phenomena that have shown regress in the past. Since people will disagree

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² This paper draws heavily on my Restoring Human Progress (2012). I thank Cranmore Publications for permission to borrow from that book.
³ In addition to critiquing meta-narratives, postmodernists also stress the uncertainty inherent in contemporary society. They may be guilty in this respect of exaggerating the uniqueness of today’s world. Indeed, most people in the developed world live largely free from the fear of periodic food shortages that threatened most past societies. While they also face uncertainties related to stock markets and nuclear warheads that were unknown to distant ancestors, one should be careful about assuming that today’s world is more uncertain in some aggregate sense than yesterday’s world. Moreover, humans can aspire to reduce the degree of uncertainty in the world by better understanding it.
regarding the relative importance of different types of progress, humanity can only share confidence of a progressive future if progress can be imagined across most/all phenomena.

Such a project involves integrating across both disciplines and cultures. It requires integrating ethical, historical, and social scientific analysis. And it involves integrating scholarly and public policy analysis. In so doing, the project must grapple with three prominent sources of pessimism regarding the human condition: a fear that we cannot identify a universal ethics (and thus do not know what progress is), a concern that the world we live in is too complex for us to understand (and thus that we could not identify a path to progress even if we could decide what progress would mean), and finally a concern that public policy is not guided by rational discourse (and thus we would not achieve a path to progress even if we could identify it).

These challenges can each be met through the application of recent developments in interdisciplinary analysis. This paper will both outline how these challenges can be surmounted in achieving a holistic understanding of human progress (its nature, its history, and its future prospects), and present the results of research that has attempted to overcome each of these challenges.

The next section reviews some prominent recent critiques of the idea of progress. The subsequent section discusses how consensus can be achieved on the nature of progress across hundreds of distinct phenomena. We must first in that section discuss how to achieve consensus on a list of phenomena to care about. Having identified the nature of progress across diverse phenomena, we can turn to history and ask for which of these history has been progressive. Last but not least, we can ask if it is possible to imagine strategies or policies that can achieve future progress in areas of past regress (or stability).

**Criticisms of the Idea of Progress**

**Complexity**

In the glory days of the postwar economic boom, a host of social programs were launched across all developed countries. Decades later, all of these societies (though to quite different degrees) still face major social problems: homelessness, poverty, marginalized groups, long-term unemployed. Not only have social programs failed to eradicate these problems, they are often observed to have had undesirable side effects. For example, some social programs may provide disincentives to individuals seeking to become productive members of society. It could well be that we hold these programs to too high a standard: the thrust of this book is toward making the world better rather than perfect. A program that moves a million people out of poverty or a thousand people off the streets can be hailed as progressive even if it leaves as many behind. Yet it is understandable that many people, facing the seeming intractability of a range of social problems, worry that societal problems have turned out to be too complicated for us to solve.

This societal concern with complexity has been articulated most clearly within the discourse on the ‘postmodern condition.’ Lyotard (1984, p. xxiv) stated that: “Simplifying to the extreme I define postmodernism as incredulity toward meta-narratives.” Not only are such meta-narratives necessarily simplistic but they then mislead individuals into ‘seeing’ the world as less complex
than it actually is.4 ‘Liberal democracy,’ for example, is a meta-narrative which suggests that
democracy, capitalism, and individualism are mutually supportive elements of a progressive
society. Such a meta-narrative, if accepted without question, blinds individuals to contradictions
inherent in democracy, capitalism, and individualism. Critics of postmodernism have noted (often
a bit too gleefully) that postmodernism itself can be viewed as a meta-narrative, and suggested
that the postmodern meta-narrative can too easily lead individuals to ignore that which might be
good in contemporary society.

Postmodernists have performed a valuable service in urging scholars away from ‘grand
theories.’ The history of the social sciences and humanities (hereafter human science) is littered
with attempts to explain most or all of human activity within the confines of one theory. The
inevitable failure of such exercises naturally induces scholarly pessimism. Yet grand theories
generally illuminate some aspects of the human condition, and thus their failure to illuminate all
should hardly be taken as a sign that human understanding is impossible. Indeed we are guided
not to entirely reject any grand theory, but to look for particular insights it might generate. Those
postmodernists who have not abandoned hope of advancing human understanding celebrate more
narrowly focused scholarly research. They thus appreciate, at least to some extent, that the fact
that the world is complex does not mean that it is incomprehensible. The world may not be
orderly, and may even seem chaotic, but we can and should nevertheless aspire to gradually
enhance our comprehension of pieces of this vast puzzle.

The argument of the preceding paragraph accords with the ‘common sense’ that guides most
of us through our daily lives. I am all too aware that I cannot hope to comprehend all of the
economic, political, technological, and other characteristics of the world in which I live. I take
my car to a mechanic when it doesn’t work, have only the vaguest appreciation of how computer
chips are manufactured, and do not even know where most of the food on my table was grown.
Yet I know enough about how the world works to make a set of decisions that generally work for
me (importantly these include informed recourse to experts of various sorts as appropriate).
These are not incorporated in some grand theory of the universe, but in a host of specific

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4 In addition to critiquing meta-narratives, postmodernists also stress the uncertainty inherent in
contemporary society. They may be guilty in this respect of exaggerating the uniqueness of today’s world.
Indeed, most people in the developed world live largely free from the fear of periodic food shortages that
threatened most past societies. While they also face uncertainties related to stock markets and nuclear
warheads that were unknown to distant ancestors, one should be careful about assuming that today’s world
is more uncertain in some aggregate sense than yesterday’s world. Moreover, humans can aspire to reduce
the degree of uncertainty in the world by better understanding it.
understandings. My understanding of what happens when I press the accelerator need not be related theoretically to my understanding of what happens when I am nice to a stranger, though I should strive for consistency across such understandings.

If we will favor research that is focused, we will want some way of connecting our understandings of different pieces of the puzzle that eschews appeals to simplistic meta-narrative. In Szostak (2004), I outlined one way in which scholars could hope to organize their understanding. Classifications were developed of the phenomena that scholars study, the data they use, the types of theory they employ, the methods they apply, and the everyday practices of scholarly research. Any piece of scholarly research can be precisely identified in terms of each of these characteristics. And thus one can imagine a multidimensional ‘map’ of the scholarly enterprise in which every insight has a place. To be sure this ‘map’ will not look like a roadmap, but will serve the same purposes: it provides a precise location — in terms of phenomena, data, theory, method, and practice — of each piece of scholarly research, and thus also of how one piece of research might be connected to another: do they investigate some of the same phenomena or data, or apply the same theory or method?

One important implication of such a map is that scholars are thus encouraged to specify carefully which phenomena are implicated by any theoretical argument. Human science in particular is all too often characterized by failure to specify where a theory (or method) is applicable. I also in that book urged a balance between specialized research and integrative research: the latter is necessary to tie scholarly understanding into a complex yet coherent and complementary whole.

Human understanding can never be perfect. One insight of contemporary philosophy of science is that it is impossible to prove or disprove any scholarly statement. To be sure, some statements — such as the laws of thermodynamics — are so widely accepted as to appear to be ‘proven.’ Yet there is always some argument that can be sketched in opposition to either a scholarly statement or the evidence provided in its support. This result need not and should not prevent humanity from first trying to understand and then trying to change the world. For example, economic growth as a process involves important interactions among hundreds of phenomena, and scholars can never hope to understand any of these interactions flawlessly: the path of economic activity is thus necessarily uncertain. Nevertheless humanity can hope to understand some relationships (or ‘causal links’) well enough to be confident of the main effects of certain policies or practices (Szostak, 2009). Humanity can thus recognize uncertainty without being immobilized by it.

If human understanding can only come in little bits rather than in meta-narratives, but these bits of understanding can potentially be organized into a coherent understanding, it follows that understanding of human progress should also come in a disaggregated but coherent form. Sometimes pessimism regarding progress flows from focusing only on the manifest challenges facing contemporary societies, and dismissing (sometimes explicitly; more often implicitly) any characteristics that might be viewed in a more favorable light. Often it is assumed (again generally implicitly rather than explicitly) that there is some inevitable connection across these problems: perhaps capitalism must lead inevitably to environmental destruction, cultural dissolution, and political strife. Such an argument is a meta-narrative, and deserves to be treated with caution. In this paper, human progress will be evaluated phenomenon by phenomenon. A
picture of human progress as a whole can only be gained by combining our insights into progress phenomenon by phenomenon.

**Reason**

If it were assumed that humans are completely incapable of understanding their world, then it would follow that they could not apply reason to improve that world. If we do not understand, any action we undertake or decision we make, no matter how well-intentioned, could as easily do harm as good. Progress might still occur, but would be much less likely. One might for example posit an evolutionary process: humans choose randomly (since they do not understand) among beliefs or institutions, and the changes that happen to make the world a better place are selected. Even here, there is a problem: how are the better beliefs and institution selected if human reason cannot appreciate when an improvement has occurred?

Scholars have emphasized two distinct arguments regarding reason. The first is that in the West since the Enlightenment of the seventeenth century reason has been emphasized at the expense of human emotion and intuition. This insight is embraced in this paper. Human reason cannot operate in isolation, and never has. Even within science reason is *supposed to be* tied inextricably to experience: scholars are not supposed to just sit in their offices and theorize but are expected to use scholarly methods in order to provide real-world evidence for their conjectures. Moreover historians of science have long appreciated that scientific discoveries always come in the form of intuitive inspiration, and that these inspirations are sandwiched between lengthy periods of rational reflection and revision. That is, the scholar having identified a problem thinks about it at length, and explores various avenues, but the solution most often comes while the scholar is walking in the park or taking a bath, and thus not consciously addressing the problem at hand. Creative problem solving is by definition not an entirely rational act, but involves the intuitive drawing of new connections (which are then clarified through a further exercise in reason). Nor does the role of intuition stop there. As the eighteenth century philosopher Jean-Jacques Rousseau (among many others) appreciated, humans cannot identify their goals by recourse to reason alone, but must look inside themselves to divine what the purposes of human lives (individually or collectively) should be. Reason not harnessed to human feelings can too readily support totalitarian excess. The dictator who kills millions in order to fashion a better world is guilty among other things of failing to use their intuition to challenge their reason. Yet while reason works best if harnessed to experience and intuition, it is likewise true that experience and intuition should not be trusted in isolation. We all draw lessons in life from experience, but can easily be guided by spurious correlations – it always rains on Thursday, people of group X are rude, I am unlucky at cards – unless we subject our experiences to reasoned analysis. And while our intuition in part seems to reflect subconscious understandings of the world, it also reflects a set of subconscious desires and self-serving beliefs that also deserve to be carefully analyzed.

The second argument regarding the exercise of reason is an understandable concern that reason does not in practice guide human affairs. Some have suggested that humans *never* make decisions on the basis of reason. ⁵ Individuals only pretend to apply reason to justify decisions

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⁵ See for example Detmer’s discussion of Laurie Calhoun (2003, 245-9). Ruth Benedict has suggested that *all* societal decisions are arbitrary and subconscious. Detmer responds that *some* may be, such as which
that have in fact been reached subconsciously. It is argued that this is an inevitability to be accepted rather than an ill to combat. It can hardly be denied that individuals often make decisions on non-rational grounds: they go with their gut instinct or do what they observe others (especially figures in authority) doing, and may be especially guilty of making decisions according to a decision-rule of not offending those most likely to attack them for making the ‘wrong’ decision. It must seem, though, that reason is not totally absent from human decision-making. The author certainly believes that he has made some uncomfortable decisions from time to time precisely because reason compelled him in a direction he did not wish to go. Note also that if skeptics are correct and reason never matters, then making a reasoned argument that open-minded conversation should be pursued is merely harmless: it can have no effect on individual behavior. If, however, these skeptics are wrong, and reason does matter, then failing to urge open-minded discourse limits societal progress.

I myself have often walked out of committee meetings despairing of the inability of even well-educated people to fully articulate their thoughts or fully understand the thoughts of others. I have been astonished that what seemed to me to be obvious efforts at manipulation or coercion were not clearly perceived as such by others. At such moments it is easy to accept extreme skepticism of the possibility of rational human action. Yet there are many other moments in life when I have engaged in open honest conversations that seemed to lead to mutual enlightenment. At such moments it is hard to think that there is not some hope for enhanced understanding through the exercise of reason.

The simple observation that some conversations seem fruitful and that others do not suggests a way forward. If we can identify the conditions under which reasoned discourse is most likely, and if we can then strive to generate those conditions in public debate, then we can enhance the role of reason in public affairs. The philosopher Jurgen Habermas has devoted much of his career to outlining the conditions conducive to reasoned conversation, and how such conversations could and should inform public policy. Notably, Habermas believes that language is not as ambiguous as literary theorists claim. In particular he notes that utterances – sentences, paragraphs, speeches – are not as ambiguous as the words they contain, because the listener/reader can appeal both to other words in the utterance and to conventions governing utterances in order to narrow the range of possible meanings. Yet this argument is not essential to his discussion of ambiguity-lessening conditions: once one recognizes that ambiguity is not absolute it makes sense to pursue conditions that reduce ambiguity. For Habermas, a reasoned conversation is one where participants share a goal of agreement (as opposed to victory): they will then seek to understand the reasons why another might disagree and seek jointly with the other person to determine whose reasons are more valid. Participants should thus hope that the better argument will win: they will try to state their reasons as clearly as possible, recognizing potential defects, rather than trying to score an artificial victory by recourse to rhetorical ‘tricks’.

side of the road to drive on (though even here consensus may reflect reasoned consideration of the cost of not agreeing), but that others, such as ‘do not murder’ are not (2003, pp. 237-238). More generally he notes that it is inconsistent for postmodernists to use reason in attacking rationality (p. 307).  

6 And in a world of manipulation, close-mindedness, and pigheadedness, every individual from time to time is treated by others in ways that show insufficient respect for one’s being: the denial of individual authenticity – another important aspect of postmodern thought – spares us the angst associated with such moments, for we can maintain that there is no authentic person to be offended.
of various sorts. Likewise they will ask questions of the other designed to clarify their position rather than to make them look bad; if as a result a clear weakness in a position is exposed, this will be recognized by all without necessarily concluding that the entire position is misguided. All participants should strive to see that no relevant argument is suppressed. This result is most likely if participation in the discussion is as broad as possible, for different individuals will bring different perspectives. Finally, participants will be aware of the inherent ambiguity of language, but strive toward shared meanings. Of course, these various conditions are never perfectly achieved. Nevertheless, they provide concrete standards against which certain conversations and their outcomes can be critiqued. The conclusions that result from a conversation are more likely to be valid to the extent that these conditions are met.\footnote{A very accessible overview of Habermas’ thought, and how it relates to postmodernism and sociolinguistics more generally, can be found in (especially the ‘Introduction’ to) Cooke (1998).

One of the items in Habermas’ list of ideal conditions has special import for this paper: the idea that all relevant arguments should be embraced. This implies that reasoned discourse must be focused. Even in the best of circumstances, an open-ended debate regarding progress in which individuals talk past each other – because some are thinking of economic growth and others of environmental degradation – will not be productive. It can only become productive once the broader question has been broken down into little bits: has there been progress with respect to health, happiness, technology, and so on; and if not can progress be achieved in these areas? It then becomes possible that all participants will agree on the range of relevant arguments. It is also much more likely that we can overcome the ambiguity of language in such focused conversations. Likewise we can better work to identify the biases that might have influenced our intuition or experience in a conversation that does not run off in a million directions. To be sure, there are inter-relations across phenomena that cannot be ignored. Nevertheless reasoned discourse demands that we engage these inter-relations one at a time as well. Only by working toward increased understanding of each little piece of the progress puzzle can we work constructively toward understanding of the broader question of whether human progress is possible.

It should be stressed that the arguments offered here for the possibility of reason are quite distinct from the Enlightenment belief that the exercise of reason would guarantee a progressive future. Postmodernists and others are quite right to argue that exercises of power often masquerade as exercises in reason. Our pursuit of reason must be vigilant. We must patrol both our own biases and the rhetorical practices of others if we are to harness reason to the pursuit of progress.

**Ethics**

In a previous age of religious orthodoxy, the ethical code associated with a particular religion could be widely accepted. In contemporary society, respect for diversity is urged. Not only are different cultural practices to be respected, but diverse religious and ethical perspectives as well. This widespread respect for diversity is one aspect of the contemporary world that is widely celebrated both within and beyond the academy. Yet many then conclude that respect for diversity is incompatible with any universal ethical statements: if we are to be respectful of others we cannot then criticize them for being dishonest or irresponsible. The only universal ethical
precept possible is respect for diversity itself. Even here there is a potential problem: must we respect the views of those who refuse to respect the views of others?

Habermas argues instead that ethical claims can be judged to be valid if they reflect the consensual results of a dialogue that approaches the ideal conditions for conversation, and if the result of the dialogue is equally in the interest of all affected. That is, reasoned conversation is possible in the realm of ethics as well (Cooke, 1998, pp. 12-13). As an interdisciplinarian this approach has a natural appeal to me, for interdisciplinarity is grounded in a belief that different perspectives can be integrated through open dialogue. Yet one might reasonably wonder if consensus is likely in ethical matters, no matter how reasonable the conversation. In discussing how the world works participants have access to external reality in judging the validity of competing truth claims. In conversing about ethics there is no obvious external referent. Two people with different perspectives on ethics may find no common ground for appreciating the strengths and weaknesses of the two perspectives.

Happily, the possibility of ethical consensus is greatly enhanced by an examination of the sources of ethical argument. How do humans make ethical decisions? In Szostak (2005a), I argued that there are five broad ways in which humans can make any decision:

1. They can analyze the likely consequences of various choices.
2. They can follow some decision rule they have found valuable in the past.
3. They can act as they see others doing.
4. They can act on ‘gut feelings,’ or
5. They can be more concerned about how they act than what they do (that is, emphasize process or virtues such as ‘always act honestly’).

It follows that all ethical arguments draw upon one or more of these types of decision-making [the exception that proves the rule is ‘existentialism,’ a philosophy that effectively requires individuals to choose their own decision-making guideline(s)]. Philosophers have long appreciated that there are a handful of competing approaches to ethical analysis. Yet they have rarely made this argument explicit precisely because philosophical argument has not accorded with Habermas’ conditions. Philosophers have argued for their favored type of analysis and against others, and thus not often recognized that each approach has both strengths and weaknesses.

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8 There is some scope for disagreement as to how many types there are. Philosophers have tended to emphasize the three ‘formal’ types of decision-making associated with consequences, rules, and virtues – see, for example, Baron, Pettit, and Slote (1997) – while downplaying intuition and tradition. Feminist scholars might wish a classification that gives more emphasis to the ‘ethics of caring’ than does mine. Lewis (2000) urges six approaches to ethical analysis. The important point is that a manageably small number of different approaches can be identified.

9 Solomon (1992) is an exception. He notes that consequentialists often see so many possible outcomes as to be unable to decide, deontologists (who follow rules) can be compulsive, virtues can be taken to extremes of obstinacy and foolhardiness, and reliance on intuition can lead to excesses of mysticism and sentimentality. Likewise, blind adherence to tradition can preclude beneficial changes in ethical guidelines. Solomon concludes that each approach fits some situations better than others. To use interdisciplinary terminology, each of the five approaches captures different facets of an issue. One’s judgment of the relative importance of these facets may well vary by issue.
As a result, philosophers have failed to appreciate, at least explicitly, that the different types of ethical analysis often point in the same direction. That is, honesty can be justified in terms of consequences, virtues, rules, tradition, and intuition. None of these justifications are perfect, to be sure: one can always construct a reasoned counter-argument. In the memorable words of Ernst Laszlo (1987) there is no ‘immaculate perception.’ Yet if the preponderance of argument within each type of analysis points in the same direction, then we can reasonably expect that the sort of conversation envisioned by Habermas will indeed reach consensus. We will see below that consensus can indeed be achieved across a wide range of issues.10

The important point here is that societies can respect diversity and still expect individuals to behave honestly, responsibly, and caringly. This result is a bit ironic to be sure. One starts by recognizing that there is no one right way to perform ethical analysis, yet arrives at a conclusion that ethical consensus on a wide range of issues is possible. Moreover, since the five types of analysis are found across all philosophical traditions, these areas of consensus are not for the most part limited to particular cultural contexts. Note that the strategy pursued here – breaking the ‘what is ethical?’ question into a handful of subsidiary questions, and then connecting the answers to these phenomenon by phenomenon – reflects the general strategy of disaggregation and connection pursued throughout this paper.

Achieving Consensus on the Nature of Progress

It has been suggested above that a disaggregated approach provides a productive response to a variety of critiques of the idea of progress. Before proceeding to perform such an analysis, it is useful to review seven arguments as to why human progress should be analyzed in terms of a wide range of phenomena rather than at some broad aggregate level. To be clear: the disaggregated approach recommended here will involve distinct analyses of human progress across some one hundred distinct phenomena. It can be contrasted with the common approach which assumes that one or a few types of progress (such as economic growth or environmental pollution) proxy for human progress as a whole.

1. Once it is appreciated that the human world is characterized by diverse phenomena, and that there is no obvious metric for comparing the experience of progress/regress across these, then examining progress phenomenon by phenomenon is the only viable strategy for evaluating progress historically.11 Any attempt at a more general evaluation of progress must involve implicit judgments regarding which phenomena are most important and/or an assumption that the phenomena one ignores in one’s calculations are (or will inevitably be) moving in the same direction as the phenomena one cares about. Does economic growth or the spread of democracy

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10 Not surprisingly, both philosophers and the public tend to focus attention on those issues for which there is no consensus: abortion, euthanasia, animal rights, and so on. A recognition that different types of ethical analysis often do agree should encourage respect for diversity when consensus does not occur. As well, society is guided to search for aspects of a complex issue where consensus is possible. The heated debate over abortion interferes, for example, with discourse regarding the critical social problem of fetal alcohol syndrome where consensus is much more likely.

11 Notably, even the comprehensive analysis of Van Doren (1967, 15) identifies only five broad types of progress: in knowledge, technology, wealth, institutions, and morality (art is treated briefly in an appendix).
inevitably lead to other progressive changes, or does environmental decline cause numerous types of regress? By attempting to identify an exhaustive list of the phenomena that humans care about, and dispassionately examining the history of progress with respect to each, we can potentially achieve a more accurate, less biased appreciation of the state of human progress. The disadvantage of the disaggregated approach is that a definitive conclusion is unlikely. If both progress and regress are observed, it must be left to the reader to determine which matters the most. Notably, postmodern critiques of scholarly practice often urge a strategy whereby the reader is empowered to reach their own conclusions about the matter at hand, rather than being guided to a particular conclusion by the author.

As noted above, optimists and pessimists both tend to assume that some phenomena are more important, and/or that these are causally related to other phenomena. Perhaps the most compelling of such claims urges a focus on human happiness. Concern that happiness is hard to measure across time and place can be circumvented by focusing on those phenomena that appear most closely related to human happiness. Heylinghen and Bernheim (2000a) pursue such an argument. Yet even they are then forced to argue that there are various types of regress observed in the world, but that the importance of these is exaggerated. Moreover, they avoid the philosophical issue of whether human happiness can be treated as the only goal of human societies: if we could be hooked up to a machine that kept us happy, would we choose such a life? Finally, they inadvertently ignore the importance of human diversity: just because a particular phenomenon is not strongly correlated on average with happiness does not guarantee that it is not of critical importance for some individuals.

2. Just as there is no objective metric for weighting progress across phenomena, there is also no obvious standard to use in identifying what progress might mean at a global level. As was noted at the outset, it is only possible to speak of progress if one has an idea of what is ‘good’ or ‘better.’ Yet humanity has no clear idea of the form an ideal society should take. With respect to individual phenomena, though, it is generally possible to speak of either ideals or the direction in which (most of) humanity would like society to move. But there is simply no objective way of adding the progress or regress observed across economic growth, environment, crime, cultural attitudes, and a host of other phenomena; some individuals may want to place the highest weight on sense of community while others stress economic performance.

3. The disaggregated approach ensures clarity of argumentation. This argument flows from the first two. Previous writers on progress were often unclear as to which types of progress they were referring to. Since claims that society was progressing (or regressing) were made at a vague aggregate level, it was difficult to know where one might begin to critique the analysis. Alternatively, Emerson and George Bernard Shaw are among those who have explicitly made an argument that progress in one realm is always balanced by regress elsewhere. Such an argument, like claims for aggregate progress or regress, deserves to be subjected to empirical scrutiny. Only

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12 This, notably, is an exercise in classification rather than theorizing, and does thus not itself qualify as a meta-narrative. To be sure, exercises in classification are not free of bias. This exercise followed a deductive approach supplemented by a broad inductive reading of the literature to ensure that no important phenomena were missed (Szostak 2003).
with the evaluation of the degree of progress or regress observed across a wide range of phenomena can the merit of such a conjecture be evaluated.13

4. **Others can readily evaluate the research.** No piece of research is ever perfect. If this article were to pursue some (necessarily arbitrary) strategy of identifying whether society was on the whole characterized by progress or regress, any errors or biases in the author’s approach would be deeply buried in the analysis. Good scientific practice calls for a disaggregated analysis, so that each reader can make their best judgment of the reliability of each estimate and how these might best be compared.

5. **This approach can tell us whether the contemporary situation is novel in important respects.** The postmodernist Frederic Jameson has suggested that any sense of continuity or development from the past has evaporated in the postmodern condition (Malpas, 2001, p. 80). A disaggregated examination of progress serves not only to identify those phenomena for which progress is continuing, but also to identify changes within contemporary society that are continuations of trends observable for centuries or even millennia.

6. **Attempts at aggregate evaluation can all too readily lead to ‘my society is better than yours’ claims.** It was common within Western philosophical circles in the nineteenth century to argue that Western societies had progressed in some aggregate sense beyond Asian or African societies. Yet as Isaiah Berlin had urged, one can and should analyze progress in particular realms without engaging in the dubious practice of comparing entire societies. The disaggregated approach has the benefit of allowing us to argue about progress with respect to particular phenomena without in any way supporting the holistic claims to superiority of racists and demagogues.14 It will likely be the case that no society turns out to have progressed further than any other with respect to all phenomena.

7. **This approach sets the stage for a progressive future.** If one makes a global judgment that the world is static or regressive (or only a little progressive), it will not be obvious how this situation can be improved. Of course, those who reach such conclusions often assume or argue away the possibility of progress. If, though, one holds out any hope that humanity’s future can be progressive, one will want to know in what directions human societies have to be moved in order to achieve this result.

A problem here is that virtually every phenomenon is causally linked with virtually every other. This makes it likely that changes one might view as progressive with respect to one phenomenon may cause decline in another. Those who describe the postmodern condition often make precisely this point, suggesting for example that technological innovation leads to environmental degradation. Rather than assume some inevitable causal relationship, it will be necessary to investigate below the possible tradeoffs that may exist across phenomena. For now, the point to stress is that the starting point in designing a progressive future for humanity is the identification of the areas that need improvement.

13 Van Doren (1967, 199) discusses these arguments, and notes that they were often driven by an observation that human nature itself has not improved. Brome (1963, p. 206) is highly critical of this idea of necessary balance. He feels that such a case fails to appreciate what life was really like centuries ago.

Identifying Relevant Phenomena

Before performing ethical analysis, we must first identify the key phenomena that humans/scholars care about. The task of classifying the phenomena of interest to human scientists might seem particularly daunting. Surely there are thousands upon thousands of such phenomena? While this is true, these phenomena can be organized hierarchically within a small number of umbrella categories. Such an endeavour can draw upon a general scientific commitment to the belief that ‘things’ are made up of constituent parts (Krieger, 1997, pp. 31-32). The starting point for the classification in Table 1 is an attempt to divide the subject matter of human science into logical categories. These categories must cope both with individual and societal characteristics. At the level of individuals two categories of phenomena can be identified:

- The first is ‘genetic predisposition.’ As a species, humans share a gene pool that gives all a set of basic abilities, motivations, and emotions.
- While this common gene pool guarantees a certain set of characteristics that defines the species, differences in the precise genes that individuals possess, in concert with differences in environment, serve to guarantee that individuals differ from each other both physically and psychologically. This yields a second category of ‘individual differences.’

All humans are necessarily part of a larger community, especially for the first few years of life. That is, one of the shared characteristics noted above is that humans are born needing the help of others. Several distinct categories of collective behavior can be identified:

- Humans interact with the non-human environment in order to create (and distribute) food, shelter, and other items of practical utility: ‘the economy’
- Humans interact with the non-human environment to create items desired primarily for their aesthetic appeal rather than their utility: ‘art.’ Note that works of art, through their aesthetic appeal, may serve further purposes, such as encouraging religious belief; such effects would be captured in causal links. Art is often viewed as a subset of ‘culture’; it is treated separately here because works of art, while they contain cultural elements, are defined in terms of an aesthetic effect that transcends cultural boundaries.
- The various sub-groups of society must interact in some way: ‘social structure.’ There are always at least two types of sub-group, for the family is ubiquitous, albeit in different forms, and genders have never yet been treated in precisely the same way.
- Power is distributed and exercised: ‘politics.’
- It is obvious that hierarchical economic, social, and political structures evolve beliefs in the correctness of those structures, or at least attempts are made by those at the top to do so. Such beliefs thus logically belong to those categories. Yet societies have a host of religious beliefs, customs, habits, and so on whose connection to these other realms is (at least potentially) tenuous: these can be termed ‘culture.’ Attitudes toward all categories except economy, politics, and social structure are thus part of culture. Following common usage, languages are treated here as a subset of culture. The precise definition of culture becomes clearer as the category is unpacked.
- Humans also develop knowledge of how they can best manipulate the non-human environment to suit various ends: ‘science and technology.’
- The list may seem complete, but humanity must also perpetuate itself as a species, and
thus ‘population’ must be considered. Ability to reproduce depends in turn on ability to survive. The related matter of ‘health’ must also, then, be considered; this deserves more attention than it receives from human scientists.

- The ‘non-human environment’ has been mentioned more than once above. Since it both shapes and is shaped by humanity, it deserves its own category in the classification. This category (and that of genetic predisposition) would provide a link between this classification and a classification of natural science phenomena.

This list of ten logically distinct categories is also arguably exhaustive, for the ten categories subsume all human activities and characteristics. As Table 1 illustrates, it is straightforward to place all subsidiary phenomena within these categories. In several cases, care must be taken to establish the boundaries between categories. As noted above, ‘art’ can be distinguished from ‘culture’ by defining art as that which has an aesthetic appeal not limited to members of particular groups. These precise boundaries become clearer as the categories are further disaggregated.

Table 1 reflects an extensive exercise in disaggregation undertaken in Szostak (2003), and summarized in Szostak (2004). It categorizes in detail, but in an organized fashion, all aspects of human experience. It is motivated by a belief that we can only aspire to understand human experience by appreciating its components and how these interact. Both deduction and induction were used to develop lists of second and then third-order phenomena (Note that these titles refer only to the level of aggregation and imply no value judgment): induction in the sense of finding a place in the classification for all phenomena discussed in a wide variety of works consulted, and deduction in the sense of thinking about how phenomena could logically be disaggregated into their constituent parts. The result should be nearly exhaustive, though some phenomena may have been missed.\(^{15}\) It seems a reasonable conjecture that somebody sometime will have noticed every phenomenon that affects human lives: the scholarly community can thus aspire to an exhaustive list, at least at higher levels of aggregation.\(^{16}\) Importantly, the table is inherently flexible so that new phenomena can be added. As for the organization of the table, this too is flexible: if it were found empirically, for example, that ‘language’ was more strongly related to phenomena in a category other than ‘culture’ the table could be adjusted to reflect that.

Classifications, like any other scholarly enterprise, are subject to bias. It might be worried that I have divided up the world in a fashion that makes it easier or harder to identify human progress. It is thus worthy of note that the classification of phenomena preceded by some years the idea for this project, and even the ethical analysis that will be discussed below. Moreover, the scope for

\(^{15}\) One entry has, indeed, been added to the table. Though it was noted above that culture will include attitudes toward most other categories, an entry for ‘attitudes toward healing’ was missing from previous versions of Table 3.1. This oversight (which was pointed out to me) was especially egregious since Wissler, in his efforts decades ago to classify phenomena, had grouped healing with religion.

\(^{16}\) Sub-atomic particles are an obvious example of important phenomena only observable with advanced scientific methods. It is not clear that similarly unobservable phenomena exist in the realm of human science.
Authorial bias was limited in practice by a heavy reliance on the existing scholarly literature.\textsuperscript{17} As noted above, induction was used to make sure that all phenomena mentioned by a wide range of scholars found some place in the table. More often than not, there was considerable scholarly consensus on how a particular phenomenon should be disaggregated.

\textbf{Table 1: The Phenomenon}

<table>
<thead>
<tr>
<th>Categories</th>
<th>Second Level Phenomena</th>
<th>Third Level Phenomenon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetic Predisposition</td>
<td>Abilities</td>
<td>Consciousness, subconsciousness, vocalization, perception (five senses), decision-making, toolmaking, learning, other physical attributes (locomotion, eating, etc.)</td>
</tr>
<tr>
<td></td>
<td>Motivations</td>
<td>Food, clothing, shelter, safety, sex, betterment, aggression, altruism, fairness, identification with group</td>
</tr>
<tr>
<td></td>
<td>Emotions</td>
<td>Love, anger, fear, jealousy, guilt, empathy, anxiety, fatigue, humor, joy, grief, disgust, aesthetic sense, emotional display</td>
</tr>
<tr>
<td>Time Preference</td>
<td>Individual Differences</td>
<td>Speed, strength, endurance</td>
</tr>
<tr>
<td></td>
<td>Physical Abilities</td>
<td>Height, weight, symmetry</td>
</tr>
<tr>
<td></td>
<td>Energy Level</td>
<td>Physical, mental</td>
</tr>
<tr>
<td></td>
<td>Intelligences</td>
<td>Musical, spatial, mathematical, verbal, kinesthetic, interpersonal</td>
</tr>
<tr>
<td></td>
<td>Sociability (Extro/introversion)</td>
<td>Talkative, assertive, adventurous, enthusiastic vs. reserved, withdrawn</td>
</tr>
<tr>
<td></td>
<td>Emotionality (Stable/moody)</td>
<td>Contentment, composure, vs. anxiety, self-pity</td>
</tr>
<tr>
<td></td>
<td>Conscientiousness</td>
<td>Thoroughness, precision, foresight, organization, perseverance vs. carelessness, disorderly, frivolous</td>
</tr>
<tr>
<td></td>
<td>Affection (Selfish/agreeable)</td>
<td>Sympathetic, appreciative, kind, generous, vs. cruel, quarrelsome, faultfinding</td>
</tr>
<tr>
<td></td>
<td>Intellectual Orientation</td>
<td>Openness, imagination, curiosity, sensitivity vs. closemindedness</td>
</tr>
</tbody>
</table>

\textsuperscript{17} Szostak (2004, pp. 9-14) reviews theories of classification. Scholars of classification argue that the best classifications are those that are practical and theoretically justified. Reliance on scholarly consensus, and the use of induction, ensures that this classification meets both criteria.
<table>
<thead>
<tr>
<th>Other dimensions?</th>
<th>Dominant/submissive, in/dependant, strong/weak, future/present oriented humor, aggression, happiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disorders?</td>
<td>Schizophrenia, psychoticism, ...?</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
</tr>
<tr>
<td>Schemas</td>
<td>View of self, others, causal relationships</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>Parent/child, sibling, employee/r, romance, friendship, casual</td>
</tr>
<tr>
<td>Economy</td>
<td>Total Output</td>
</tr>
<tr>
<td>Income Distribution</td>
<td></td>
</tr>
<tr>
<td>Economic Ideology</td>
<td></td>
</tr>
<tr>
<td>Economic Institutions</td>
<td>Ownership, production, exchange, trade, finance, labor relations, organizations</td>
</tr>
<tr>
<td>Art</td>
<td>Non-reproducible</td>
</tr>
<tr>
<td>Reproducible</td>
<td>Theater, film, photography, music, Dance</td>
</tr>
<tr>
<td>Social Structure</td>
<td>Gender</td>
</tr>
<tr>
<td>Family Types, Kinship</td>
<td>Nuclear, extended, single parent</td>
</tr>
<tr>
<td>Classes (various typologies)</td>
<td>Occupations (various)</td>
</tr>
<tr>
<td>Ethnic/racial Divisions</td>
<td></td>
</tr>
<tr>
<td>Social Ideology</td>
<td></td>
</tr>
<tr>
<td>Politics</td>
<td>Political Institutions</td>
</tr>
<tr>
<td>Political Ideology</td>
<td></td>
</tr>
<tr>
<td>Nationalism</td>
<td></td>
</tr>
<tr>
<td>Public Opinion</td>
<td>Issues (various)</td>
</tr>
<tr>
<td>Crime</td>
<td>Versus Persons/Property</td>
</tr>
<tr>
<td>Technology and Science</td>
<td>Fields (various)</td>
</tr>
<tr>
<td>Recognizing the Problem</td>
<td></td>
</tr>
<tr>
<td>Setting the Stage</td>
<td></td>
</tr>
<tr>
<td>Act of Insight</td>
<td></td>
</tr>
<tr>
<td>Critical Revision</td>
<td></td>
</tr>
<tr>
<td>Diffusion/transmission</td>
<td>Communication, adoption</td>
</tr>
<tr>
<td>Category</td>
<td>Subcategory 1</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Health</td>
<td>Nutrition</td>
</tr>
<tr>
<td>Disease</td>
<td></td>
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<tr>
<td>Population</td>
<td>Fertility</td>
</tr>
<tr>
<td>Mortality</td>
<td></td>
</tr>
<tr>
<td>Migration</td>
<td></td>
</tr>
<tr>
<td>Age Distribution</td>
<td></td>
</tr>
<tr>
<td>Culture</td>
<td>Languages</td>
</tr>
<tr>
<td>Religions</td>
<td></td>
</tr>
<tr>
<td>Stories</td>
<td></td>
</tr>
<tr>
<td>Expressions of culture</td>
<td></td>
</tr>
<tr>
<td>Values (Goals:)</td>
<td></td>
</tr>
<tr>
<td>(Means:)</td>
<td></td>
</tr>
<tr>
<td>(Community:)</td>
<td></td>
</tr>
<tr>
<td>(Everyday Norms:)</td>
<td></td>
</tr>
<tr>
<td>Non-Human Environment</td>
<td>Soil</td>
</tr>
<tr>
<td>Topography</td>
<td></td>
</tr>
<tr>
<td>Climate</td>
<td></td>
</tr>
<tr>
<td>Flora</td>
<td></td>
</tr>
<tr>
<td>Fauna</td>
<td></td>
</tr>
<tr>
<td>Resource Availability</td>
<td></td>
</tr>
<tr>
<td>Water Availability</td>
<td></td>
</tr>
<tr>
<td>Natural Disasters</td>
<td></td>
</tr>
</tbody>
</table>
Establishing the Good

Table 1 was used in Szostak (2005a) to provide the basis for a comprehensive ethical survey. Since a list of the phenomena of interest to human scientists should subsume the list of phenomena that humans care about, every question of interest to ethicists can be viewed as the application of one or more of the five types of ethical analysis (listed above) to one or more of these phenomena. Notably, the list of phenomena includes both individual and societal phenomena. An ethical society needs ethical institutions and values as well as ethical individuals. Yet ethical treatises rarely juxtapose societal and individual analysis. Only by doing so can consistency be assured between analyses of how people as individuals should behave and how societies should be structured.

It was shown in Szostak (2005a) that defenders of each type of ethical analysis appeal to one or more of the others for justification. Moreover, the five types of ethical analysis are each celebrated across the world’s philosophical traditions. That is, the five types of ethical analysis are not themselves products of any one philosophical (or cultural) tradition. And thus the ethical analysis pursued here is not culturally bounded.

Recent developments in the philosophy of science and epistemology establish that neither scientific nor ethical claims can be ‘proven’ or even ‘disproven.’ Scholars can nevertheless compile arguments and evidence that increase collective confidence in particular statements. The emphasis on the pursuit of unassailable argument by ethical philosophers appears quixotic in light of the insights of epistemologists. The greatest confidence should be placed in ethical statements for which each of the five types of ethical analysis largely provides support. The set of statements for which such consensus exists was termed the ‘ethical core.’ It will be argued below that this ethical core provides the basis for a universal ethics that would still respect reasoned arguments against particular elements in the core, but would not casually excuse selfish behavior.

In other words, there is never complete agreement within any of the five types of ethical analysis in favor of (or against) any statement. Honesty is generally viewed as generating good consequences, according with the Golden Rule (and other deontological principles), and being virtuous, but one can construct arguments against each of these conjectures (while likewise
denying the general observation that honesty accords with traditions and makes us feel good). If we seek the perfect ethical argument, we will inevitably fail. We must thus either embrace ‘anything goes’ or accept a more forgiving ethical standard. And such a standard is possible. We can ask whether the arguments in favor of a particular statement are more compelling than the arguments against. If this is the case across all five types of ethical analysis, we can have confidence that the statement is ethical. Our confidence will increase to the degree that arguments in favor are stronger than arguments against. Of course, we cannot escape a subjective evaluation here in determining the relative strength of different arguments. I have striven to reflect scholarly consensus in providing these evaluations. Note that we are not asking scholars to agree on whether a particular statement is correct but rather to agree on whether most of their peers would agree that arguments in favor of a particular statement are stronger than arguments against. This sort of consensus is common in the literature.

It is useful at this point to provide in Table 2 the overall results of the ethical survey undertaken in Szostak (2005a). Note that consensus across the five types of analysis occurs in roughly half of the cases examined. It should be stressed that the ethical statements analysed in Table 2 were not selected randomly. Rather, they are statements about the phenomena outlined in Table 1. Note that for the vast majority of phenomena the ethical question(s) to be asked was obvious: often these ethical statements can be phrased as ‘(more of) phenomenon X is good’ or ‘this aspect/effect of phenomenon X is good.’

For each statement, a score is provided with respect to each of the five types of ethical analysis: If a particular type of analysis has little or no implication for the statement in question, a score of ‘-’ is given: note that this has quite different implications from a score of 3. While numbers have been used as scores for convenience of expression, it would be nonsensical to add these numbers, whether by statement or type of analysis. There is no objective metric by which to aggregate across types of analysis. Moreover the scores themselves represent an ordinal ordering: while a 5 is better than a 4, there is no reason to assume that it is 20 percent better (indeed, it is usually much more impressive than that). In the rating column, an A denotes no score lower than five, a B denotes no score lower than four, and a T, C, V, D, or I indicates that only one type of analysis generated a score below four: respectively tradition, consequences, virtues, deontology, or intuition. Cases for which only tradition and intuition generate a score below four are denoted by T/I. In all cases where letter ratings occur, but one or more types of analysis received a score of ‘-,’ the rating is followed by a ‘-.’

How accurate are these scores and rankings? Given that no scholar has previously attempted such an exercise, there is no basis for comparison. Recall that this table summarizes not the author’s own personal views but an estimation of the strength of various implications of each of the five types of ethical analysis. There are undoubtedly some errors owing to an inaccurate or incomplete reading of the literature (most likely in cases where the score is ‘-’). There were many cases in which it was difficult to determine whether a score of, say, 4 or 5 should be given. Other scholars would undoubtedly reach different conclusions in some cases. Nevertheless, the overall picture is likely broadly accurate.
<table>
<thead>
<tr>
<th>Phenomenon-based Statement</th>
<th>T</th>
<th>C</th>
<th>V</th>
<th>D</th>
<th>I</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Genetic Predisposition:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human abilities are good.</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Most basic drives are good.</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>A-</td>
<td></td>
</tr>
<tr>
<td>Human emotion is good/necessary.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Emotions should be constrained at times.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>B</td>
<td>Enhanced too</td>
</tr>
<tr>
<td>Love is generally good.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Hate is generally bad.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Sympathy is generally good.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Humor is good.</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>Envy is generally bad.</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>Incites effort?</td>
<td></td>
</tr>
<tr>
<td>The future should be valued more.</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>-</td>
<td>4</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>Genetic diversity is good.</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>Genetic engineering can be good.</td>
<td>-</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>-</td>
<td>D-</td>
<td></td>
</tr>
<tr>
<td><strong>Culture:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture is valuable, but individual elements should be evaluated</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>B-</td>
<td>Need social cohesion</td>
</tr>
<tr>
<td>Societies should be open to cultural change.</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>-</td>
<td>3</td>
<td>T/I</td>
<td>But respect tradition</td>
</tr>
<tr>
<td>Individuals are responsible for ethical evaluation.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Be open to innovation.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>4</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>Individuals should be able to choose cultural membership.</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td></td>
<td>Virtue: duty to humanity?</td>
</tr>
<tr>
<td>Religious faith is good.</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religions enhance ethics.</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>-</td>
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**Economy:**

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opportunity.

Roles exist for both public/private  

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<td>Some occupations are bad.</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td></td>
<td>B-</td>
<td></td>
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<td><strong>Health and Population:</strong></td>
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<td></td>
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</tr>
<tr>
<td>Health is good.</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Disease is bad.</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Proper nutrition is good.</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Moderate population growth can be good</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>B</td>
<td>Limit if overpopulated</td>
</tr>
<tr>
<td>A stable age distribution is good.</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>A-</td>
<td></td>
</tr>
<tr>
<td>Abortion can be good.</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>Euthanasia can be good.</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>T/I</td>
<td></td>
</tr>
<tr>
<td>Suicide is bad.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Migration is good.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>T/I</td>
<td>Some limits?</td>
</tr>
</tbody>
</table>

**Technology and Science:**
Innovation is good. & 4 & 4 & 5 & - & 4 & B-

Science should be less hierarchical. & 2 & 5 & 5 & 5 & 5 & T & T reflects power relations?

Science should be more cooperative. & 2 & 5 & 5 & 4 & 4 & T & Little tradition

Science should have stronger links to the wider public. & 4 & 5 & 5 & 4 & - & B-

Scientists should be curious, humble, open-minded, imaginative, honest, tenacious, and courageous. & 3 & 5 & 5 & 4 & 3 & T/I & Self-aware would strive for

Technological innovation should be guided to aid the environment. & 4 & 5 & 4 & 4 & 4 & B &

**Non-Human Environment:**

The environment should be protected (but costs appreciated). & 4 & 4 & 4 & 4 & 4 & B &

Biodiversity is valuable. & 3 & 4 & 4 & 3 & 3 & & Animal rights?

Genetically modified plants are good. & 2 & 3 & 3 & - & 2 & &

Global warming should be opposed. & - & 3 & 3 & 3 & - & &

Resource depletion should be opposed. & - & 3 & 3 & 3 & - & &

Natural disasters should be fought. & 4 & 5 & 4 & 4 & 4 & B &

People should not eat meat. & 2 & 3 & 4 & 3 & 3 & &

Farm animals should be treated well. & 4 & 4 & 5 & 4 & 4 & B &

Aesthetic architecture should be pursued. & 4 & 5 & 5 & 4 & 5 & B &

Transport infrastructure should be developed. & 4 & 5 & 4 & 4 & 4 & B &

Source: Szostak 2005a.

While there may be some errors in Table 2, we can be confident that there is indeed ethical consensus for the vast bulk of cases for which this is identified. It follows that it is indeed possible to identify what 'progress' involves across a wide range of phenomena. As with Table 1 the reader need not analyse Table 2 in detail. It may be useful to peruse some of the statements that receive scores of ‘A’ or ‘B,’ and ask whether these judgments seem controversial. Recall again that one of the advantages of the approach taken in this paper is that it is transparent.
The Historical Record

Space does not allow the performance of a detailed historical survey here. Yet once again it is likely that scholarly consensus can be achieved as to whether progress has occurred with respect to most of the statements accorded a score of 4 or 5 in Table 2. A broad survey of the historical literature undertaken by the author supports that conjecture (see Szostak, 2012). Table 3 expresses the results of this disaggregated historical survey. For slightly over one hundred phenomena or phenomenon-based characteristics discussed, Table 3 indicates whether predominately progress (denoted by P), regress (R), or both (B) were observed; in several cases either the question is not applicable or there are no clear grounds for providing an answer (N). The analysis has been performed for three time periods: the last decades, the last couple of centuries, and the last two millennia. A casual perusal of the table will show that there are many cases of both progress and regress for each time period. Of course, one might object that some of the conclusions in Table 3 are misguided. Scholarly consensus was followed where possible, though there had been little scholarly examination of several of these cases. Nevertheless it seems highly unlikely that the general conclusion that both progress and regress can be commonly observed across all three time periods is itself mistaken. Decisions about whether society is progressing or regressing must depend, then, on which phenomena one values the most. Clearly, different people can reach different conclusions simply by emphasizing different phenomena.

Table 3: Summary of the Evaluation of Human Progress by Phenomenon

(Notation: P= progress; R= regress; B= both; N= neither)

<table>
<thead>
<tr>
<th>Ch. Phenomenon</th>
<th>Experience: Last Decades</th>
<th>Centuries</th>
<th>Millenia</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture in general</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Sense of community</td>
<td>R</td>
<td>R</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Identification with larger groups</td>
<td>N</td>
<td>P</td>
<td>P</td>
<td>Mixed blessing</td>
</tr>
<tr>
<td>Ease of cross-group movement</td>
<td>P</td>
<td>B</td>
<td>B</td>
<td>Ltd by nation-state</td>
</tr>
<tr>
<td>Values in general</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>No human sacrifice</td>
<td>N</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Decreased support for war</td>
<td>P</td>
<td>B</td>
<td>B</td>
<td>Not universal</td>
</tr>
<tr>
<td>Decreased support for slavery</td>
<td>N</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Decreased approval of aggression</td>
<td>B</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Increased approval of achievement</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Should discriminate among types</td>
</tr>
<tr>
<td>Humility</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Respect for others (egalitarianism)</td>
<td>R</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Increased approval of curiosity</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Increased approval of openminded</td>
<td>B</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Sexual freedom</td>
<td>P</td>
<td>P</td>
<td>B</td>
<td>Cost in ethics; some</td>
</tr>
<tr>
<td>Support for caring</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Honesty</td>
<td>R</td>
<td>R</td>
<td>R</td>
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</tr>
<tr>
<td>Trust</td>
<td>N</td>
<td>R</td>
<td>R</td>
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<td>Category</td>
<td>Pos.</td>
<td>Neg.</td>
<td>Neutral</td>
<td>Notes</td>
</tr>
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<td>----------------------------------------------</td>
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<td>---------------------------------</td>
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<tr>
<td>Optimism</td>
<td>R</td>
<td>R</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Value of romantic love</td>
<td>P</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Marriage</td>
<td>R</td>
<td>R</td>
<td>B</td>
<td>Benefits to flexibility</td>
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<td>Care for elderly</td>
<td>R</td>
<td>R</td>
<td>B</td>
<td></td>
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<tr>
<td>Religious freedom</td>
<td>P</td>
<td>P</td>
<td>B</td>
<td>Believers may disdain</td>
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<tr>
<td>Ecumenicism</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Time Preference</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Decrease in deference</td>
</tr>
<tr>
<td>Greater consensus on everyday norms</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>Decrease in deference</td>
</tr>
<tr>
<td>Improved cultural expressions</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>Less hostility</td>
</tr>
<tr>
<td>Stories</td>
<td>R</td>
<td>R</td>
<td>B</td>
<td>Less attention to</td>
</tr>
<tr>
<td>Decreased linguistic diversity</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Some would disdain</td>
</tr>
<tr>
<td>Increased ease of language acquisition</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Ease sp., grammar</td>
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<tr>
<td>Environment in general</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>Future path unclear</td>
</tr>
<tr>
<td>Pollution</td>
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<td>R</td>
<td>R</td>
<td>Internal air quality</td>
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<td>Human generated global warming (bad)</td>
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<td>R</td>
<td>R</td>
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<td>Biodiversity</td>
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<td>R</td>
<td>R</td>
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<td>Resource availability</td>
<td>B</td>
<td>B</td>
<td>P</td>
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<tr>
<td>Control of natural disasters</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Treatment of animals</td>
<td>R</td>
<td>R</td>
<td>B</td>
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<tr>
<td>Aesthetic value of nature</td>
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<td>B</td>
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<tr>
<td>Transport infrastructure</td>
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<td>Aesthetics in Architecture</td>
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<td>R</td>
<td>P</td>
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<td>Genetic fitness</td>
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<td>R</td>
<td>P</td>
<td>Environment change</td>
</tr>
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<td>Human abilities (realization of)</td>
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<td>P</td>
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<td>Genetic drives in general</td>
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<td>Appropriateness of time preference</td>
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<td>Happiness</td>
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<td>Psychological understanding</td>
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<tr>
<td>Self-knowledge</td>
<td>B</td>
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</tr>
<tr>
<td>Pursuit of individual talents</td>
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<td>P</td>
<td>P</td>
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<tr>
<td>Well-rounded individuals</td>
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<td>Parent-child relationships</td>
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<td>P</td>
<td>B</td>
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<td>Respect for personality diversity</td>
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<td>Feeling insignificant from globalization</td>
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<td>(bad)</td>
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<td>Ability to cope with injustice</td>
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<td>B</td>
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<td>Depression (bad)</td>
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<td>Experience of anger</td>
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<td>R</td>
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<td></td>
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<td>Less cultural support</td>
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<td>Experience of aggression (esp.</td>
<td>B</td>
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<td>N</td>
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<td>violence)</td>
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<td>Anxiety</td>
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</tr>
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<td>P</td>
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<td>Not everywhere</td>
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<tr>
<td>Decreased disease</td>
<td>P</td>
<td>P</td>
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<td></td>
<td>Some new diseases</td>
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<td>Increased nutrition</td>
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<td>Junk food, anorexia</td>
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<td>Population</td>
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<td></td>
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<td>Pos/neg effects</td>
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<td>Migration</td>
<td>B</td>
<td>R</td>
<td>B</td>
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<td>19th cent. golden era</td>
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<td>Decreased gender stratification</td>
<td>P</td>
<td>P</td>
<td>B</td>
<td></td>
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<tr>
<td>Decreased class stratification</td>
<td>B</td>
<td>P</td>
<td>B</td>
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<td></td>
<td></td>
<td></td>
<td>Growing underclass?</td>
<td></td>
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<tr>
<td>Decreased role of inherited status</td>
<td>B</td>
<td>P</td>
<td>P</td>
<td></td>
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<tr>
<td>Decreased ethnic strife</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
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<tr>
<td>Identify ourselves as individuals</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Decreased proportion of bad occupations</td>
<td>B</td>
<td>B</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Economic growth</td>
<td>P</td>
<td>P</td>
<td>P</td>
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<td></td>
<td></td>
<td></td>
<td>Some output bad</td>
<td></td>
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<tr>
<td>Leisure time</td>
<td>B</td>
<td>P</td>
<td>R</td>
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<td></td>
<td>Not always valued</td>
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<tr>
<td>Fulfilment at work</td>
<td>B</td>
<td>B</td>
<td>R</td>
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<td></td>
<td></td>
<td></td>
<td>Future brighter?</td>
<td></td>
</tr>
<tr>
<td>Decreased unemployment (effects of)</td>
<td>P</td>
<td>B</td>
<td>B</td>
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</tr>
<tr>
<td>Decreased inequality</td>
<td>R</td>
<td>P</td>
<td>R</td>
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<tr>
<td>Equality of opportunity</td>
<td>B</td>
<td>P</td>
<td>N</td>
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<tr>
<td>Charity</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Effects on culture</td>
<td>B</td>
<td>B</td>
<td>B</td>
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<tr>
<td>Effect of corporate form on values</td>
<td>R</td>
<td>R</td>
<td>N</td>
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</tr>
<tr>
<td>Institutions in general</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
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<tr>
<td>For growth</td>
<td>B</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Appreciate advs. of public/private</td>
<td>B</td>
<td>P</td>
<td>N</td>
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<tr>
<td>For identifying bads</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td></td>
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<tr>
<td>For income distribution</td>
<td>R</td>
<td>P</td>
<td>B</td>
<td></td>
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<tr>
<td>For limiting pollution</td>
<td>P</td>
<td>P</td>
<td>N</td>
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<tr>
<td>Freedom (political, religious, occupational)</td>
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<td>P</td>
<td>P</td>
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<td></td>
<td></td>
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<td>Encourages progress elsewhere</td>
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<tr>
<td>Justice</td>
<td>P</td>
<td>P</td>
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<td></td>
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<td>Government power</td>
<td>P</td>
<td>P</td>
<td>P</td>
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<td></td>
<td></td>
<td></td>
<td>Worry about abuse</td>
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</table>
Table 3 also sheds light on a narrower question: how unusual is the contemporary period? In the vast majority of cases in which regress is identified over recent decades, regress is also found for previous periods (the same holds for progress). Nor is this merely an artefact of the way the three periods were all defined so as to culminate in the present. Regress in such cases can generally be observed in previous centuries and beyond as well. In some instances (but far from all) regress may be occurring at an accelerated rate. Still it is noteworthy that widespread regress across many of the phenomena stressed by critics of contemporary life can also be observed in previous time periods. Thus, the switch from a progressive to a pessimistic attitude does not for the most part reflect a dramatic change in societal experience of progress versus regress. It reflects instead a change in the perception of progress and regress. It could be that those who saw progress all around them in the nineteenth century falsely assumed that progress in certain realms would inevitably spill over into others. Contemporary nihilists may in turn be guilty of downplaying the importance of some types of progress in order to focus their attention on areas
in which regress or stasis rules. On the other hand, those who still proclaim that progress is inevitable may be guide by Table 2 to reflect on the challenge of achieving future progress across the many areas where regress is observed historically.

In the terminology of interdisciplinary analysis, Table 3 can be seen as a sort of common ground among competing evaluations of human progress. It is not so much that optimists and pessimists have disagreed over their empirical evaluation of particular phenomena. It is rather that they have disagreed about which phenomena are most important. Explicitly or implicitly, they have implied that progress or regress in their favored phenomena leads to progress or regress elsewhere. Table 3 provides a common framework in which both optimistic and pessimistic accounts have their place. Within this framework, a more nuanced empirical evaluation of the possibility of future progress becomes possible.

The reader can be spared the necessity of examining each element of Table 3 in detail. Those areas for which regress was observed in some period are:

- **Culture**: sense of community; attitudes toward humility, respect for others, caring, honesty, trust, optimism, marriage, and care for the elderly; stories.
- **Natural Environment**: pollution; biodiversity; global warming; built environment; treatment of animals.
- **Genetic Predispositions**: genetic fitness, genetic diversity
- **Individual Differences**: well-rounded individuals; feeling insignificant; ability to cope with injustice; depression
- **Health**: at a disaggregated level could speak of regress with respect to some diseases.
- **Social Structure**: No regress, though progress could be more rapid.
- **Economy**: inequality; effect of corporate form on ethics
- **Politics**: incidence of war
- **Art**: role in society

Elements of both regress and progress were often found within the same time period for the same phenomenon (in a few cases progress was identified for one period and regress for another). In such cases observers could readily disagree as to which was dominant. It is thus prudent to explore the possibility of encouraging greater progress in these cases as well. Indeed progress may be more readily achieved here than in the cases above:

- **Culture**: culture in general; values in general; time preference.
- **Natural Environment**: environment in general; resource availability; aesthetic value of nature.
- **Genetic Predispositions**: motivations; appropriateness of time preference (some regress over longest time period).
- **Individual Differences**: happiness; self-knowledge; parent-child relationships; respect for personality diversity; expression of anger and aggression; anxiety.

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18 It is worth recalling in this respect that Michel Foucault, the source of many postmodern ideas, rejected the label of postmodernist and urged others to be humble about ascribing special status to their time (Alvesson, 2002, p. 26). Alvesson (p. 24) suggests that the late nineteenth century was a period of even more dramatic change.
- *Health*: population; migration (some regress in middle period).
- *Social Structure*: ethnic strife; bad occupations
- *Economy*: work fulfilment; leisure time; appreciating advantages of both public and private; effects on culture.
- *Politics*: ethical leadership; nationalism; education.
- *Art*: art in general.

**Pursuing Future Progress**

One can sketch policies or strategies that might reverse the regress observed across many phenomena above.\(^{19}\) Notably, one need not rely on any simplistic meta-narrative in order to imagine such a set of strategies: quite different insights can be drawn upon to address different areas of regress. Yet it is also noteworthy that the very insights that have allowed us to evaluate the degree of human progress above can often point us toward achieving greater progress in the future.

In the area of culture, much of what needs to be done involves clarifying and popularizing the ethical core described above and outlined in Table 4. Table 4 reprises all statements that received support from each of the five types of ethical analysis (those in italics received very strong support). Our stories and our art could both better support an ethical and progressive society if the ethical core was more widely appreciated. An appreciation of the five types of ethical analysis is also invaluable in the area of public policy: the first step in crafting policies should involve evaluating the goals of policy in terms of each of the five types of analysis. Foreign policy might be a particular beneficiary: the days when foreign policy was conducted in secret are drawing to a close, and a clear adherence to shared values would be a salutary strategy. Public policy analysis could likewise benefit from a more explicit appreciation of the links that exist between the phenomena in Table 1 above; many unwanted side effects of policies might then be avoided (see Szostak, 2005b).

It was noted above that contemporary pessimism regarding human progress is rooted in three concerns: that human societies can not agree on the direction of human progress, that the world is too complex for us to identify the path to progress even if we could agree on goals, and that reason does not govern human affairs and thus we could not institute the right policies even if we could identify them. This paper has argued that we can indeed agree on what progress would mean with respect to a wide range of phenomena. It is useful to close the paper by discussing how we might cope with the challenges of complexity and unreason.

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\(^{19}\) See the extensive table in chapter 17 of Szostak (2012). The table describes activist strategies and/or academic research strategies which could address 81 distinct areas in which progress should and could be experienced.
### Table 4: The Ethical Core

| **Culture** | The value of culture should be accepted in general, but individuals and societies should be prepared to evaluate individual elements (while recognizing the diverse effects individual elements of culture may have). Societies should thus be open to cultural innovation. Achievement should be valued, but the abuse of power disdained. *One should help others, but not deny oneself.* A slight bias toward optimism is beneficial. *Marriage is good. People should focus on the care of children* The elderly should be cared for and given fulfillment. Societies should strive for consensus on everyday norms. Expressions of culture should be appreciated (except those supporting bad values), while encouraging creativity. Rules of spelling and grammar should be simplified. |
| **Non-Human Environment** | Societies should protect the environment (but be conscious of the cost of this), fight natural disasters, treat farm animals better, and produce more aesthetically pleasing architecture. |
| **Genetic Predispositions** | Humanity should appreciate for the most part its inherent abilities, *motivations,* and emotions. Genetic diversity should also be valued. While emotion is good, people need at times to constrain their emotions. Love and sympathy (and humor) are generally good, while hate is generally bad. The future should be valued more. |
| **Individual Differences** | Virtuous behavior leads to happiness. Self-knowledge encourages both happiness and ethics. Personality diversity is good. Nevertheless, a number of beneficial personality characteristics can be identified: some degree of emotional control, empathy (but individuals should not wallow in guilt), *honesty,* and respect (for the complexity of others). Individuals should recognize both the ubiquity of injustice and one’s ability to fight this. *Relationships should be valued.* |
| **Health and Population** | Health is good. Disease is bad. Proper nutrition is good. Moderate population growth can be good. *A stable age distribution is good.* |
| **Social Structure** | *Families should be valued (but one should not just assume one type of family best).* Some occupations are bad. |
| **Economy** | Not all ‘goods’ are beneficial. Societies should increase fulfilment at work, decrease unemployment, and decrease income inequality (by redistributing). Societies should strive to equalize opportunity. A role for both public and private sectors should be recognized. The value of private property should be appreciated. *Charity is good.* (Note: the ethical core contains elements thought of as right-wing – appreciate private property – and left-wing – redistribute income). |
| **Politics** | *Government is good.* Justice should be pursued as a goal. Democracy is good. Some wars can be justified. *Institutions should be evaluated with respect to all five types of ethical analysis.* Societies need bureaucracies with some limited degree of flexibility. *Education is good.* Crime is bad. Punishment is justified (but there is much injustice in the system). |
| **Technology and Science** | Innovation is good in general. Science should have stronger links to the public. Technological innovation can and should be guided to aid the environment. |
| **Art** | Art is good and important. Creating art is good and important. |
Coping with Complexity

The best path to coping with complexity involves first facing up to it. Most theoretical efforts in human science address the relations among a handful of the phenomena in Table 1. They in practice ignore the possibility that relationships with yet other phenomena might interfere with or at least condition the processes they analyze. Yet it is possible to imagine some causal connection between almost any pair of phenomena in Table 1. Natural scientists do a much better job, it might be noted, of stipulating precisely under what conditions (that is, realizations of other phenomena) a particular causal relationship will hold. Public policies grounded in such partial understandings of a complex reality are likely both to miss important aspects of the problem being addressed and have unpredicted (but potentially predictable) negative side effects on other public policy goals.

The claim here is important: we can not hope to cope with complex social problems unless we first face up to the complexity of the world in which we live. Much of this paper has served to outline ways in which we can get a grip on that complexity: by identifying the constituent phenomena, understanding how these interact, and organizing these understandings.

There are several strategies that deserve particular emphasis:

- **Employ interdisciplinary analysis.** While individual pieces of scholarly research explore only a small part of the complexity of the world, the interdisciplinarian can achieve a much more comprehensive and nuanced understanding of any issue by integrating the insights emanating from different researchers and disciplines. Other papers in this volume discuss various types of integration. Repko (2011) provides a very useful guide to the performance of interdisciplinary research. Yet interdisciplinary analysis is limited by the scope of disciplinary research. Interdisciplinarians can usefully urge improvements in disciplinary research practice. These will generally involve encouragement to embrace a wider range of phenomena, theories, or methods.

- **Carefully map all relevant causal linkages.** As suggested above, this means not just appreciating all of the phenomena involved in a social problem or its resolution (and the interactions among these) but the side effects that policies may have on yet other phenomena. Given the limited scope of disciplinary research (and the tendency of disciplines to simply ignore the existence of other phenomena), it is all too easy to neglect relevant linkages unless one consults an exhaustive list of phenomena such as that in Table 1.

- **Likewise, draw upon the widest range of theories and methods.** No theory or method is perfect. Each has its strengths and weaknesses. The best policies will result not from the narrow application of one imperfect theory, no matter how much evidence from one imperfect method can be cited in its support. Rather we need to integrate argument and evidence from the widest range of theories and methods. As with phenomena, we are likely to overlook relevant theories and methods unless acquainted with the full range of theories and methods. Szostak (2004) established a five dimensional classification of types of theory. He also provided a list of the twelve broad methods used by scholars. By asking the 5W questions – who, what, where, when, and why – of each theory type and
method, he was able to establish the key strengths and weaknesses of each.\textsuperscript{20} Importantly he was also able to show that disciplines choose mutually supportive sets of theories and methods: since a discipline’s favored method is likely to exaggerate the power of its favored theory, we will want to ask what other disciplines’ methods have to say about that theory. Researchers can consult these classifications in order to determine which theories and methods are most applicable to a particular research question. If they instead merely follow disciplinary practice they will gain an incomplete and likely biased understanding.

- **Develop more coherent systems of knowledge organization.** The academy devotes an infinitesimal fraction of the resources spent on research to organizing the results of that research. Existing systems of library classification tend to be grounded in disciplines. The exact same topic may thus appear in several different places in a library classification, often using different terminology. Moreover, works are usually classified in terms of (one or two of) the phenomena studied rather than the relationships among these. Nor are works usually classified in terms of the theories or methods applied. Trying to find “what theories or methods have already been applied to the study of how phenomenon A influences phenomenon B” is thus incredibly difficult. This need not be the case. It is both feasible and desirable to develop a better system of classification that would organize our fragmented understandings more coherently (Szostak, 2007, 2008, 2011).\textsuperscript{21}

**Combating Unreason**

Four complementary paths to encouraging reasoned conversation can be identified:

- Ethical education. As Habermas would stress, people must come to want reasoned conversation. They need to realize that both they as individuals and the broader society will be better served if they pursue social responsibility and open-mindedness. Humility and courage are important components of this ethical outlook.

- Rhetorical education. As in other endeavors we should hardly anticipate a perfect ethical outlook from all. Those who wish to pursue reasoned conversation need thus to be able to debate those who wish to win at all costs. Fortunately, rhetoricians have studied debating tactics for thousands of years, and there are many handy guides to rhetorical tricks and how to combat these.

- Critical thinking education. Complementary to rhetorical education, this shows how to both make and evaluate arguments. Groarke and Tindale (2004) provide a very detailed guide. They urge, among other things, precise definitions of terms, visualization of arguments such that precepts are clearly distinguished from conclusions and emotional from reasoned argument, and interrogation of authorial biases. One or more chapters address arguments from classification (such as ‘all X are Y’), prepositional statements (such as ‘if X then Y’), and inductive arguments.

- Institutional reform. The fourth path requires more imagination at present, but the goal is straightforward: to increase the rewards for open honest conversation and/or increase the penalties for dishonest or evasive rhetoric. Some sort of arms-length evaluation of the veracity of political claims might be useful for example. Note that such institutions

\textsuperscript{20} He could thus show in detail how the methods favored by disciplines tend to be biased toward supporting their preferred theories.

\textsuperscript{21} See also the Leon Manifesto at www.iskoi.org/ilc/leon.htm
become easier to imagine as the citizenry appreciates both the ethical and rhetorical material above.

Concluding Remarks

This paper has argued for a disaggregated but coherent evaluation of human progress. Rather than focus on a small number of types of progress, as is the norm in the literature on progress, the paper instead looks at a wide variety of types of progress. It argues that it is quite possible to identify what would be a progressive change with respect to some one hundred distinct phenomena. Human history has seen progress with respect to many of these but regress with respect to many others. There is no objective weighting by which it can be determined whether progress has outweighed regress. It is however possible to envision a set of strategies that would allow humanity to achieve progress across (virtually) all of these phenomena in future. An objectively progressive future is thus entirely possible.

Interdisciplinarity itself is one of the keys to a progressive future. The key insight of the present paper for interdisciplinary research involves the value of classification. The paper has produced classifications of phenomena and types of ethical analysis, and used these to develop tables of ethical evaluation of phenomena and historical experience of progress by phenomena. It later noted the value of classifications of theory types and methods (and their key strengths and weaknesses). And it urged the development of better systems of library classification. The synergy between interdisciplinarity and classification is often overlooked (in part because some interdisciplinarians worry that classification is antithetical to the freedom of inquiry associated with interdisciplinarity). Exhaustive but coherent classifications alert researchers to the full range of possibilities (and thus structure supports freedom) while organizing the results of all research such that these can be readily assimilated.

References

New Departures in Tackling Urban Climate Change: Transdisciplinarity for Social Transformation (a critical appraisal of the WBGU’s 2011 Report)

Christoph Woiwode¹

Abstract: In 2011 the German Advisory Council for Global Change (WBGU) published a remarkable policy document entitled World in Transition: A Social Contract for Sustainability in which the authors proclaim the need for a great social transformation at the global scale in order to address climate change. This article builds on and critically discusses the central messages of the report that emphasizes the necessity to pro-actively shape the change of our values and worldviews that underpin our lifestyles and consumption patterns. By arguing for a transdisciplinary approach to implement this challenging vision the report identifies urbanization as a significant dimension in these processes thus shifting away from the dominant focus on socio-technical solutions. This puts the field of urban planning and development and related disciplines at the centre of the climate change adaptation and mitigation debate raising profound questions as to how these professionals, academics and practitioners could respond to the ideas brought forward in the report. The author considers this an opportunity for hitherto largely neglected integral approaches to gain more importance in mainstream urban planning practice and theory. The concluding part sketches out an initial research programme based on the previous discussion in order to illustrate at a more concrete level the implications of an integrative, transdisciplinary framework for planning.

Keywords: Climate change, social transformation, values changes, transdisciplinarity, integral theories, urbanization, urban planning.

The city is an ecosystem as intricate part of the Earth and ecological integrity is an important guideline. […] The social, cultural, political and spiritual challenges are respectfully intertwined. Together they lead the way to unprecedented innovation and value added solutions. (Walas Concepts, n/d, p. 4)

Introduction

How humanity will be able to mitigate the impact of and adapt to climate change is decided to a great extent in urban areas. The urgency presently created by urbanization is twofold. More

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than half the world population already lives in cities, consuming approximately three quarters of
global primary energy produced - with both these phenomena showing an upward trend.

In this respect, last year’s report, World in Transition: A Social Contract for Sustainability\(^2\) published by the German Advisory Council on Global Change (WBGU), is remarkable for its
thematic focus on the inevitability of a social transformation to achieve global sustainability
particularly in view of climate change. It is remarkable because this can be viewed as a
significant attempt to expand the contemporary focus on climate change analysis and response
beyond technological solutions and innovations into the realm of cultural change, a hitherto
largely neglected research and policy area. The existence of the Council dates back to the year
1992, when it was set up by the German government as a scientific advisory body in the run-up to
the Rio Earth Summit. Ever since its members have been eminent scientists, among the currently
serving members are such internationally renowned climate and social scientists like Prof. Dr.
Schellnhuber\(^3\), Prof. Dr. Messner\(^4\) and Prof. Dr. Leggewie\(^5\). According to its homepage the
Council’s principal tasks are to:

- analyse global environment and development problems and report on these,
- review and evaluate national and international research in the field of global change,
- provide early warning of new issue areas,
- identify gaps in research and to initiate new research,
- monitor and assess national and international policies for the achievement of sustainable
development,
- elaborate recommendations for action and research and
- raise public awareness and heighten the media profile of global change issues.

Precisely because it confirms the central role of sustainable urban development, the authors
identify Transformative Governance of Urbanisation as one out of three “key transformation
fields” at the global level. This essay employs an integral lens using this publication as a red
thread and impetus to discuss the novelty of such an approach to climate change as well as some
of the main issues, arguing that this shift of attention (in worldview in fact) requires a critical and
fundamental review of our existing urban planning frameworks, concepts, methods and practices.

Because I refer to a range of terms related to the “integral paradigm” throughout this essay, I
deem it necessary to briefly clarify my take on these concepts right at the outset. Presently there are
considerable conceptual overlaps and links between the terminologies used to characterise

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\(^2\) There is a notable loss of meaning in the English version of the report’s title and in the name of the
Council itself. In German: Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen
translation of the Council’s name would reflect the focus on the environment and sustainability: “German
Advisory Council on Global Environmental Change”, while the German title of the report reflects better
the actual thematic focus on social transformation and the issue of values change to achieve sustainability.

\(^3\) Director of the Potsdam Institute for Climate Impact Research, external professor at the Santa Fe
Institute and chair of the Governing Board of the Climate-KIC of the European Institute of Innovation and
Technology.

\(^4\) Director of the German Development Institute, Bonn.

\(^5\) Director of the Institute for Advanced Study in the Humanities, Essen, Institute for Advanced Study of
the University Alliance Metropolis Ruhr.
this emerging “all-encompassing,” integral worldview. A crucial reason for this is that it is a contemporary, very fluid process of theorising that is still searching for defining terms like integralism, meta-theory, (w)holism, and transdisciplinarity. I use integrative and integral interchangeably, similar to Benedikter and Molz (2012) who term these “paradigmatic attempts” integrative, inclusive or integral. These two scholars point out “Integral, integrative, inclusive or holistic, while not being fully identical in their denotation, cognitive interest and core concept, have shifted their meaning from depicting an imaginary whole […] to the search for inclusion for the largest number of possible viewpoints on one and the same issue or question, even if those viewpoints may be conflicting with each other” (Benedikter & Molz, 2012, p. 34). It is the second part of the quote that I consider particularly valuable emphasizing diversity, contradiction, conflict and perhaps even paradox in our increasingly complex and crisis ridden times. Integrative approaches such as Ken Wilber’s Integral Theory⁶ are considered metatheories by scholars like Reynolds (2006, p. 121), Wallis (2010) and Edwards (2010, p. 16). The latter terms the meta-theoretical response to theoretical pluralism “integrative pluralism”, thus suggesting, on the one hand, that the diversity of theories be retained and connected, whereas, on the other hand, there can be meta-theories that are not integrative if they do not so.

Even though transdisciplinarity will be given more space in the discussion to follow due to its central place in the WBGU report, it is important to state here that transdisciplinarity is clearly linked to an integral and meta-theoretical discourse as well (e.g., Gidley, 2008; Riedy, 2007). According to Nicolescu (2002), the term transdisciplinarity can be used as a philosophy (a stance, placing it in the larger context of our existence⁷), an epistemology (integration and unity of knowledge, non-dualism) and a methodology (resolving practical issues in problem-oriented scientific research, particularly environmental studies). For instance, the integral model presented by Wilber respects multiple validity claims, since each quadrant’s domain acknowledges evidence from different data using different methods. By virtue of this fact, Integral Theorists (Esbjörn-Hargens & Zimmerman, 2010, pp. 66-76) stress that an integral approach can provide a more comprehensive way to understand climate change and thereby produce more adequate solutions as it integrates disciplines by including and transcending them: “[…] it [Integral Theory] ‘hovers’ above conventional disciplines, providing a map for understanding how they relate to and influence each other. The integral framework is perhaps better described as a transdisciplinary framework that serves to integrate each discipline or approach into a larger picture, rather than as a multi- or interdisciplinary framework that brings different disciplines together, without necessarily accounting for the synergies between perspectives and domains of reality” (O’Brien & Hochachka, 2010, pp. 93-94). According to these “integral” scholars it appears that “transdisciplinarity”, “(integrative) metatheorising” and “integral” carry very similar if not identical conceptual meanings and connotations.⁸ Important for the following exploration is

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₆ It has become convention to refer to Wilber’s approach in capital letters in order to distinguish it from other integrative frameworks.

₇ “The sum of the knowledge about the universe and natural systems, accumulated during the twentieth century, far surpasses all that has been known during all other centuries combined. How is it that we know more about what we do, and less about who we are?” (Nicolescu, 2002, p. 6).

₈ This discussion on terminological permeability could be further expanded. In Critical Realism, for example, the term postdisciplinarity is introduced with a seemingly similar meaning like Nicolescu’s notion of transdisciplinarity: “Postdisciplinarity […] envisages the demise of disciplines as we know them and revels in the freedom, eclecticism and new sense of unity this is supposed to bring” (Hartwig, 2007, p. 259).
how these notions differ from the understanding the WBGU postulates about transdisciplinarity and the use of “integrative/integrated” within the urban planning community.

Accordingly, the logic of the argument is developed along four key themes. It begins with a broad view about the interface of the state of the world and the notion of planetary interdependence in the context of climate change pointing out an underlying convergence in this regard of the modern sciences and wisdom traditions. This part highlights the endeavour of integral frameworks to bridge existing divides of science and religion, objectivity and subjectivity, among others. A following section, Pathways to action, takes up one of the central theses of the WBGU report, notably the change of values as a precondition for social transformation. In this section I discuss the existing gap of intellectually and cognitively understanding the link between consumption patterns and greenhouse gas emissions on the one side, yet an inability to act accordingly on the other side. Integral frameworks, it would seem, have the potential to bridge this gap through their explicit appreciation of the interior dimension of human life, and a recognition of practises that can systematically transform consciousness. The next part provides a generic overview of the current state of affairs in urban planning and development as one of the key strategic areas defined in the WBGU report. Here the underpinning thesis postulates that urban development, being considered an interdisciplinary policy area, must be complemented by a transdisciplinary approach if it is to respond more adequately to the challenge of climatic change. Thus the concept of transdisciplinarity highlighted by the authors of the report is discussed with respect to the discourse of and potentials integral frameworks might hold for contemporary urban planning practise and theory. In virtue of the conceptual and largely abstract analysis up to this point, it is important for a practice-oriented field like urban planning to attempt in the conclusion presenting a way forward. This is offered by way of drafting a research agenda which outlines some concrete areas for further study.

Planetary Interdependence: Complexity and Interconnectedness in Science and Ancient Wisdom Traditions

In this section I describe how, in the 20th century, scientific advancements discovered complexity and interconnectedness as essential defining aspects of the universe and its relationship to global climatic change. Interestingly, especially the notion of interconnectedness has been an essential part of ancient wisdom traditions, which therefore may have a potential to contribute in their own way to finding a solution to the problem.

As the quote at the beginning suggests, cities can be seen as one of the most complex systems created by humans. In the 20th century, the “systems” perspective became one of the most prominent approaches of understanding reality in the natural and social sciences alike. This has also been the primary approach in the assessments of the Intergovernmental Panel for Climate Change (IPCC). While the importance and significance of this scientifically grounded research is not questioned, climate change involves more than that, for it also “[…] is closely related to how humans perceive themselves in the world and how they confront change. In fact, although it is certainly about the climate, at another level it is about how humans both create and respond to change” (O’Brien, 2009, p. 1). In its appraisal of ongoing funded research projects on urbanization and climate change in Germany and the EU, the WBGU criticizes just that:
“Particularly the cultural aspects, which – as they determine innovation acceptance and diffusion and consumption behaviour – are central to the transformation success, are not sufficiently taken into account in the programmes, or not explicitly mentioned” (p. 345). It is this omission of the inter-subjective (cultural) and subjective (psycho-spiritual) realms where current urban practice and research on climate change appears to be largely blind.

In a way the issue of climate change challenges our ways of thinking, doing research and seeing the world. Because by and large “scientism” has become a predominant notion that led to an objectification of the world and an analytical approach of disciplinary (hyper-) specialisation, scholars remain in their field of expertise and find it hard to consider and study the existing connections through boundary-crossing research. Ironically, to a large part driven by this scientific quest in quantum physics and the life sciences, the past century witnessed a convergence of science and ancient wisdom traditions by virtue of the shift from a predominantly mechanistic to a complex systems worldview that is characterized among others by non-linearity, complex causal interrelationships and -dependencies, feedback loops, co-evolution and emergence, a blurring of the subject-object relationship, autopoiesis, et cetera. One of the most far-reaching insights of quantum physics is probably the (re-)discovery of non-separability as a type of causality, i.e. all entities interact no matter what their distance is (Nicolescu, 2002), an insight not entirely new to Hindu and Buddhist thought, among others.

This universal (global) interconnectedness is now forcefully placed in front of us through the issue of climate change, as noted in the Human Development Report 2007/2008 that states a “fundamental sense in which climate change challenges us to think differently about human interdependence” (UNDP, 2007, p. 60). In this report we also find a reference to ancient Greek philosophers applying a model of concentric circles to understand human affinity “from family, to locality, country and the world” thus recalling in principle the notion of a holonic universe as found in many illustrations of Integral Theory (e.g. Wilber, 2000 and 2007). A notion of this interrelatedness would evoke serious questions of morality, for we are nowadays more often made aware about how our consumption affects lives in other parts of the world. In other words, a “rich individual” is inescapably connected by his/her consumption patterns to a “poor/vulnerable person” in a far away country/region. Accordingly, the authors of the Human Development Report argue that this knowledge about planetary interconnectedness would also invoke an ethical responsibility which can no longer be denied. As a common ground inherent to and uniting all religions/faiths, the report points out, we find stewardship, social justice and environmental ethics (UNDP, 2007, pp. 60-61).

Developing a planetary consciousness is thus one of the foremost tasks ahead of us, one might think, but has received not much attention so far in most public discourses. It will require a shift in worldviews from an egocentric I to ethnocentric us to a planetary all of us. While this dimension is briefly discussed in the WBGU report with respect to global governance, the authors remain practically within the framework of ‘Western’ positivist science merely taking into account “present relevant knowledge of cognitive science, psychology, anthropology, cultural sciences and sociology” (p. 327). In doing so they remain doubtful “whether humans, as ‘cooperative animals’ (Tomasello, 2009), are fundamentally capable of developing a global ‘We’ identity” (p. 327). As a consequence, it is recommended that “it must generally be determined whether there are cognitive boundaries which fundamentally overtax humans and human societies, and how these can be overcome, if applicable” (p. 327). An issue as existential for
humanity like climate change should urge us to think far beyond such conventional disciplines or at least make a significant attempt to drive them further into new areas. In my view we can possibly not afford neglecting the potentials of a spiritual approach to life, nature, and the universe, an area that is increasingly returning to the public realm. Political philosopher Michael Sandel commented recently: “Consider the environment [...] real change will depend on changing people’s attitudes toward nature and rethinking our responsibilities towards the planet we share. This is a moral and spiritual project, not only an economic one.” (Sandel, 2009; emphasis added).

Because integral frameworks generally adopt a critical stance towards existing thought paradigms and global issues, they carry a strong and explicit element of human emancipation including the power to release transformative energies in individuals and at the collective level. Hence it is in this area that integral approaches such as Ken Wilber’s Integral Theory and Roy Bhaskar’s Critical Realism and philosophy of Meta-Reality can contribute to the discourse of sustainability and climate change (e.g., Bhaskar et al., 2010; Brown, 2006; Esbjörn-Hargens and Zimmerman, 2009; O’Brien & Hochachka, 2010; Zimmerman, 2009). Hamilton (2008) in particular has developed an important approach to the integral city that explicitly acknowledges the urban bio-ecoregion and the evolution of consciousness. She draws from a range of integral and related thinkers including Ervin Laszlo, Clare Graves, Don Beck and Ken Wilber to develop a new imaginary of the city:

An Integral City is a way of looking at the city, regardless of its size, to see it as if it were a whole system – a living system that has emerged from an ecology of consciousness and includes (but is not limited to) discursive, political and religious/spiritual contexts together with a specific natural environment (such as mountain, sea or prairie), climate and natural ecology. As such, an Integral City is dynamic, adaptive and responsive to its internal and external life conditions. (Hamilton, 2008, pp. 51-52)

In this approach ecology and the human-nature relationship are central to the notion of cities, i.e., the relationship of cities to the carrying capacity of their ecoregion and the Earth as a whole. Hamilton’s observation is that “we lack both a philosophy and a science of sustainable human settlement. That is what Integral City seeks” (Hamilton, 2008, p. 9). As a result, it is crucial how we value the relationship of city and ecoregion. She urges that every city should maintain a stewardship relationship with its ecoregion and with the overall wellbeing of the earth, because the current stage of human history would demand we re-appreciate this relationship.

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9 In the introduction to his “Reflections on Meta-Reality” Roy Bhaskar states: “The philosophy of Meta-Reality describes the way in which this very world nevertheless depends upon, that is, is ultimately sustained by and exists only in virtue of the free, loving, creative, intelligent energy and activity of nondual states of our being and phases of our activity. In becoming aware of this we begin the process of transforming and overthrowing the totality of structures of oppression, alienation, mystification and misery we have produced; and the vision opens up of a balanced world and of a society in which the free development and flourishing of each unique human being is understood to be the condition, as it is also the consequence, of the free development and flourishing of all” (Bhaskar, 2002, p. 8).

10 Since this is very much (evolutionary) work in progress it is worthwhile to visit Marilyn Hamilton’s website on www.integralcity.com to see the application of this approach to urban development.
Homer-Dixon, who authored “The upside of down: catastrophe, creativity, and the renewal of civilization” (2006), outlined some of the key issues any serious investigation of responding to climate change must incorporate at the conference “The Great Transformation: Climate Change as Cultural Change” in Germany in 2009. He identifies in his analysis four distinct yet interconnected areas of transformation: cognitive, economic, political, and normative.11 Similarly to above statement he argues: “Politically, we need to extend the boundary of our conception of community – the boundary of the ‘we’ – to encompass the entire species.” In his view, political transformation will build collective intelligence. For normative transformation to succeed “we have to move from a narrow, utilitarian discourse on our motivating values to a more vigorous consideration of the moral and especially existential values that determine our view of ‘the good life’.” He identifies three categories of values: (a) simple preferences (utilities), (b) moral values (oughts), and (c) existential/spiritual values (which bring meaning into lives, the cosmos and the world, i.e., what is “a good life”). Tellingly, he pointed out that in public attention and discourse the value categories would usually receive decreasing attention from one to three. Lastly, Homer-Dixon made a crucial comment indicating a next stage in the consciousness of humanity: “These four transitions, should we make them successfully, will mark a shift from a stage of the development of our species analogous to adolescence – characterized by exuberance, narrow self-interest, short time horizons, a tendency towards self-gratification, and a sense of invulnerability – to one analogous to adulthood.” Interestingly, this sounds almost like a reference taken from Wilber’s (2000) work who exhibits a similar understanding of consciousness development at individual and societal levels. It seems these two perspectives indeed converge here even though Homer-Dixon does not refer directly to Wilber’s Integral Theory.

By bringing together Western psychology with the philosophies and practices of ancient wisdom traditions a great potential for contributing to the resolution of contemporary crises may arise, because the latter have developed techniques of spiritual growth which go beyond the physicality of the body working at a more subtle level deeply on the mind and soul, thus carrying the potential to overcome the “cognitive boundaries” previously mentioned (e.g., Combs, 1996). For example both developmental psychology and many spiritual traditions such as Sri Aurobindo’s Integral Yoga (Satprem, 1970; Sri Aurobindo & The Mother, 1973), stress the evolutionary character and capacities of individuals and human societies. Their models of human development include an ongoing evolution of consciousness which eventually will help to overcome currently existing cognitive limits. Surely this is an area widely disregarded as esoteric and irrational, especially in the secularised societies of Western Europe, but religious sociologists, philosophers and theologians currently observe a process of increased spiritualisation and resurgence of religiosity across the world (Heelas & Woodhead, 2005; Tacey, 2003). In a global perspective, this phenomenon of increased public visibility of religiosity and spirituality has many faces and must be seen in relation to the respective social and cultural contexts, e.g., Pentecostal Evangelism in Latin America and African Countries, individualised eclectic spirituality practiced outside the churches in many Western countries (Knoblauch, 2009; Mohrmann, 2010), or more fundamentalist like the Indian Hindutva movement (Hansen, 2004; Jaffrelot, 1999). Interestingly, many of these movements are concentrated in urban settings, thus gradually triggering more attention by urban researchers and

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11 Everything cited here about Homer-Dixon’s approach is taken from my personal conference notes: The Great Transformation: Climate Change as Cultural Change, International Conference, June 8-10, 2009, Essen (Germany), www.greattransformation.eu.
planners as well (metroZones, 2011; Beaumont & Baker, 2011; Woiwode & Scholz, 2012). To be clear, not all of these are part of an integral perspective of spirituality rooted in a (post-) postmodern worldview valuing among others inclusion, emancipation, wholeness by integrating “multi-rational modes of cognition” that bridge scientific reason and individual reflexivity (Benedikter & Molz, 2012, p. 61).

Nonetheless, based on this understanding of global interdependence, the role of science and ancient wisdom traditions, the subsequent paragraphs will more explicitly explore social transformation in terms of changing values, consciousness and change agents.

Pathways to Action: Changing Values, Changing Consciousness and Change Agents

Novel in this report is indeed - compared to the usual focus on innovative technologies - the extensive attention and emphasis on a change of values and the role of change agents to address climate change. This achievement in itself is due to the fact that the report was developed by a truly interdisciplinary panel of high level scholars who worked together on integrating their disciplinary views. In contrast, for long the “hard” climate sciences have informed and driven the options for solutions to climate change, whereas the humanities did barely contribute to the debate – while the latter may be partly blamed due to their failure to contribute significantly to the debate, it is certainly also partly on account of the very dominance of the natural sciences in the analysis of climate change. Yet the cumulative effect of more recent crises like soaring global food prices, financial turmoil and securing increasing energy demands have an empowering effect on formerly marginalized views about development and economics, especially in bringing qualitative aspects to the fore.

In essence, these “academic underdogs” have for quite some time now asked critical questions such as “What is a good life and good quality of life? Which values and worldviews define a good life? What are alternative development models?” or even more radically taking an anti-development position by critically questioning the ideology and notion of development itself. Critical commentators and writers on development theories have highlighted the narrow-mindedness of the modernist, materialist, technical notion dominant in mainstream development for a long time (e.g., Max-Neef, 1982, 1991; Rahnema, 1997; Rist, 2002; Sachs, 1992; Schumacher, 1973). It seems consumption patterns and urban life are now more seriously being reviewed, shifting the focus away from the dominating growth paradigm towards “prosperity without growth” (Jackson, 2009). As the WBGU report interestingly points out, development is being measured not merely in quantitative terms (ever more of everything) but with a view to well-being and happiness as well. Accelerated by the financial crash there is an increasing body of literature available now proposing unconventional approaches to economic thinking that has, in addition, also stepped out of a purely academic discourse (especially those publications on happiness and well-being). Gradually, this subject is discovered by international development experts as well, as demonstrated by the 3rd Bonn Conference on International Development Policy in January this year which was entitled “Global Lifestyles-New Pathways for Development Policy”. Often we learn that people need to be made aware of environmental problems, and that many already are - the WBGU provides an overview of the proliferation of environmental values across countries based on the World Values Survey -, but most would not
act accordingly in their day-to-day life. The crucial shortcoming of this approach and analysis is the fact that almost no attention is being paid to human psycho(-spiritual) capacities of development – i.e. consciousness development and spiritual growth-, but only on public education to influence behavioural change, whereas interior human capacities for the development of the “Self” are neglected.

In spite of these limitations, social pioneers and a new consciousness through values change are important aspects the WBGU report touches upon. Using the example of sustainable urbanization, the authors sketch how change takes place over a long time distinguishing conceptually between an innovation and production cycle and the various functions change agents can assume in these processes (WBGU, 2011, pp. 252-54; see Figure 1).

While the authors mention the role of “strategic consumers” and point out the potentials of change agents, “intentional communities” remain unexplored yet could be a source for further and more radical inspiration (Christian, 2003; Dierschke et al., 2006). The role of these could be spearheading new lifestyles, but too often they are viewed as social utopias even though in fact some of their ideas and practices are gradually entering wider society. Being a member of a community that consciously makes a decision in changing lifestyles encourages each individual member in actually living accordingly. This feeling of social support can be crucial to sustain decisions in living differently, since an obstacle for social pioneers is usually a permanent struggle with the conventional ways of living pursued by the majority.

In Figure 1, the change agents in the area of “urban development” are depicted. They can be categorized into innovation and production cycles. The innovation cycle includes highlighters of issues, catalysts, facilitators, mediators, synthesizers, and institutionalizers. The production cycle includes inventors, investors, entrepreneurs, developers, and informed consumers.

Therefore, I would argue, intentional communities may serve as useful “real life” examples and not utopias- demonstrating fundamental transformative processes at both the personal as well as eventually reaching out to the collective socio-cultural level. Related to an “intentional” lifestyle, terms like postmaterialistic and postsecular (coined by Habermas) point towards an emerging new vocabulary signifying this shift in values and consciousness in Western societies.
Unfortunately, in many parts of the so-called emerging regions of the world we witness the exact opposite development as their development model relies heavily on carbon intensive path-dependencies - imitating the industrialized world - and hence is counterproductive in the sense that it carries elements destructive for a meaningful sustainable lifestyle.\footnote{In India for instance, many spheres of life are affected by such kind of cultural ‘un-learning’, as the health sector illustrates: based on anecdotal knowledge/observation of the author, it appears that within the urban middle-class there is a widespread, almost blind belief in allopathic medicine and often disregard of Ayurvedic treatment methods, while in many ‘Western’ countries a shift towards a ‘complementary health perspective’ that integrates better the approaches of various health traditions (Chinese, Naturehealing, Ayurveda, allopathic, etc.) becomes more accepted (and is even included partly in the standard health insurance cover).} For example, non-materialistic values and approach to life has been very strong in India for centuries if not millenia. Since the beginning of the politics of economic liberalisation in the early 1990s a considerable change due to economic growth gradually de-values formerly widespread virtues of frugality, leading a simple life and following a vegetarian diet. Even deeply rooted Hindu-Jain-Buddhist ethics of non-violence resulting often in a strict vegetarian diet are increasingly undermined by this spreading affluence with consequences for the global climate. Notes the report a known fact:

Apart from population growth, the most dynamic factor affecting land use, due to the huge differences in the emissions intensity of different foods, are changing eating habits. In industrialized countries, and increasingly, also in the high-income social classes of the newly industrialising and developing countries, the consumption of animal products, whose production involves significantly higher greenhouse gas emissions than purely plant-based agricultural commodities, is on the increase. (WBGU, 2011, p. 303)

Especially India - a country with one of the historically longest continuous and unbroken philosophical, religious and intellectual cultural traditions in the world-, one would reckon, does have the thought capacity to create its very own vision of development. Instead her leaders insist largely on the idea of catching up with the “developed” world as frequently argued during international negotiations on climate change, thus committing the same failures of modernity while at the same time submitting the country and its people unnecessarily to an inferior position rather than taking a bold lead by leapfrogging straight away to a low-carbon society\footnote{That a move in such a direction is not too farfetched has been demonstrated by the IT revolution in India which stands in a stark contrast to the abysmal poverty and human development indicators. Von Weizsäcker et al. (2009) discuss this option of low-carbon development as ‘tunneling through’ in their book ‘Factor Five’ in greater detail.} (by consciously retaining those values which support more sustainable lifestyles). The spiritual township Auroville in India provides a formidable even though exclusive example of such an intentional, eco-spiritual community that can stimulate a rethinking of currently prevalent urban planning approaches (Acharya, 2012).

What we need eventually is people being inspired by a vision, a way of living, an ethical notion of life, which can be nurtured. It is already happening with many young urban dwellers across Germany and in many other countries who demonstrate a strong commitment to changing their lives, many of them also being influenced by Eastern spirituality or other, similar practices of self-inquiry, self-reflection and development. Hitherto there has practically been done no
research on their role as social pioneers and the transformative force these individuals (and groups) may exert on urban society at large, even though they frequently make important decisions such as reducing their meat consumption or turning vegetarian/vegan altogether, shift from being car owners to using multiple mobility options, etcetera. Such steps are often only possible through a steady personal development and character building exercises – meditation, contemplation, yoga, self-reflexive trainings that develop a critical perspective not only on industrial food and its health implications but also ethical notion of the means of production. For example, during the past few years we witness a steady increase of critical TV documentaries and debates about conventional meat production and agriculture, food scandals, global textile production and climate change in Germany. But honestly, how many of us translate this information directly into their life praxis? This personal transformation needs a strong personality with convictions, a capacity that can be trained but is usually not part of our conventional, formal education. In this regard Jennifer Gidley’s (2009) work on postformal pedagogies could be instructive probably even for urban community development and social work, including planning education.

Till date the urban planning professions and decision-makers have not found appropriate ways as to how to provide windows of opportunities that promote existing pro-active change agents or connect with phenomena like intentional communities and lifestyle transforming consciousness development. On the contrary, skepticism and suspicion from both sides frequently prevent interaction (Wilmsen, 2011, 2012). There is certainly a need for more research and open-minded practice as the WBGU points out: “It must be clarified what low-carbon city cultures and lifestyles might look like” (2011, p. 336). To this statement one may add “in different socio-cultural contexts” and a global process of cross-culturally learning from each other. Social pioneers and especially (urban) intentional communities might provide ideas to begin with. Since cities are usually considered places of innovation and creativity both in technological but also social and cultural terms, it is of crucial importance whether and how the urban development professions and disciplines are prepared to take into account and support these forces, especially in bringing to the fore the interior dimensions of socio-cultural transformation for sustainable urban development, an aspect I shall discuss now in the next section.

Urban Planning and Development: Moving from Inter- to Transdisciplinarity

The WBGU’s focus on values and lifestyles in policy-making for climate change calls for a transformation of related professional fields and their praxis. Thus the previous discussion stimulates and encourages a profound review of current urban development practice, theory, policy making and training including a critical reflection on planning concepts, methods, and instruments. As a consequence of their assessment, the report’s authors carve out “Ten Measure Bundles with Major Strategic Leverage” including “Bundle 6: Steering the World’s Rapid Urbanisation towards Sustainability”, which is considered as “an extremely effective lever that should be as high up as possible on the international political agenda.” Given this significance, urban planners need to immediately review what implications this statement and the perspective brought forward in this report has in stock for planning practice. What are, for instance, the constraints and limitations of contemporary (post)modernist planning? To what extent are we prepared to incorporate the ideas and requirements of the great transformation?
One of the most stimulating areas of the report is its discussion on transdisciplinarity as a central concept for the implementation of and research for transformation, an area that builds on the increasingly recognized convergence of knowledge areas and global interconnectedness. Furthermore, the concept of transdisciplinarity also opens the door to link the WBGU with the ideas of integral approaches. Therefore this debate about transdisciplinarity should be of particular interest for the planning profession and education with its strong interdisciplinary orientation, but where transdisciplinarity can be viewed as complementary to interdisciplinarity.

The WBGU’s concept of transdisciplinarity focuses mainly on the aspect of including and involving social actors and stakeholders in identifying the research questions and conducting research:

Transdisciplinarity encompasses a range of different aspects. Firstly, it means increasing the social relevance of research questions through the involvement of stakeholders in setting research goals. Secondly, it also applies to the involvement of stakeholders in the actual research process, i.e., the combination of scientific and practical knowledge (for example local, traditional or indigenous knowledge). (WBGU, 2011, p. 323)

With this twofold notion of transdisciplinarity the link to social transformation is established. According to the WBGU’s approach, for transdisciplinarity to be relevant in terms of inducing social transformation, the research needs to become part and being linked to society – it must be socially relevant - and simultaneously incorporate, acknowledge and honour local and indigenous ways of knowing. Building on their framework of transdisciplinarity as a methodology, the authors then present the interlinked Four Transformative Pillars of the Knowledge Society. As illustrated in Figure 2 and outlined in Table 1, these pillars consist of four mutually interdependent quadrants. They distinguish “transformation research” (Tr) as a form of research that studies processes of transformation from “transformative research” (tR), whose aim is to induce and support transformation processes “including diffusion processes in economy and society, and opportunities for their acceleration, and demands, at least in part, systemic perspectives and inter- as well as transdisciplinary procedure methods, including stakeholder participation” (WBGU, 2011, pp. 351-52). Consequently, education is considered as a requisite component for transformation to succeed. In a similar vein, education is divided in “transformation education” (Te) that critically reflects on the requisite basic requirements, such as a thorough understanding of the pressure to act and a global sense of responsibility” and also “communicates information on the environmental problems that necessitate the transformation” (WBGU, 2011, p. 352), whereas “transformative education” (tE) comprises the practical dimension of actual values and behavior change. This final step from awareness to action, which is crucial to “implement” and manifest the
transformation, is given not much room in the discussion of the WBGU, even though the authors are aware of the difficulties:

Knowledge appropriation is therefore the first precondition for transformation-supporting actions, it is, however, certainly not enough. For this reason, a quite justifiably recurring theme in the debate on sustainable development education is that education must not just be the communication of purely cognitive knowledge, but must also encompass, on the one hand, practical aspects which can be applied to actions and, on the other hand, competence building to enable those learning to reflect on their actions, and empowering them to shape their future. (de Haan, 2003; Rauchhaupt, 2005; WBGU, 2011, p. 354)

While the authors’ of the WBGU report see the solution in the importance of participation in the research process and in activities such as a voluntary social/environmental year for young people, transformative practices of self-reflection and spiritual growth as practised in many wisdom traditions could be seen at least as a strong additional force that can aid in closing this gap by responding to the high demands of collective social transformation.

Table 1: Four Transformative Pillars of the Knowledge Society

<table>
<thead>
<tr>
<th>Transformation research (Tr)</th>
<th>Transformation education (Te)</th>
</tr>
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<tbody>
<tr>
<td>Transformation research is aimed at understanding transformation</td>
<td>- makes the findings of transformation research available to society</td>
</tr>
<tr>
<td>processes better, its subject are therefore transformation</td>
<td>- promotes systemic thinking, and generates a systemic understanding of different options for action</td>
</tr>
<tr>
<td>processes as such. (p. 322)</td>
<td>- communicates information on the environmental problems that necessitate the transformation, and their scientific exploration.</td>
</tr>
<tr>
<td></td>
<td>- it generates goals, values and visions to guide the actions of individuals towards the necessary direction.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Te</strong> should also have the goal of inspiring social participation and political action, as both are preconditions for a democratically legitimized transformation. (p. 352)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transformative research (tR)</th>
<th>Transformative education (tE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformative research supports transformation processes in</td>
<td>- generates an understanding of different options for action and solution approaches.</td>
</tr>
<tr>
<td>practical terms through the development of solutions and technical</td>
<td>- encouraging informed low-carbon mobility behaviour, sustainability-conscious eating habits, or an awareness of crossgenerational responsibilities.</td>
</tr>
<tr>
<td>as well as social innovations, including economic and social</td>
<td>- Related educational content would be innovations that are likely to have transformative impact, or which have already had one. (p. 352)</td>
</tr>
<tr>
<td>diffusion processes and the possibility of their acceleration,</td>
<td></td>
</tr>
<tr>
<td>and demands, at least in part, a systemic perspective and inter-</td>
<td></td>
</tr>
<tr>
<td>and cross-disciplinary methods, including stakeholder participation</td>
<td></td>
</tr>
<tr>
<td>(p. 322)</td>
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</table>

Note: Source: WBGU 2011.
Returning to transdisciplinarity, the notion promoted in the report appears to be very similar to the concept of ‘action research’ or action planning which is rooted in a similar philosophy of knowledge for action and generated through the interaction with people concerned and other stakeholders. Action research also challenges the conventional way of knowledge-making and aims at creating a shift in the balance of power in favour of poor and marginalised groups in society. Reason and Bradbury (2001), for instance, point out the participatory dimension in co-creating knowledge mutually between the researchers and the people to generate “practical knowing” through action and reflection, theory and practice. Action research as a worldview thus encompasses a strong element to change or transform existing social realities. Indeed it is rooted in the same recognition of an emergent worldview as outlined above which “has been described as systemic, holistic, relational, feminine, experiential […]” (Reason and Bradbury, 2001, p. 6). While in this sense participatory research connects well with the WBGU’s concept of transdisciplinarity, it is also shows that the WBGU is not out of step with existing research designs or planning approaches. However, for transdisciplinarity to be more comprehensive, meaningful and to be a genuine, novel departure it must be a quite radical.

Insightful, additional meaning can be found in the radical treatment of transdisciplinarity by Nicolescu (2002) who explains “As the prefix trans indicates, transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all discipline. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge” (Nicolescu, 2002, p. 44). According to him transdisciplinarity transgresses the duality of opposing binary pairs such as subject/object, subjectivity/objectivity, matter/consciousness, nature/divine, simplicity/complexity, reductionism/holism, diversity/unity (Nicolescu, 2002, p. 56). Crucially, transdisciplinarity seeks to break down traditional disciplinary boundaries and organise “knowledge around complex heterogeneous domains”. The prefix ‘trans’ signifies both the transgression of boundaries and the transcendence of disciplinary components. Essentially, in moving beyond disciplines, transdisciplinary research attempts to generate synergies and new types of knowledge (Riedy, 2007, p. 26). Transdisciplinarity with the goal to recreate integrated knowledge (Sommerville and Rapport, 2000) as an approach to research and practice seems to be a particularly suitable response to complex wicked problems like climate change – the reason why it has found some ground in environmental and sustainability research -, which cannot be treated by the application of fragmented disciplinary knowledge (Hoffmann-Riem, 2008).

In practice, whilst integrating knowledge is a crucial challenge it might even be inherently paradoxical because the growing number of integrative frameworks seems to trigger the need for a meta-theoretical perspective that integrates these itself, as Gidley’s work on Jean Gebser, Rudolf Steiner and Ken Wilber suggests. Naturally, if integration is concerned with unifying knowledge types, the question remains as to how multiple ontologies, epistemologies, methodologies, goals and practices of different stakeholders around a complex issue could be reconciled through transdisciplinary research and action. Unification must not be confused

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14 In contrast, multidisciplinary research brings together the work of multiple disciplines operating in a relatively self-contained and independent manner. The integration across disciplines is limited to summation of findings. Interdisciplinary research goes further, seeking to integrate disciplinary perspectives on a particular problem to provide a systemic outcome, but disciplinary boundaries are not transgressed (Riedy, 2007, p. 26).
however, with equalizing knowledges in terms of brushing out difference and diversity. On the contrary, it is the attempt to capture the best possible holistic view by recognising and relating multiple, diverse, conflictive and contradictory perspectives on a problem that concerns many. In current urban and regional planning activities - by way of various methods of participation and stakeholder consultations - the reconciliation of conflicts, balancing and weighting of diverse interests is usually a central objective during the development and policy formulation process. If such a process is well guided and intended, it is frequently through this process itself that stakeholders change, adapt and maybe even transform.\(^\text{15}\) This includes the consideration of various types of knowledge (expert, phenomenological, experiential, anecdotal, indigenous), but rarely interiority. For example, recent research in Australia where formalised planning practice meets the cognitive-mental structures of Aboriginal landscape perceptions indicates that the planning community there becomes increasingly aware of the shortcomings of their established methods and concepts feeling a need to relate to and accommodate indigenous knowledge especially paying attention to spiritual dimensions (Low Choy et al., 2010). It is for this reason that contemporary planning theory, as I will outline further below, has incorporated ideas like Habermas’ theory of communicative action.

Another dimension not considered in the WBGU report is that a transdisciplinary perspective would certainly be enriched if it was opened for active exchange of ideas across knowledge systems and cultures such as including wisdom traditions of the East.\(^\text{16}\) Such an expanded and more comprehensive view of transdisciplinarity is proposed by Nicolescu whose interpretation of transdisciplinarity implies its being transcultural, transhistorical, transpolitical, or with Wilber’s Integral Theory that seeks to integrate (acknowledge) knowledge diachronically throughout history and synchronically from ‘East’ and ‘West’, perennial philosophies and the sciences. Compared to these approaches, conventional ‘Western’ academia is primarily self-satisfied, self-contained and locked in its own history of thought rarely incorporating knowledge from other philosophical and cultural traditions, even though the epistemological learning potential would be tremendous.\(^\text{17}\) For example, the introduction of Gross National Happiness in Bhutan, which is based on Buddhist values, led to a revival or (re)discovery of this concept within international development discourse and practise. Within the climate change debate a focus on knowledge and

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\(^{15}\) Another issue concerning participatory processes that cannot discussed here in detail but is certainly relevant is inclusion or in negative terms marginalization/exclusion. A large body of literature can be found around issues of oppression, social exclusion, injustice and inequality in participatory processes (e.g. Beckmann, 1997; Cooke & Kothari, 2001; Young, 1990).

\(^{16}\) The reference to ‘indigenous knowledge’ made in the report is insufficient, as it seems to refer more to ‘local’ knowledge and tribal groups. Certainly, one would not think of the complex philosophical traditions of China or India and other countries being ‘indigenous’.

\(^{17}\) For instance, even Nobel laureate Amartya Sen takes an almost apologetic stance in his recent treatment on the idea of justice when he points out that his approach also draws from ancient Indian resources, writing “…the connection of this work with the European Enlightenment does not make the intellectual background of this book particularly ‘European’. Indeed, one of the unusual –some will probably say eccentric – features of this book compared with other writings on the theory of justice is the extensive use that I have made of ideas from non-Western societies, particularly from Indian intellectual history, but also from elsewhere. […] In confining attention almost exclusively to Western literature, the contemporary – and largely Western – pursuit of political philosophy in general and of the demands of justice in particular has been, I would argue, limited and to some extend parochial” (Sen, 2009, pp. xiii-xiv).
technology transfer from the advanced industrial countries to the developing world is usually emphasized. While the developing world shows a keen interest in receiving the latest technology, they also point out in the same breath that financial assistance is required thus reinforcing political dependence. On the other side, one may view such an approach as a new kind of imperialism or even paternalism where in fact there may be tangible advantages for mutual learning based on knowledge exchange. Hence a transdisciplinary approach needs to be receptive to a global exchange of knowledge types, including in particular the domain of interiority/spirituality (Salemink, van Harskamp & Giri, 2004; Santos, 2007). Western urban planning, being by and large a modernist rational decision-making process, has almost no room for this knowledge area. As noted, with the beginning of the 21st century, however, some planning professionals and academics have noticed a resurgence of religiosity and spirituality in public urban life (metroZones, 2011; Beaumont & Baker, 2011), and others, including myself, are working towards a “recognition of the spiritual” within the planning discipline (e.g., Anhorn, 2006; Sandercock & Senbel, 2011; Wight, 2009; Woiwode, 2012c; Woiwode & Scholz, 2012).

Overall, the previously outlined features of transdisciplinarity pose a major departure from the currently prevailing logic of modernist planning practices in many parts of the world, which are nearly without exception the legacy of the European colonial and imperialist hegemony. Modernist planning approaches are problematic in many ways (UN-Habitat, 2009, pp. 58-59), but above all they are “weak in terms of how to deal with the major issues of the 21st century: climate change, resource depletion, rapid urbanization, poverty and informality” (UN-Habitat, 2009, p. 70). Thus “a significant practical dilemma that faces planners – as well as other urban professionals and politicians – when they try to implement sustainable urban development is how to integrate the two different sets of concerns of the “green agenda” and the “brown agenda” (i.e. the natural environment and the human environment)“ (UN-Habitat, 2009, p. 114; emphasis added; see Table 2). Even though spatial planning is considered an interdisciplinary exercise, the frustration of above statement illustrates the “interdisciplinary dilemma” that the partaking disciplines are not adequately integrated, i.e. brought into a meaningful relationship. Apparently, this approach falls short of being integral for example in terms of the multi-dimensional model as developed by Wilber, nor is it transdisciplinary by Nicolescu’s criteria as previously discussed. In Wilberian terminology, it rather is a purely systemic (natural and social systems), exterior objective perspective, which is certainly valuable but insufficient. The entire vocabulary in this UN-Habitat report is one of a bio-physiological system, where a city’s metabolism defines its ecological footprint. The cultural (values and worldviews) as well as the psycho-spiritual (subjective aesthetics) dimensions that underlie the expression of this metabolism are rarely mentioned (for instance ethical considerations).
Table 2: Characteristics of the Green and Brown Agendas in the Urban Environment

<table>
<thead>
<tr>
<th>The green agenda</th>
<th>The brown agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural systems, global, regional and local, used as services by cities</td>
<td>Human systems required to make cities healthy and livable and which are part of the metabolism of the city</td>
</tr>
<tr>
<td>Ecosystems that provide green open space used by the city for biodiversity protection and recreation.</td>
<td>Waste systems to recycle and remove wastes from cities, including solid, liquid and air waste.</td>
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<tr>
<td>Water systems that cities use to tap the natural flow of water supply and waste disposal.</td>
<td>Energy systems to provide power, heating, cooling and lighting for all city functions.</td>
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<tr>
<td>Climate and air systems that provide cities with the requirements for healthy life.</td>
<td>Transport systems to enable mobility in the city, including the fuel.</td>
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<tr>
<td>Other ecological services, including agricultural and forestry systems providing food and fibre for cities.</td>
<td>Building and materials systems that provide the physical basis of life in cities.</td>
</tr>
</tbody>
</table>

Note: Source: UN-Habitat, 2009, p. 114.

As demonstrated in Table 3, even without considering climate change as a severe problem, urban development faces a wide range of issues at the global as well as the regional level. Since these are interdependent and interwoven in complex relationships and systems, hence the urgent need for a meta-theoretical, integral perspective which enables the application of a transdisciplinary perspective to urban development planning. Conventionally, in the field of urban and spatial planning, various measures are called integrated, for example “integrated neighbourhood management” or “integrated urban development”. Inherent to these types of integration is the connotation of comprehensive planning that refers to the notion of considering combined socio-economic aspects, land use planning and management, governance/stakeholder consultations, etc. For instance in terms of climate change, the city is viewed as an (open) system that integrates among others demography, economy, land use, climate impacts and greenhouse gas (GHG) emissions (e.g., Hall et al., 2010). Additionally, ‘integrative’ or ‘integrated’ means also ‘multi-sectoral’ referring to the correlation of several selected variables as in the model of Boydell et al19 (2010). These approaches are obviously not “integral” in Wilber’s terms nor do they step out and move beyond a coordinative relationship of the various disciplines involved, in practice being compartmentalized implemented by local, regional or national government departments. Instead they reflect a systemic understanding of objective reality and facts that consider reduction of CO2 emissions in terms of more greening, energy efficiency, transport, and other areas without including behavioural and consciousness, or cultural patterns. Nearly all urban climate change initiatives whether in developed or developing countries reflect this limited notion of socio-technical response to socio-technical systems (see e.g., BBSR, 2009; Martin et

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18 Exemplary sectors are: transport, open spaces & greenery, environment, economy, social infrastructure like schools or health centres, technical infrastructures like storm water drainage or sewerage systems, housing, industries, leisure facilities, disaster management, land use planning, etc.

19 This model integrates urban residential water consumption, passenger transport, and in-house energy use.
al., 2008; UN-Habitat, n/d), confirms the WBGU’s assessment of the research landscape on urban climate change in Germany:

Particularly the cultural aspects, which – as they determine innovation acceptance and diffusion and consumption behaviour – are central to the transformation success, are not sufficiently taken into account in the programmes, or not explicitly mentioned. It is therefore to be expected that although cultural aspects will impact somewhat as a consequence of international cooperation, the targeted generation of relevant data and their comparability is being neglected. (WBGU, 2011, p. 345)

<table>
<thead>
<tr>
<th>Region</th>
<th>Issues</th>
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<tbody>
<tr>
<td><strong>Global</strong></td>
<td>1. Climate change</td>
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<td></td>
<td>2. Global economic crisis</td>
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<td></td>
<td>3. Energy supply and impacts</td>
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<td>4. Food security</td>
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<td>5. Changing population size of towns and cities</td>
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<td>6. Income inequality</td>
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<td>7. Cultural diversity</td>
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<td><strong>Developing countries</strong></td>
<td>1. Urban informality</td>
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<td></td>
<td>2. Urban growth</td>
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<td></td>
<td>3. Income inequality and poverty</td>
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<td>4. The “youth bulge”</td>
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<td></td>
<td>5. The peri-urban areas</td>
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<td></td>
<td>6. Linking the green and brown agendas</td>
</tr>
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<td></td>
<td>7. Institutional and professional capacity</td>
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<tr>
<td><strong>Transitional countries</strong></td>
<td>1. Slow population growth and declining cities</td>
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<tr>
<td></td>
<td>2. Urban sprawl, fragmentation and inequality</td>
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<td></td>
<td>3. Environmental issues</td>
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<td></td>
<td>4. Decentralization of government and resource constraints</td>
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<td></td>
<td>5. The changing legislative framework for planning</td>
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<tr>
<td><strong>Developed countries</strong></td>
<td>1. Socio-spatial inequalities and urban fragmentation</td>
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<tr>
<td></td>
<td>2. Environmental issues</td>
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<td></td>
<td>3. Population decline and shrinking cities</td>
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<tr>
<td></td>
<td>4. Integrating sectoral policy within governments</td>
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</tbody>
</table>

Note: Compiled from UN-Habitat, 2009, pp. 201-205)

**Conclusion: How could an Integral, Transdisciplinary Response to Urban Climate Change Look Like?**

This section aims to move beyond mere abstract and theoretical criticism of an otherwise important policy paper to stimulate a discussion about a research agenda on urban climate change response that is inspired and framed by an integral, transdisciplinary, meta-theoretical approach.
It is therefore not an exhaustive, nor a conclusive or comprehensive treatment of the subject matter, but work in progress directly relating to a series of other articles that I have written on this topic (Woiwode, 2012a, 2012b, 2012c). I subsequently cover briefly two issues, first in providing a glimpse of contemporary planning theories to indicate the potential for creating a planning (meta-)theory with an integrative, transdisciplinary face, and secondly by pinpointing to some issues relevant for a research agenda.

**Meta-theory, Transdisciplinarity, and Contemporary (Urban) Planning Theory**

No one has hitherto attempted to introduce a meta-theoretical, integral approach to urban planning theory. Currently the application of complexity theory is one of the latest answers of planning theorists and practitioners to the challenges of the 21st century (Chettiparamb, 2008), which are identified as uncertainty, insurgence, complexity and wildness (Healey & Hillier, 2008, p. 405). In its effort, this stream of planning theory follows the same line of the “new physics” and “new life sciences” in their critique of science and the Cartesian worldview by attempting to explicitly reconnect science, philosophy and humanity. It is further noted that there is an “incongruence between the actual urban “reality” which is complex and non-linear and the application of linear rationalist planning methods” (McAdams, 2008, p. 2). If we look further back we discover that in the 1990s planning theory was marked by the postmodern “communicative turn” known eventually as collaborative planning. Drawing from other disciplines like social anthropology (particularly Clifford Geertz) and critical theory (the Frankfurt School as represented by Jürgen Habermas) this stream incorporates more explicitly the cultural, creative dimensions in planning and policy making. On the surface it seems to come close to an integral framework because the field of planning theory expanded its scope into the intersubjective and, partially, subjective dimensions (Forester, 1989; Healey, 1992, 1996, 1997; Innes, 1998; Sager, 1998). Planning was now given an interpretive phenomenological perspective thus challenging the founding epistemologies of planning theory – instrumental rationality of modernist planning. Modernist planning, characterized by knowledge constructed predominantly through techno-scientific analysis and deductive logic, is the domain of experts, excluding other types of knowledge and value systems such as experiential, local, intuitive, tacit, expressive “knowledges” which draw on moral and aesthetic realms rather than on scientific logic and empiricism.

This notwithstanding, these more recent postmodern efforts still stop short of a more genuine meta-theoretical perspective, for Habermasian theory at that stage remained a secular undertaking without giving room to the religious or spiritual realm of subjective interiority, whilst the notion of complex systems is still essentially confined to an objective perspective on the world and therefore largely incapable to capture the subjective dimensions of reality. The blind spot of planning practice and theory, the subjective, psycho-spiritual, emotional dimensions, is hardly touched upon. One exception in this regard is Sandercock (2008) who fosters “a therapeutic approach” to planning that explicitly values the emotional side of human relationships like fear, anger, hope, betrayal, abandonment, loss, lack of recognition, histories of disempowerment and exclusion. Significantly, as the root of the neglect of emotions in planning

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20 It is not before the beginning of the 21st century that Habermas began to emphasise the relationship between reason and faith acknowledging the emergence of a postsecular society (see Habermas, 2001 and 2010).
she identifies the divide between reason and emotion. Indeed it is Sandercock (2006, p. 65) who drives her own point of including emotions further into the interior spheres towards the recognition of spirituality:

The work of urban, social, community, environmental, and even land-use planning is fundamentally a work of hope [...] But where does this hope come from, if not from some kind of faith? Hence I must ask myself, and my profession: are we not missing something important by not talking about this thing at the heart of planning that marks us all as at least closet utopians? The faith at the heart of planning is very simple. It’s our faith in humanity, in ourselves as social beings, in the presence of the human spirit and the possibility of realizing/bringing into being the best of what it means to be human.

Sandercock laments the sterile terms planning professionals use to describe their work which would make it incomprehensible to the people. She stresses the need to talk about planning in a different way. We need to recognise that spirituality may be embodied in planning work, and if so “It would mean a different way of seeing ourselves, representing ourselves to the world, and it would necessarily lead to different ways of teaching, which we might begin to think of as ‘educating the heart’” (Sandercock, 2006, p. 66).

In summary, this tour de force through more recent planning theories demonstrates that planners and planning theory have been receptive to the postmodern paradigm of the social sciences, but an attempt to transcend these towards generating a transdisciplinary, integral framework which reflects contemporary integral thinking with its spiritual elements emphasising potentials of personal psycho-spiritual growth, the application of transformative practices like contemplation or meditation, and its emotional empathic aspect of developing all-embracing love and compassion is not in sight as yet.

**Brief Outline of an Integral, Transdisciplinary Research agenda Focusing on Climate Change, Urban Planning and Development**

My own as well as the WBGU’s analysis of the present predominant perspectives on climate change demonstrate an inadequate overemphasis on the technical, scientific, objective approach to climate change by a simultaneous neglect of subjective and inter-subjective dimensions. Similarly turns out the evaluation of the two related fields of study, urbanization and development. Social, human development in urbanization studies and in urban development usually does not establish the link between existential (spiritual) and other interior dimensions of human life. On the other hand, transdisciplinary, meta-theoretical, integral approaches as understood in this essay acknowledge, appreciate and work with diverse epistemologies and ontologies. Hence an integral meta-theory seems to offer a way to address and transcend several of the limitations of mainstream approaches in the fields of climate change and urban development. Till date integral thinking offers much in theory, but its practical applications are only gradually beginning to be explored. Obviously part of the challenge lies in translating theory into practice. One obstacle is that professional planners who desire to apply the insights of a meta-theoretical framework such as Integral Theory in their work need to become scholar-practitioners in order to enable them to incorporate the neglected interior dimensions of emotions, spirituality and personal inner growth. As I have pointed out elsewhere:
This is about learning a new “language”, the language of introspection, of self-analysis, of looking inwardly in order to consciously act according to the notions and values of interdependence and connectivity, love and compassion. It involves practises planners are usually not so familiar with and have normally not received any training in, i.e., addressing the interiority of our existence, the aesthetics of being, the art of living. […] Likewise, urban planning practitioners need to build their own consciousness and personal transformative practises (prayer, contemplation, meditation, psychotherapy, introspection) in order to be capacitaded to work with and address interior dimensions of development when working with other people. In our planning education, we have learned to study objective facts, say, of the built environment; over time, we have also recognised the inter-subjective dimensions of participation and the cultural realm of meaning making, but we are not trained in the subjective language of human interiority. Emotions, feelings, and spirituality are not (yet) part of a standard planning curriculum. (Woiwode, 2012b, p. 56)

Understanding interiority of the self can only be attained fully through self-experience as emphasized by Anhorn (2006) in the field of urban planning and Hochachka (2005) for international community development. Practitioners need to be educated and trained to enable them applying theory into practice:

As practitioners begin to recognize this integration is critical, a question that many of us have is: how do we work with interiority, and more specifically interior development? Just as we are becoming more and more aware of the need to engage interiority, we are also becoming aware that we may not have the tools or the training to do so. Many have been trained in scientific and/or quantitative actions, and process-oriented, participatory methodologies, but fewer have the tools for engaging the interior and psychological aspects of human reality. (Hochachka, 2006, p. 12)
The argument and underpinning assumptions advanced here are visually condensed in the diagram (Figure 3). Accordingly, the core problem is posed by the interdependently occurring and mutually reinforcing processes of urbanization, development and climate change. This triangle may be called “the development conundrum”. In this understanding urbanization and the notion of development are both causes and drivers of modernization, they are, just like industrialization and rational thought, part of what is commonly understood as “modernity”. As highlighted in this paper, this process resulted in a rigid separation of science and spirituality/religion, with the former rising to become the sole perspective of interpreting reality, the universe and everything else, and the latter being exiled in the name of secularity from academic discourse and the practice of life. In response to this development of epistemologies, the critique of science (actually on “scientism”) and modernity coupled with advances in quantum physics resulted in “new” scientific insights (e.g., complexity and chaos theory), endeavours in recognizing the “Tao of Physics” by combining Western knowledge and Eastern wisdom which subsequently gave rise in the past 30 years to contemporary integral thinking that attempts to reconcile the schism of matter and mind. Eventually, these new scientific and philosophical insights - so it is assumed and expected and hoped - will trigger a new understanding of the world, a new cosmology. It is at this point where the confluence of spirituality and the spectrum of development are situated, already working on re-conceptualising development as a more holistic, i.e. integral, notion of human development. In this respect I (Woiwode, 2012) have suggested that we may view the human condition as a composition of at least three different types of human nature relevant in each lived situation, that is, humans are (a) “zoon politikon”: a political, socio-cultural being, (b) “homo economicus”: an economic, rationally acting being, and (c) “homo spiritualis”: an emotional, psycho-spiritual being. Each of these three dimensions can be related to the developmental capacities represented in the notion of “capital”: (a) social, cultural/symbolic capital as found in Putnam’s and Bourdieu’s writings, (b) physical/financial capital as in classic economic texts, and (c) religious/spiritual capital as recently suggested by Baker (2009) but prominent for much longer in anthropological studies (e.g., Woiwode, 2001). Finally, the feedback of this reformulation of development as informed by a spiritual and integral worldview will be positive on the triangle of the “development conundrum”.

On this basis, with special reference to the context of addressing urban climate change we may consider the following thematic focus areas and major research questions:

1. Urban Governance and Communication: Indispensable is the inherent aspect of communication when Integral Theory is applied to resolving real world issues such as climate change, environmental problems, urban development, and development in general. At this point I can draw on earlier research I carried out in the area of urban risk communication (Woiwode, 2007, 2008, 2009). A research focus on urban governance approaches seems a logical conclusion: communication of diverse perspectives, rationalities, types of knowledge (includes public participation); initial ideas on integral governance are brought forward by McIntosh (2002, pp. 311-23; even though he focuses

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21 For instance, Esbjörn-Hargens & Zimmerman (2009, pp. 2-4) provide a case study on negotiating a solution to protect a rain forest. They write: “As we will see, integral capacities refer in part to the ability to cease exclusive identification with a particular position, such as modern (industrial logger) or postmodern (green environmentalist), and start sympathizing with multiple perspectives and realities.”
on global governance) and Hamilton (2008, pp. 173-77). Moreover, good urban governance is generally viewed as a key to urban climate change resilience (Tanner et al., 2008), but apparently current governance structures and the institutional culture of most cities are inadequate to address the challenge of climate change adaptation and mitigation (Revi, 2008). The resulting question would be: What are the implications of an integral approach for urban governance to address climate change?

2. Poverty, Exclusion and Social Justice: Another focus within the urbanization and climate change link is their relationship to some of the most pressing issues of development such as poverty, inclusion/exclusion, and social/environmental justice; this means in the urban environment a focus on slum and squatter settlements, pavement dwellers and similarly marginalized urban populations. The resulting question would be: How do poor/marginalised urban dwellers relate to climate change risks in the context of their own development prospects?

3. Several holarchical layers in the urban context of tackling climate change seem appropriate and relevant for further research: links between neighbourhood/community, borough, municipality, NGOs, and national policy level need to be studied. The resulting questions would be: What are the epistemological and ontological standpoints of urban stakeholders? (Which perspectives on climate change and development are prevalent among these groups? How are they created and why are they created in their specific ways? How does their knowledge connect to their values and worldviews?)

4. The role of planning professionals and local politicians (their “integral” self-development) in the process of climate change adaptation/resilience/mitigation and consequences for urban management and planning capacities. The resulting questions would be: Of what kind are the planning/decision making cultures in the country/ies under study? Which are the consequences of a meta-theoretical, integral notion of climate change, urbanization and development for planning education and capacity building?

Other, more profound, generic and cross-cutting research questions are the following.

1. How does a transdisciplinary, integral approach relate to the fields of urban development, climate change and (international) development in theoretical and methodological terms? And how do they relate to each other within such a framework?

2. What is the relationship between an urbanized humankind - the city dwellers - to nature and the cosmos? In which way can an integral perspective (re)define environmental ethics through consciousness transformation and is it feasible to include this in urban development practice?

3. What is spirituality? And what is the role of spirituality/ the interior dimension for urban societies and in urban development? How could it be integrated with urban development practice and how do the urban stakeholders relate to it?

4. Following question c): Climate change inevitably evokes questions about “the urban life”, well-being and quality of life, the notions and relation of materialistic versus immaterial development dimensions? How does the developmental perspective of integral theories (re-)define consumption, the use of resources, poverty and quality of life?

In conclusion, it is this fact of highlighting the dimension of values and worldviews as central for a social transformation in the climate change discourse that renders the WBGU report such a significant policy paper. For in doing so it points towards a more profound effort in addressing
climate change by simultaneously drawing attention to pivotal disciplines such as urban planning. However, its scope does not permit an in-depth treatment as to how some of the particular areas such as urban development can be reformed and adjusted to these contemporary demands. Planners, academics and related professionals are thus faced with the task ahead of identifying how transdisciplinary and integral perspectives may become part of planning theory and above all planning practice. Even though this is still in an embryonic stage and remains an enormous challenge – especially in terms of upscaling and promoting such an approach at international events like the United Nations Conference on Sustainable Development Rio+20 and in multinational organizations such as the UN -, initial steps have been taken by individual scholars, practitioners and international initiatives like the Earth Charter Cities Manifesto towards understanding the city in a more integral fashion as indicated in the quote at the beginning. In this light, the research agenda as outlined in the final section of this paper is an invitation to build on and to inspire new ideas on this subject.

Acknowledgement

I want to thank Markus Molz who encouraged me to elaborate further on this topic, and for his comments and critical review on an earlier version of this article which helped me to clarify and improve its content considerably.

References


Transdisciplinary Consumption

Sue L.T. McGregor¹

Abstract: For the past 100 years, research about consumption has stemmed from two main disciplines: (a) consumer studies/consumer sciences (including consumer policy and education) (a spin off from home economics) and (b) consumer behaviour research (a spin off from marketing). This paper focuses on these two disciplines because the results of their respective research are used to shape consumer policy and consumer protection legislation and regulations, marketplace competition policy and regulations, consumer product and service information, media coverage of consumer issues, consumer education curricula and pedagogy, and insights into an evolving consumer culture. This paper asks consumer studies/sciences and consumer behaviour scholars to embrace the transdisciplinary methodology in addition to the traditional empirical, interpretive and critical methodologies. It provides an overview of the four axioms of transdisciplinary methodology with examples to illustrate how consumer-related research would change to address the complex reality of 21st century consumption.

Keywords: Consumption, consumer behaviour, consumer studies, home economics, integral, sustainability transdisciplinary methodology.

Introduction

We would need three planet earths to sustain Canada’s level of consumption - just one country (World Wildlife Fund, 2008), five planets if we include the United States. Consumption of this magnitude and complexity can no longer be addressed by individual disciplines, including consumer studies and consumer behaviour, whose focus is consumer behaviour. We are way past due for considering a transdisciplinary (TD) perspective for consumption. Not only do we need to work within higher education and across disciplinary borders to deal with the impact of such unsustainable consumer behaviour, we also need to cross the borders between higher education and civil society. Standing outside of consumption behaviour and examining it from an objective, distanced, disciplined stance (pun intended) totally negates the complexity and chaotic nature of relationships inherent in 21st century consumption.

Innocuous, seemingly harmless, consumer behaviour (e.g., having a coffee with a friend) is laden with layers of negative, intergenerational and planetary fallout, never before encountered by humanity. A simple coffee with a friend manifests itself in international politics, transcultural dynamics, global and local economics and development, human security and freedom.

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unsustainable development, human oppression and exploitation, even spiritual unwellness and lack of inner peace along with societal violence and conflict. The 21st global consumer culture has market values at its core. People exist to serve the market instead of the market serving society. The interests of the consumer society are in deep conflict with the interests of the commons, justice, peace and the human condition (McGregor, 2007b; McGregor, 2010b).

Furthermore, reflecting geo-politics, Majority World citizens (often called the Southern World or developing countries) experience the brunt of the fallout from the global consumer infrastructure, and their interests are in conflict with those of Northern, more affluent consumers. While Majority World citizens experience marginalization, exploitation, oppression and debilitating, uneven wealth and income distribution, Northern consumers tend to experience inner conflict and lack of peace as a result of living in a consumer society (not to mention excessive debt and bankruptcy).

Northern consumers consume more and more as a way to cope with the fear and anger that emanates from the angst of living in a consumer society. They grapple with alienation, dissatisfaction, disenchantment, misplaced self-identity, and false relationships (McGregor, 2010b). As push back from the inequity, Majority World citizens are increasingly engaged in the politically-intense globalization from the bottom-up movement. Wars and conflict are emerging as a result of citizen and political resistance to Northern hegemony. Between the two, North and South, even East and West, the resultant problems are too complex to be dealt with using conventional disciplinary approaches. A way is needed that can “move catalytically towards an emancipatory practice liberating one part of humanity from over-and ill consumption and the other part from structural poverty and social and political exclusion” (Markus Molz, personal communication, February 7, 2010).

Towards that end, this paper asks consumer studies/sciences and consumer behaviour higher education scholars (in particular) to embrace the transdisciplinary methodology as a legitimate intervention. They will be expected to shift research paradigms enabling them to see the merit of respecting a fourth research methodology, transdisciplinarity, in addition to the traditional empirical, interpretive and critical methodologies (McGregor, 2007a; McGregor & Murnane, 2010). They will be expected to cross disciplinary boundaries with the intent to change the borders (Fairclough, 2005) and then integrate theories and policies and practices emanating from this disciplinary integration. And, they are expected to integrate many realms of reality as they work with other disciplines and members of civil society in intellectual border-work (Horlick-Jones & Sime, 2004) to address the context of 21st century consumption.

**Historical Embeddedness of Conventional Consumer Scholarship**

For the past 100 years, research about consumption has stemmed from two main disciplines: (a) consumer studies/sciences (including consumer policy and education) (a spin off from home economics) and (b) consumer behaviour research (a spin off from marketing). This paper focuses on these two disciplines because the results of their respective research are used to shape consumer policy and consumer protection legislation and regulations, marketplace competition policy and regulations, consumer product and service information, media coverage of consumer issues, consumer education curricula and pedagogy, and insights into an evolving consumer
As noted earlier, actions of consumers are negatively impacting the future of humanity, intimating that any scholarship that provides insights into this phenomenon merits attention and new directions. Intellectual scholarship devoted to the study of consumers should be valued because consumers spend upwards of 70% of the Gross Domestic Product (GDP) in most developed economies, compared to business (11%) and government (19%) (e.g., U. S. Department of Commerce, 2009). Such market power warrants academic attention especially since that power seems to be abused and misused to the detriment of other citizens, other species and the planet (McGregor, 2010b).

Each of these two disciplines draws on the human, social and natural sciences for intellectual rigour and diversity, but usually from a multi-disciplinary perspective. They draw from economics, political studies, sociology, psychology, history, anthropology, and administrative/management sciences. Only those consumer scholars trained in home economics can claim an interdisciplinary approach, and even then interdisciplinarity brings disciplines together (either in person or theoretically) with no commitment to change the boundaries and relations among them (Fairclough, 2005). Each of these two disciplines is now defined and positioned as either multi-or interdisciplinary.

Consumer Studies and Consumer Sciences

Consumer studies and consumer sciences are concerned about the interests and welfare of consumers (Kroll & Hunt, 1980). Welfare refers to the fortunes of people or to their health, happiness and basic physical and material well-being. Interest refers to an advantage or a benefit. It is Latin interesse for “to differ and to be important.” Hence, consumer interest or welfare could be defined as actions taken by governments, businesses or consumers themselves that provide an advantage or benefit which enhances their economic fortunes or other aspects of their well-being. It is in the interests of consumers that their rights as market players are ensured so their fortune and well-being are not harmed or diminished. These rights are now understood to be information, education, safety, choice, health, redress, a political voice, and environmental integrity as well as basic human needs (McGregor, 2010a). Four major consumer activities are of interest in the field of consumer studies and sciences: choice making and decision making, financial management, buyership, and citizenship (Bannister & Monsma, 1982; Kroll & Hunt, 1980).

In more detail, consumer studies and sciences focuses on protecting the consumers’ interest vis-à-vis business activities, often through consumer protection policy, corporate regulation policy, and consumer information and education. In addition to emphasizing inter-economic unit interactions (with businesses and governments to procure goods and services), this discipline also focuses on intra-family and consumer economics and resource management with the intention of ensuring economic efficiency and, more recently, ecological effectiveness and sustainability. The consumer interest includes consumers’ interactions with entities other than products and services, including consumer organizations, labour organizations, and government agencies and political systems (Kroll & Hunt, 1980). The consumer education component of this field strives for consumer empowerment and efficacy, recently augmented with a global citizenship perspective (McGregor, 2007a, 2010c; Thoresen, 2005).
Consumer studies and sciences have always been considered an interdisciplinary discipline, especially when practiced by home economists, but also when economists and marketers consider the field to be their discipline of vocation (versus a discipline of orientation where they received their formal training) (Kroll & Hunt, 1980). Recently, several scholars advocated that consumer studies and sciences should shift towards transdisciplinarity (Liokumovića, 2008 McGregor, 2007a, 2009b; Pålshaugen, 2008). Thoresen (2008) asserts that education for consumer citizenship demands transdisciplinary teaching.

**Consumer Behaviour**

The discipline of consumer behaviour has its roots firmly entrenched in the discipline of marketing, and any new foci is heavily dependent on the changing traditions of the marketing discipline (MacInnis & Folkes, 2010; Sheth, 1985). MacInnis and Folkes define the scope of the field as “the study of people operating in a consumer role involving acquisition, consumption, and disposition of marketplace products, services, and experiences” (p. 900). There is an ongoing discussion about whether consumer behaviour is an independent discipline or a sub-discipline of marketing. MacInnis & Folkes (2010) cite commentaries from the field that believe the field has gained sufficient stature such that insights into consumer behaviour can be valued for their own sake, and are not beholden to marketing for legitimacy. Regardless, consumer behaviour involves intellectual scholarship devoted to the study of consumers with a focus on helping businesses and policy makers better understand consumer behaviour so that it can be understood and influenced using advertising, branding, market segmentation, opinion leadership, persuasion, and behaviour modification, with attendant consumer protection and information.

Earlier versions of consumer behaviour research drew on the behavioural sciences of psychology and group behaviour of social sciences. While psychology has a sub-discipline called consumer psychology, sociology has not established consumer behaviour as a formal sub-discipline (MacInnis & Folkes, 2010). In the early eighties, consumer behaviour began to shift towards organizational and business sciences in order to cope with changing environments due to technology, regulation and global competition. In the mid-80s, consumer behaviour scholars began to focus on global consumer behaviour research (cross-cultural and international consumer behaviour) (Sheth, 1985). Some consumer research scholars have recently turned their attention toward consumers’ perceptions of corporate social responsibility and its impact on consumer loyalty and attendant consumer behaviour (McGregor, 2008b). The field also now embraces social marketing, political marketing and darker issues such as gambling and compulsive shopping. During all of these changes, it has remained multidisciplinary in nature, not interdisciplinary (MacInnis & Folkes) and certainly not transdisciplinary, although recent attempts to frame the field as transformative have potential (Mick, Pettigrew, Pechmann & Ozanne, 2011).

**The Consuming World Has Changed**

Since the inception of consumer studies and consumer behaviour, the world has changed. A global consumer culture has evolved predicated on materialism, the consumerism ideology, the neo-liberal market ideology, the conservative political ideology, and corporate led, top-down economic globalization (McGregor, 2008c). The result is further entrenchment of haves and have
McGregor: Transdisciplinary Consumption

nots, a situation now deeply exacerbated by the innocuous actions of consumption (McGregor, 2010b). We now live in a world where less than 20% of the world’s population controls 85% of the world’s resources and holds nearly 100% of the world’s wealth. The economically affluent Northern consumer is engaging in consumer behaviour that is having a profoundly negative impact on Majority World citizens. And they are doing so from a rights position rather than shared responsibilities. In addition to consumer choices leading to the oppression, exploitation and harm of fellow human beings who make most of the goods and services consumed in the world, these choices have completely compromised the ecological integrity of Planet Earth and thousands of other species.

We have consumed, produced and de-legislated ourselves into a human condition and ecological polycrisis (van Breda, 2008). Morin (1999a) uses this term to describe a situation where there is no one, single big problem; rather, there is a series of overlapping, interconnected problems. In a polycrisis, there are inter-retroactions between different problems, crises and threats. A retroaction is an action that influences or applies to a prior time. This situation suggests that 21st century human and planetary problems are so complex, so interconnected, that they cannot be solved from the perspective of one or two disparate disciplines anymore. Consumer studies and consumer behaviour scholars must consider turning to the transdisciplinary methodology. Consumer scholars would move beyond studying symptomatic issues of credit acquisition practices, indebtedness, financial wealth, financial literacy and income security. Consumer behaviour (marketing) scholars would move from prescriptive approaches of how to influence consumer behaviour so as to improve the bottom line through brand loyalty, consumer confidence and consumer satisfaction.

Instead, from a transdisciplinary framing, both disciplines would grapple with human and ecological problems that manifest and mask themselves as symptoms of ill thought out consumption and greedy corporate behaviour. These global, complex, emergent transdisciplinary issues include: poverty and unequal wealth distribution; uneven economic, social and human development; human freedom, security and justice; self-determination; harmonious access to and distribution of resources; power relationships; human aggression; and, prevailing world views, ideologies and paradigms (McGregor, 2009a; UNESCO, 1998). A transdisciplinary stance involves removing the boundaries among disciplines within higher education as well as between the academy and civil society, where the human condition and ecological integrity play out on a daily basis and are deeply shaped by global consumption patterns and ideologies.

A New Role for Disciplines

Wilson (1998) argues that only fluency across the disciplinary boundaries will provide a clear view of the world and what needs to be done to ameliorate humanity’s pressing problems, especially those exacerbated by consumption. As a caveat, the call for transdisciplinarity is not a replacement for disciplinary and interdisciplinary work; rather, it is to be a complement to existing academic practices (Paulino-Lima, 2010). Weislogel (2008) explains that transdisciplinary inquiry actually is dependent upon rigorous disciplinary work and the undeniable advances produced by various disciplines. However, transdisciplinarity demands more from disciplines. It strives to galvanize divergent disciplines to answer life’s fundamental
questions using transdisciplinary thinking (Paulino-Lima, 2010), in particular, issues of sustainability of the human species and the planet as influenced by a consumer culture.

Transdisciplinarity would ask university consumer studies and consumer behaviour scholars to become interdependent minded so they can value the connections among and beyond the academy, connections that are needed to solve today’s problems caused by consumption. TD scholars would know that all sectors have to work together from the outset to develop shared conceptual frameworks that integrate, extend and augment discipline-based learning (Neuhauser et al., 2007) with civil-society-based know-how and lived experiences. This scholarly work would involve bridging the gaps between three elements: (a) research and disciplines, (b) different social groups, and (c) different value sets, using integrative thinking (Pfund et al., 2006). And, when links are introduced between disciplines, as is the transdisciplinary way, the disparate disciplines gain opportunities to change their concepts, structures and aims (Jantsch, 1972). The enrichment gained when researchers cross disciplinary boundaries can further enrich their fields and facilitate knowledge advancement by fostering change (MacInnis & Folkes, 2010; McGregor & Volckmann, 2010).

A Transdisciplinary Methodology for Consumer-Related Initiatives

While inter means between two or more things, trans means zigzagging back and forth, moving across, going beyond, the blurring of, and pushing past, any existing boundaries. In this case, we are concerned with the boundaries around university disciplines and the boundaries between the university and the rest of society. Transdisciplinarity represents a deep respect for the synergistic potential between (a) ideas coming from academic disciplines and (b) ideas stemming from the consumers who are actually experiencing and living the problems. From a TD perspective, not only would the walls come down from around the disciplines within higher education (e.g., between consumer studies/ behaviour and other disciplines that inform their scholarship about consumers), but the walls would come down or become more porous between higher education and the rest of the world.

This boundary-blurring process involves an academy-society interface wherein, through a lengthy and complex process, academe knowledge and action-relevant knowledge are integrated (Liokumovića, 2008). Horlick-Jones and Sime (2004) coined the phrase border-work to refer to the intellectual work that occurs when people living on the borders of the academy (university disciplines) and civil society engage in complex problem solving. Their intent is to enable new types of embodied knowledge to emerge through complex and integrated, mutually learned insights. Even more compelling is the notion that the work undertaken during these iterative border-crossings cannot be compared to that of networks or teams. Instead of networking, Engeström (2005, p. 316) coined the word knotworking, and defined it as “rapidly pulsating, distributed, and partially improvised orchestrations of collaborative performances between otherwise loosely connected actors and organizational units.” Molz (2009) explains that these knotwork sequences can be extremely productive and innovative and do so without any centre of control or authority. The locus of initiative changes from moment to moment as the actors focus on and circle around a complex problem and crisscross across boundaries. The unstable knot becomes the focus of analysis when conducting TD research because it metaphorically represents the elusive and improvised phenomenon of complex problem solving.
This paper will employ several other metaphors to convey the nuances of transdisciplinary work, which is predicated on chaos theory, quantum physics and living systems theory (Nicolescu, 2008b). These metaphors include a lava lamp, a tapestry and dance. Using a metaphorical approach enables one to convey deeply complex ideas. Metaphors serve as tools to help people make analogical leaps from the familiar to the unfamiliar. Metaphors can be conduits or passageways to help people learn new, abstract concepts. They help people extend their familiar knowledge of the world to a region that they have not yet experienced. From a transdisciplinary perspective, this region is very complex, composed of many interconnected parts and difficult to understand because of its intricacy. Metaphors simplify and augment people’s joint learning processes, giving them a temporary common language while they navigate the space among the disciplines and between the academy and civil society. Metaphors give people new degrees of conceptual freedom, releasing them from the chains that bind them to their root disciplines (Judge, 1991; Rigney, 2001).

Transdisciplinarity is a whole new way of solving the complex problems of the world, especially those generated by 21st century consumption. Conceiving consumer issues through a transdisciplinary lens offers a new form of learning, inquiry and problem posing that involves cooperation among different parts of society in order to meet the complex challenges of a global consumer society (McGregor, 2005). It has its own methodology, different from the conventional positivistic, interpretive and critical paradigms (McGregor, 2007a; McGregor & Murnane, 2010): (a) multiple levels of reality and attendant levels of perceptions (ontology), (b) the logic of the included middle, and (c) knowledge as complexity and emergence (epistemology) (Nicolescu, 1985, 2002, 2005b; 2006a, 2006b, 2007, 2008b). Cicovacki (2004, 2009) and McGregor (2009a, 2010b) recommend a fourth axiom for a TD methodology, that of values (axiology)² (see figure 1).

Figure 1: Pillars of Transdisciplinary Methodology

² As a caveat, not all TD theorists believe there should be a fourth axiom of axiology. Nicolescu (2007) credits Erich Jantsch (an Austrian) for underlining the necessity of inventing an axiomatic approach for transdisciplinarity and also for introducing values in this field of knowledge. Nicolescu does not see the need for a fourth axiom.
Axiom 1 - Ontology - Multiple Levels of Reality

Conventional approaches to consumer issues are predicated on the positivistic and empirical notions of fragmentation, separation, dualities (this or that), and universal laws that apply to everything and everyone (with no concern for context). From this perspective, consumer scholars would assume that the picture of reality (e.g., consumption) is incomplete and made up of many separate parts and that they can conduct experiments and develop theory about this reality, eventually building up a more complete picture. To do this, they would design taxonomies, categories and hierarchies, the most famous one in consumer studies being Bannister and Monsma’s (1982) classification system for consumer education concepts. This is not a bad approach to study consumer interests or consumer behaviour. It is just not the approach that would be used within a TD methodology.

Rather than assuming that people can best understand consumer issues and the consumer interest as comprising one level of reality (that is, static, rationale, objective and generic with mind, body and soul disconnected and separate), a TD methodology assumes there are multiple layers of reality that interact with each other (see figures 2 and 5). Consumer scholars would respect the dynamic, complex relationships between, first, the political, social, historical and individual levels (called TD subject, the internal world of humans) and, second, the environmental, economic and individual and planetary/cosmic levels (called TD Object, the external world). Each of these levels of reality is characterized by its incompleteness; yet, together, in unity, these realities generate new, infinite knowledge (Max-Neef, 2005). Morin (1999b) refers to these many realities as connective tissue, in great abundance but with no ultimate foundation. Transdisciplinarity assumes “no level of reality constitutes a privileged place from which one is able to understand all other levels of reality; instead, a level of reality is what it is because all the other levels exist at the same time” ( Nicolescu, 2006b, p.147).
In more detail, the internal world of humans (the TD subject) involves a flow of consciousness across different levels of perceptions of the world. The external world of humans (the TD object) involves the flow of information across different levels of reality (what we know as disciplines or fields of study). Moments of breakthrough happen, those ‘aha moments’, when consciousness meets information and they share the zone of non-resistance. Thirdly, TD methodology employs the concept of The Hidden Third to refer to the place where people’s experiences, interpretations, descriptions, representations, images, and formulas meet up with information. Three levels of reality exist in this mediating zone: culture, religion, and intuition or spirituality (see Figure 3). For consumer studies and behavior scholars, this approach requires a deep shift from focusing on taxonomies, lists, individual theories and definitions about consumer-related issues to the processes and energy flows inherent in deep, complex interactions among people’s internal world, their external world and the mediating factors of culture, art, religion and spirituality. This particular axiom is concerned with multiple levels of interactive layers of reality replete with levels of perceptions and flows of information and consciousness among these layers of reality. The result is a unity of realities, a unity that better reflects the complexity of human issues influenced by unsustainable, possibly immoral or amoral, consumption (McGregor, 2008a, 2010b).

Figure 3: The Breakthrough Moment
Consumer studies and consumer behavior scholars who are currently practicing from an interdisciplinary perspective are already familiar with the idea of making connections between the human and social sciences (political, psychology, sociology - the internal world of a human) and economics and the natural and artificial sciences (worlds external to humans). TD would add the idea of accepting that culture, art, spirituality and religion act as mediators that enhance the links between these familiar disciplinary arenas (what TD calls levels of reality). Through this mediating link flows both information and consciousness, the latter being a stretch for conventional consumer scholar academics. Consciousness represents the internal world of humans, reflecting how they experience and perceive reality, as filtered through culture, art, spirituality and religion (referred to by Nicolescu (2006b) as the sacred). Most consumer academics are very comfortable with information as a concept but less familiar with consciousness and sacredness as concepts (McGregor, 2010b).

Axiom 2 - Logic - The Logic of the Included Middle

Ontology is concerned with what counts as reality (all of people’s experiences that determine what appears real to them). Transdisciplinarity asserts there are multiple levels of reality. Nicolescu (2000, 2008b) acknowledges that each level of reality has its own laws and fundamental concepts and applies the logic of the included middle when referencing the relation between levels. Logic is concerned with the habits of the mind that are acceptable for inference and reasoning when arguing one’s position on an issue. In philosophy, logic is concerned with answering the question “How do we know what we know?” Logic (reasoning and inference) is used in most intellectual activity, and perceptions of what counts as logic underpin all intellectual activity.

To offset higher education’s tendency to be predicated on the Newtonian logic of exclusion (Nicolescu, 2008b), transdisciplinarity “conceives a broader horizon for the cognitive act” than that of reductionist-based scientific inquiry (De Mello, 2001, p.1). The logic of exclusion assumes that the space between objects or people is empty, flat, static and void of life (like the space between the balls on a billiard table). In academic life, this logic manifests as separate departments, journals, library holdings, conferences and professional associations. It is also evident in the familiar intellectual actions of: deduction (cause and effect), linear thinking, reductionism (breaking things down into parts to understand the whole from which they come), and either/ or approaches with no room for contradictions. The logic of exclusion is at the heart of most cultural grand narratives (Murphy, 2003), especially in the form of competition, economic success, individualism and techno-science.

Consumer behavior and consumer studies scholars employ the logic of exclusion, even though they are characterized as interdisciplinary (and even just multidisciplinary). Interdisciplinarity builds bridges between disciplines so ideas can cross back and forth across temporary, coordinated borders. The assumption is that a bridge is needed to cross the deep chasm between siloed, fragmented fields of study. In practice, this means that there are many instances when people from different disciplines or in civil society cannot talk to each other; hence, there can be no integration or generation of new knowledge (MacCleave, 2006).
The logic of exclusion is also predicated on fragmentation and separation and Classical Aristotelian logic of reality as dualities. Theories developed within each separate level of reality (e.g., political theories, economic theories) often remain separate, disconnected theories. Indeed, assuming that a whole can be understood by examining all of the parts, consumer scholars have gone about striving for a *complete theory* of consumer behavior by developing a large collection of mini-theories. There is an ongoing debate within the consumer behavior discipline of whether the field should strive for a unified theory of consumer behavior or be content with many smaller theories that describe bits and pieces of consumer behavior (e.g., information processing, adoption-innovation, decision making). This aspect of the consumer behavior discipline is a striking example of the logic of exclusion.

Classical Aristotelian logic says there *is no* middle ground between things (e.g., between theories or between disciplines). In contrast to a logic of exclusion, a TD methodology embraces the *Logic of the Included Middle*. This inclusive logic enables people to imagine that the space between things is alive, dynamic, in flux, moving and perpetually changing. It is in this *fertile middle space* that transdisciplinary manifests itself. TD has people stepping through the zones of non-resistance (away from one worldview towards another) (see Figures 2 and 3) onto a fertile, moving floor of the *included middle*, where they generate new transdisciplinary intelligence and knowledge, together.

A useful metaphor for this idea is the lava-lamp (see figure 4). As a soft light source, the lava lamp it is a see-through container in which one watches the slow, chaotic rise and fall of randomly shaped balls of wax. The ever-changing patterns are invigorating, progressive and in perpetual motion. The Logic of the Included Middle holds that there *is* middle ground if people accept that different actors have different *perceptions* of things. Finding new knowledge in the fertile middle ground is possible when everyone’s ideas are heard. For each person, his or her point of view is his or her truth *until* it encounters something else, the ideas from another person or discipline. The balls of wax represent the formation and embodiment of this new knowledge. The viscous fluid of the lamp is always in movement, with new things bubbling up and falling back onto those moving about on the undulating floor (the included middle). Embodied knowledge is created from the energy generated from *intellectual fusion*. When the separate bits of knowledge and the people who carry them came together to dance in the fertile transdisciplinary middle, they move faster when they are exposed to each other than when they are alone, creating intellectual fusion (Lattanzi, 1998).

If people can move about in the middle ground (dance on the floor of the lava-lamp), come in contact with each other and get motivated, an energizing force is generated - a synergy is created. A sense of community and belonging is nurtured - a sense that they are part of something bigger than each one of them. At the same time, there is a realization that everyone is a new and different person in each relationship formed in the fertile middle. The strength and potentialities that emerge from this intellectual dance are life-giving and transformative.

In this space, while engaged in intellectual border work, people free float in *intellectual outerspace* instead of staying pinned down in their traditional, safe, disciplinary space or...
particular way of knowing the world (Lattanzi, 1998). In this space, people would always wonder, and seek far-reaching solutions to the world’s pressing problems. This free floating status makes it very easy to navigate between different, concurrent levels of Reality (see Figure 5), creating new, transdisciplinary knowledge. What appears to be a complete contradiction on one level of reality gets resolved if viewed from another level of reality (van Breda, 2007). Imagine the intellectual doors that would open if consumer scholars assumed that independent realities concurrently exist, and that they manifest themselves to us through our interactions with them in the included middle.

![Figure 5 - Navigating Levels of Reality (used with permission of Basarab Nicolescu)](image)

When consumer scholars use the logic of the included middle (making a space for contradictions and discontinuities in realities) to move through the different levels of reality (akin to different disciplines within the human, social and natural sciences), they would generate a permanent possibility for the evolution of knowledge. Transdisciplinarity holds that the logic of the included middle allows people to bridge adjacent levels of reality, enabling meaning-making systems to orient themselves to each other (Nicolescu, 2008b). Any theories that are developed at any given level of reality become transitory theories, which are open to change when confronted with contradictions from other, even new, levels of reality. Knowledge becomes an open, complex structure, rather than a completely unified theory (Max-Neef, 2005).

Perceiving the space between things as empty and void means people do not have to pay any attention to it - it is not part of their reality. It is common for consumer studies scholars concerned with the consumer interest to say “People fall through the cracks and become invisible. Their interests need to be protected through policy and advocacy.” But this mindset is also having negative repercussions from a global perspective, because it enables consumers to exclude any consideration for the consequences of their actions on the invisible other (the laborers and other species). One of the major features of 21st century consumption is the geographic and psychological distance between Northern consumers and Southern laborers. These distances have compromised people’s abilities to establish trust relationships, gain and apply knowledge of
ethical and moral principles, respect a sense of community and solidarity, and believe they can make a difference (Klintmann & Boström, 2006).

When consumer scholars use the logic of the included middle, they would naturally turn to other disciplines, industry, governments and civil society, and most especially to those implicit in, and affected by, the fall out of unsustainable and unjust consumption. The logic of the included middle creates a space for dialogue and knowledge generation between people. Arrogance and unwillingness to cooperate can lead to a sense of alienation and misunderstanding among those whose interests are likely to be affected by controversial decisions. Inclusive logic completely alters the balance of power in the adoption of controversial decisions. With TD, there would be attempts to reconcile different logics for the sake of solving the problems of humanity. This reconciliation cannot happen if people continue to engage with the logic of the excluded middle where everything is separate, disconnected and alienated. No longer would actions informed by siloed consumer research be designed in isolation, implemented using the logic of exclusion. A view from a specific discipline must take a back seat to transdisciplinary and integral views on the problems of humanity informed by consumerism.

Axiom 3 - Epistemology - Knowledge as Complex and Emergent

From a TD perspective, the consumer problems that need to be dealt with are not the mundane issues of credit, debt or financial wellness; rather, they are the pervasive problems of humanity impacted by consumption, problems that simply cannot be dealt with using the knowledge from one discipline. To reiterate, these complex problems include: the human condition, unbalanced energy flows, unfulfilled human potential, hindered freedom and justice, unsustainability, disempowered individuals and communities, uneven distribution of resources, and abuse of personal and political power through human aggression and uneven development (Morin, 1999b; UNESCO, 1998, van Breda, 2008). It is because of consumption, especially because of prevailing paradigms and ideologies that favor neoliberalism and political conservatism, that people experience the problems they do in the 21st century.

Twenty-first century consumers face the symptoms of larger-than-life problems that are complex (which is different from complicated, see below) and emergent, the latter referring to properties, insights and other nuances that arise and become visible as the problems are solved (to be discussed shortly). Therefore, to create transdisciplinary knowledge to deal with the root causes of human issues, consumer scholars would perceive there are multiple levels of reality. This stance translates to a marriage of environmental sciences, economics, politics, labor laws, sociology and anthropology, home economics, health and many other disciplines. This melding of realities has to happen in conjunction with the integration and cross-fertilization of insights from the academy with private and public sectors and civil society, using the logic of inclusion.

To that end, as with ontology and logic, transdisciplinarity strives for a different kind of epistemology. It respects a way of knowing based on cross-fertilization, complexity and emergence. Each will be discussed in detail because the TD methodology uses these familiar words in a different manner than a lay person, or conventional academic, in the fields of consumer studies or consumer behavior. A new vocabulary is needed or at least different understandings of familiar words, especially complexity and emergence. “Transdisciplinarity is
inseparable from complexity” and emergence (Morin, 2005, p.23). Of special note is the distinction made in transdisciplinarity between complicated and complex problems. Complexus means that which is woven together (Morin, 1999a). Although complicated and complex have the same root, they do not mean the same thing in a TD methodology. A complicated problem is characterized as hard to solve because it is intricate, tangled, knotty and detailed (see figure 6). It is one thing to untangle the strings of a complicated problem but quite another to re-weave them, along with new strings, into a new whole. The latter process is an inherent part of solving a complex problem because it features the concept of emergence (to be discussed shortly).

**Complexity**

Although there are many definitions of complexity, Nicolescu (2006a) argues that the only one appropriate for transdisciplinarity is that offered by Edgar Morin (2005). His notion of complexity takes people beyond the opposite of being simple to a method of knowing that respects the mystery of the universe. His definition of complexity is outside the epistemology of classical science because it rejects reductionism, determinism and disjunction (binary truth). His notion of complexity requires that people (a) comprehend the relations between the whole and its parts (holons and holography) - the principle of distinction that retains relations (instead of reductionism). As well, the whole can be less than the sum of its parts. When a system self-organizes, it opens the door for the suppression of properties that might have emerged. His notion of complexity also requires that people (b) conceive relations between order, disorder and organization (rather than determinism), appreciating that order means stability, regularities and cycles (as well as conventional laws) and that disorder means blockage, collisions and irregularities (as well as dispersion and disintegration).

Within transdisciplinarity, “pertinent knowledge must confront complexity” (Morin, 1999b, p.15). Assuming, epistemologically, that there is a connective tissue between knowledge, its context and humans, Morin explains that complexity impels people to move from knowledge housed in separate disciplines within the academy to assembling and organizing knowledge dispersed in the natural, social, engineering, medical and human sciences. This assembly demonstrates the permanent connection between the unity and diversity of all that is human. What counts as knowledge has to expand beyond that which is generated by the scientific method to include the complex structure of understandings garnered through intricate webs of relations between people in the academy, the private and public sectors, and civil society (McGregor, 2004, 2006, 2007a).

In a most intriguing notion related to creating transdisciplinary knowledge, Morin (2005, p.13) urges people to “link concepts which normally repel each other logically, like unity and diversity. [People] are obligated to connect all these disjointed notions” so as to conceive a living organization or system. Morin suggests that, as this organization works to maintain itself, it degrades energy by its work, meaning it must draw energy from its environment. The organization depends on negative (maintain the status quo) and positive (deviate from the path) feedback to self-generate. Increasing deviation allows for transformation; hence, Morin’s notion of complexity implies that consumer scholars would pair unlike ideas to generate intellectual
deviations. This pairing of unlike ideas occurs in the **fertile middle ground** as people navigate different levels of reality, matching consciousness with information. The **logical core** of complexity is disparate pairs, dialogic. To keep these ideas apart leads to the breaking up of knowledge, preventing people from linking and contextualizing things; decontextualized knowledge leads to ill-solved problems of humanity, including those created by 21st century consumption.

**Emergence**

Poverty will be used to illustrate the principle of emergence (McGregor, 2009a). Poverty can be described along many dimensions: global and personal security, human rights, universal rights, moral responsibilities, order with justice, and global as well as intergenerational justice. It is definitely... a **complicated** issue, hard to solve using disciplinary knowledge. Transdisciplinarity holds that as people pass through the zone of non-resistance (accept that there are many realities) and enter the fertile middle ground to problem solve using the logic of inclusion, the process of emergence comes into being. Emergence refers to novel qualities, properties, patterns and structures that appear from relatively simple interactions among people, qualities that did not exist when presented in isolation. These new qualities are layered in arrangements of increased complexity (Morin, 2005; Nicolescu, 2008a).

To continue the example, emergence means consumer scholars would assume that poverty is **continually changing** as people try to solve it. It is a rich weave of societal structures and functions. This new weave of poverty (and people’s understandings of poverty) keeps changing because new and coherent structures, patterns and properties **emerge** as a result of the interactions among people trying to address poverty while working within a web of changing relationships (on the included middle ground). Original perceptions about addressing poverty are left behind or transformed as a new weave and fabric takes shape (see figure 7, a new tapestry from the threads of the knotted, complicated problem (figure 6) and the synergistic energy generated during the intellectual border work). The energy created, the information generated and the partnerships formed also constantly change as understandings about the complex problem change - everything is in flux and *in-formation* (Lattanzi, 1998). The intent of transdisciplinarity knowledge creation is to get to know the world better by weaving together many ways of knowing and being in the world (Nicolescu, 2000).

**Order and Chaos**

As indicated, instead of just dealing with indebtedness, credit acquisition practices and the like, consumer studies and consumer behavior scholars would grapple with the problems of humanity including the problem of poverty and unequal resource distribution that can play out in consumers’ lives as issues of credit, debt and housing. In the 21st century, consumers’ daily lives are more complicated (knotted) and complex because the balance of order and disorder changes as life unfolds. To address this imbalance and tension, the TD methodology further requires that people adopt new understandings of order and chaos. Consumer scholars would learn to conceive of relations between order, disorder and self-organization,
rather than conceive relations as empirical determinism. The latter holds that every state of affairs is determined by what came before it and constitutes a link in an unalterable chain of events: get a credit card, misuse it, get in debt, become poor - one thing leads to another in a predictable pattern. In the empirical methodology, chaos and disorder are seen as signs of deep trouble in the system. Not so, from a TD methodology. Wheatley (1999) explains that order and chaos are mirror images of each other. Order is created through chaos, through the processes of fluctuations, changes and disturbances. Chaos is order without predictability and is very different from the concept of order in the old science - predictable, controllable and consistent.

As well, a TD methodology includes the notion of self-organizing systems. Chaos is a necessary place to dwell if consumer scholars wish to engage in transdisciplinary inquiry and practice. They would trust that new insights will appear in this chaotic state, believe that they are self-organizing beings able to change. Being stable, while being open, is foreign to the old science, which assumes that when things wear down, the center cannot hold and things grind to a halt (even fly apart). In the TD methodology, being stable, while open, happens because of people’s deep stabilizing center where they know who they are, what they need to do and that they are not acting alone (in the lava-lamp). As consumer scholars matured and developed self-knowledge, they would become more adept at this deeper, core stability (see figure 8) (Wheatley, 1999).

What comes to dominate over time is the internal dynamics of the system instead of the outside influences. Because people are partners with the system (through navigating the multiple layers of reality), they gain autonomy from the system. The more freedom people have to self-organize, the more order there is. The system and people co-evolve over time. From a TD methodology, consumer scholars would strongly believe in keeping themselves off balance so that they can change and grow through an open exchange with the world. It is then that they can behave in ways that defy the normal expectations and move themselves to new states of disequilibrium, knowing that a deeper stability is serving as their foundation while they solve complex problems of humanity that are exacerbated by 21st century consumption (Wheatley, 1999).

Because targets keep shifting and the issues often must be redefined, consumer scholars engaged with the TD methodology face a lot of uncertainty (Allen & Varga, 2007). Although the process of fluctuations, changes and disturbances requires consumer scholars to accept uncertainty as they seek solutions, not everyone is able or willing to do so. Accepting uncertainty is essentially a function of culture change, a shift in outlook, and a willingness to seriously understand the views and aspirations of others. A transdisciplinary approach enables consumer scholars to look at knowledge from different levels and different perspectives. What is taken to be true depends on the framework of knowledge and assumptions brought in by individuals and their social, political, economic and occupational settings (Torkar & McGregor, 2010). TD assumes that traditional theories of truth are one-sided and inadequate. It is not that these theories completely miss the nature of truth; rather, they capture only a few relevant aspects of truth and disregard all others (Cicovacki, 2004). Pretty and Plimbert (1995) maintain it is essential to seek
Consumer scholars would integrate many levels of truth, resulting in unity, which better reflects the complexity of human issues. Consumer scholars would learn to appreciate that their thoughts, mental models and theories are necessarily incomplete and temporary props to current interactions with other actors. In fact, differing perceptions and views are a source of creative interaction, innovation and change (Allen & Varga, 2007).

Consumer scholars also would come to welcome chaos, uncertainty, tension, emergence and complexity because they would know it is going to lead to personal and disciplinary growth and evolution. Change creates chaos (a lack of regular, predictable arrangements). Consumer scholars would be able to self-organize (reorganize) when they can accept chaos and seek solutions to the lack of order (the problems of humanity). This reorganization leads to renewal. Consumer scholars would not try to maintain the old order but would enter into trustful, sharing relationships with others who have the same vision and relevant information and, together, create a new world and creative solutions to complex, emergent problems. Through rich processes and exchanges, multiple minds can interact and produce a complex knowledge containing its own reflexivity (in the lava lamp). The knowledge is alive because the problems the knowledge addresses are alive, emerging from the life world. This is a powerful approach to consumer scholarship.

**Axiom 4 - Axiology - Integral Value Constellations**

Because transdisciplinarity is about understanding the problems of the world (Nicolescu, 2007), those engaged in transdisciplinary work would be concerned with values. Traditional Newtonian science holds that research should be value neutral; there is no place for values in objective science (McGregor & Murnane, 2010). However, working together in fluctuating, enriching and challenging relationships necessitates a concern for values, especially since complexity infers the need for more than a single expert’s solution. By their very nature, interactions among multiple actors as they solve problems in the polycrisis will give rise to value conflicts and contradictions. These conflicts can result in power struggles. In a TD approach, power is energy; it is the capacity generated through relationships. Without relationships, there can be no power. Whether the power generated as people work together to solve complex, emergent problems is negative or positive depends upon the nature of the relationships. That in turn is predicated on values. Furthermore, with power comes responsibility. Embracing this responsibility would be a challenge for consumer scholars unless the constellation of values at play is respected and managed.

Cicovaki (2009) makes a strong case for an axiology of transdisciplinary and McGregor (2009b, 2010) labeled this integral value constellations. Cicovaki argues that TD practitioners need to be able to deal with values and their systematic examination, even to develop a map of values that would serve as a coordination system for the TD map of reality people are trying to assemble. Values provide people with a center that gives them a sense of orientation to further develop their humanity. He maintains that one of the deepest problems of our time is the problem of orientation, of choosing and pursuing the “proper art of living” (Cicovaki, 2009, p. 14).
In the absence of clear vision of a new art of living ... in the center of all values, we are walking a very dangerous tightrope. ... In the face of the threatening dilemmas that we confront as individuals and as a civilization, it is of utmost interest to learn more ... about how they can be resolved. ... It is not at all improbable that humanity will not survive the twenty-first century. (Cicovaki, 2009, pp. 14-15)

Cicovaki believes that a TD axiology would empower people to dedicate themselves toward building a new kind of humanity to offset this doomsday projection.

So, because TD is deeply influenced by ethical, moral and pragmatic matters of orientation, consumer scholars would concern themselves with axiology (the science of values, ethics and morals). One of the intents of axiology is to link thinking (valuing) with action (Giuculescu, 1998). Consumer behavior is action oriented. Within transdisciplinary complex problem solving, thinking and action are intricately bound, necessitating a key focus on values. Indeed, Bazewicz (2000) affirms that transdisciplinarity holds a holistic vision of the world, and is concerned with the local and global integration of values.

Hartman (1967) posits that everyone’s value talent is in motion, changing as situations change around them. Consumer scholars would learn from this approach. Three dimensions of values form the apex of anyone’s valuing process, and each person values things in one of these three ways, or in some combination: (a) intrinsic value (personal or spiritual empathy and self-esteem); (b) extrinsic value (practical or situational, including role awareness and practical judgement/thinking); and, (c) systemic value (conceptual or theoretical constructs of the mind including: system judgment (the ability to judge order within a system) and self-direction, motivation and persistence). The result can be tension amongst the three dimensions of values. Bottom line - how people think (what they believe is worthy) will determine how they act in a problem solving situation. Consumer scholars would appreciate that proper valuing requires attentiveness to all three value dimensions. To illustrate using sustainable consumption, a person may prefer a particular corporation (intrinsic), but a balanced value attention would also include paying attention to the vendor’s performance according to corporate social responsibly sourcing standards (extrinsic), and its performance in a legal manner (systemic).

Cicovaki (2009 and van Breda (2007) urge people working with the transdisciplinary methodology to keep looking for agreement in the area of axiology. In order to develop the necessary tolerance of different viewpoints, so people can stay engaged in conversations about the complex problems shaping the human condition, consumer scholars would respect the role of axiology in transdisciplinarity. Küpers (2009) asserts that changes in value mixes are a key part of the rapidly changing global village, and that profound changes are taking place at all levels. He agrees with van Breda, that values often are the missing link in providing strategic solutions to key, global issues, which are informed by a collage of differing worldviews held by individuals, cultures, nations and regional and international groups.

Küpers (2009) further explains that peoples in civilizations progress naturally through three value systems: (a) collective values (tribal, dictator/ power and stability and order); (b) individual values (individual freedoms, private enterprise, free market values, then environmental and ecological values); and, (c) integrative/ integral values (integration of all of the previous values in order to build a stronger integrated approach to global issues). This approach is very similar to
Wilber’s (2007) integral theory of everything, which includes insights from spiral dynamic theory. Consumer scholars would appreciate that it took centuries for the first two value systems to evolve (i.e., collective and individual) and the world is only just now approaching any semblance of integral values (Küpers, 2009; Wilber, 2009). That is why it is crucial for consumer scholars to continue to focus on values and citizenship (Thoresen, 2005).

The transdisciplinary dialogue, by its very nature, will witness the inescapable value loading of every inference and every opinion. Every line of conversation about the import of consumer decisions will face a potential clash of values, ethics and morals. Consumer scholars would reconcile the different sorts of knowledge characteristic of the sciences in the academy with the involvement of citizens in an extended peer community (Funtowicz & Ravetz, 2008). They would redefine and articulate tomorrow’s values and reflect on the direction these values may lead humanity (Bindé, 2004). Society runs the risk of bad decisions if the world of values (axiology) is not taken into account and if conflicts cannot be resolved (Cicovaki, 2009). Given the polycrisis faced by the world, consumer scholars cannot risk enabling too many bad decisions, nor persistent conflict. They would respect the merit of valuing the differences among people and build on those insights. An integral value constellation would be a laudable goal for transdisciplinary consumer scholars.

**Desired Emergent Developments - A Reframing of Consumer Scholarship**

Because consumption affects everyone, everyone has a stake in the outcome – everyone’s interests are affected, not just consumers. Torkar and McGregor (2010) coined the term *stakeholder* to reflect the idea that transdisciplinary scholarship entails people sharing ideas, solutions, threats and opportunities as they try to advocate their collective responses to complex problems - to address their stake in things as well as the stake of humanity and the earth. As they do this, people, including consumer scholars, would balance different logics, values, ways of knowing and would function on many different levels of reality. This is a profoundly new approach to dealing with the fallout of 21st century consumption.

And, as pressing as it is that consumer scholars begin to shift towards this methodology, this paradigm shift poses many, many issues (e.g., Pfund et al., 2006; Tourse et al., 2008), not the least of which are attempts to: (a) secure tenure, promotion and reappointment; (b) obtain grants for scholarship that spans disciplines and embraces civil society; and, (c) engage in scholarship that intentionally zigzags back and forth among comfortably siloed disciplines, each with their own departments, library holdings, professional associations and scholarly dissemination venues.

The following section shares a collection of ideas about how consumer scholars would have to reframe their approach to engaging in scholarship within the academy and between the academy and civil society. These ideas are gleaned from another paper on the topic of transdisciplinary consumer scholarship (McGregor, 2007a):

- It is the *context* of where the new knowledge will be applied that matters, not the agenda of the disciplinary home of the consumer scholars (Gibbons et al., 1994). TD assumes that knowledge is generated and sustained in the context of where it will be applied, rather than
developed first, and then applied later by a different group, as is the case with basic science.
- The knowledge created in context belongs to everyone (because it was created by everyone) rather than being confined to (trapped in) a disciplinary map and useful for just one context. Novel ideas generated in the fertile space among and beyond disciplines can be nurtured and expanded by ensuring continuous feedback and input of everyone (Nicolescu, 1997, 2002), and by respecting the dynamics of knotworking (Engeström, 2005; Molz, 2009).
- Consumer scholars would learn to rely on the safety of the evolving collective of actors and the potential and hidden possibilities rather than rely on the certainty of relatively risk-free disciplinary expertise. In TD, there is no one-right answer, no standard approach. With this in mind, consumer scholars would not stop at the first answer that seemed to satisfy their disciplinary dictates; instead, they would dig deeper through dialogue, perspective sharing, and in-formation (Lattanzi, 1998).
- Consumer scholars would learn that the disciplinary, academe imperative has to be set aside to create a voice for those working in other types of organizational homes, in other contexts (especially civil society organizations) - a voice for the humanity imperative.
- Consumer scholars would move from creating knowledge from a position of disinterested detachment to negotiated knowledge with those holding different interests but common concerns for human problems (Smith, 2003).
- Instead of relying on the integrity of their disciplinary differences, consumer scholars would be open to transdisciplinary de-differentiation (Gibbons et al, 1994). That is, they would respect synergy (Greek sunergos, for working together) and sharing, rather than working in isolation and hoarding. They also would change perspectives so they saw information as in-formation in dynamic contexts, rather than being fixed and proprietary (Wheatley, 1999).
- Consumer academics would accept the idea that they are transient - they have a foot in their academic home while roaming the connections available in the network of relationships (harken to the idea of knotworking). The knowledge they create is socially distributed and sustained through network building by mobile practitioners (Smith, 2003). Being transient would mean consumer scholars would become comfortable with not having a specific academic home. Instead, they would accept the idea of having a continued presence in their disciplinary field of knowledge, but do so whilst intellectually roaming in order to network with meaningful connections at the crossroads. Communications become key in this itinerant research and problem solving process as do value clarification and integration.
- Consumer scholars would respect a new trait, institutional diversity. It refers to research and scholarship taking place way beyond the hallowed halls of the ivory tower. Scholarship would take place in departments and laboratories, think-tanks, research centers, institutes, retreats, through consultancy networks, in people’s homes and living rooms, even on air planes (Smith, 2003).
- Consumer scholars would no longer wear the mantle of ‘founding father’ because the TD knowledge that is created is a collective initiative - an embodied knowledge. Some consumer scholars may experience the pull to don this mantel more than others, especially because some efforts to form TD knowledge can slip back into discipline formation (Smith, 2003). This slippage happens because it is difficult to gain tenure and promotion in
an academy that still values disciplinary silos, isolated experts, and elitism. Consumer scholars exploring the TD path would expect complications and setbacks until academic governance structures, funding agencies and mind sets catch up. More seasoned consumer scholars would brave the repercussions of stepping outside the disciplinary boundaries into the rich fertile space between disciplines, where the academy meets society for the betterment of humanity.

- Because embodied knowledge \textit{belongs to society}, consumer scholars that are familiar with employing positivistic criteria to gauge the robustness of the information (reliability and validity) would embrace other notions of robustness. Yes, it is still incumbent on those creating the knowledge to assure that it is of a certain quality. It would not bode well if un-robust knowledge was used to solve deep, human problems, even if the knowledge was jointly created in context. Smith (2003) and Gibbons et al. (1994) refer to this issue as the ‘quality control of knowledge production’, and suggest that criteria for \textit{socially robust knowledge} (instead of empirically reliable knowledge) might include: justice, effectiveness, efficacy, autonomy, and other evidence of success after addressing the resolution of a pressing social problem. From a transdisciplinary stance, consumer scholars would explore the meaning of ‘\textit{socially approved knowledge}’ (Smith, 2003).

- Within the confines of the traditional academy, conventional scholars can dispense with the influence of politics, theology and ethics in the pursuit of disciplinary truth because of academic freedom (Fuller, 2003). In the real world, where TD consumer scholars would be dealing with deep, pressing human problems, it is not possible, nor prudent, to dismiss the influence of the political economy and the social reality of citizens. Social concerns cannot be kept at arm’s length. They \textit{are} the arms that shape the scholarship.

- Consumer scholars would gain respect for the \textit{role of place and of the rhythm of the soul} in the process of integral and transdisciplinary learning and discourse. Focusing on the commons \textit{releases the genius of society}, especially if scholars strive for fusion of indigenous, embodied knowing with conventional, disembodied knowing. The power of the people and the power of the commons deeply inform transdisciplinary thinking (personal communication, Ronnie Lessem, June 17, 2010).

- Consumer scholars would focus on leadership rather than the leaders. Leadership is a process involving discourse, and starts with wholeness, not the parts fitting together. They would focus on the discourse, on trying to find the language to have the conversation, so they can discover the patterns in each other’s’ thinking - \textit{the integral gems} (personal communication, Wendelin Küpers, June 17, 2010).

The intellectual contributions of consumer studies/ sciences and consumer behavior scholars is paramount to the future of humanity and the planet. Their scholarly endeavors inform public and private dialog and decisions about the consumer interest and the role of business vis-à-vis consumer behavior. The whole of humanity is dependent on changing the nature of 21st century consumption so that it embraces a humanity and planetary imperative. The transdisciplinary methodology gives consumer scholars a powerful paradigmatic perspective from which to engage themselves, other disciplines and members of civil society in the process of solving complex, emergent human problems shaped by consumption, respecting the logic of inclusion, many levels of reality, integral value constellations, and knowledge as complex and emergent.
References


McGregor: Transdisciplinary Consumption


Nicolescu, B. (2006a). *International congresses on transdisciplinarity* [Interview given by Basarab Nicolescu to Professor Augusta Thereza de Alvarenga of the Faculty of Public Health, University of São Paulo, Brazil]. Message posted August 12, 2008 to http://www.groups.yahoo.com/group/ (transdisciplinarity@yahoogroups.com)


