

Global Knowledge Futures: Articulating the Emergence of a New Meta-level Field¹

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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 studies³—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 economic 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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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 burgeoning 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.



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 bio-mechanical 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; Hefner, 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.

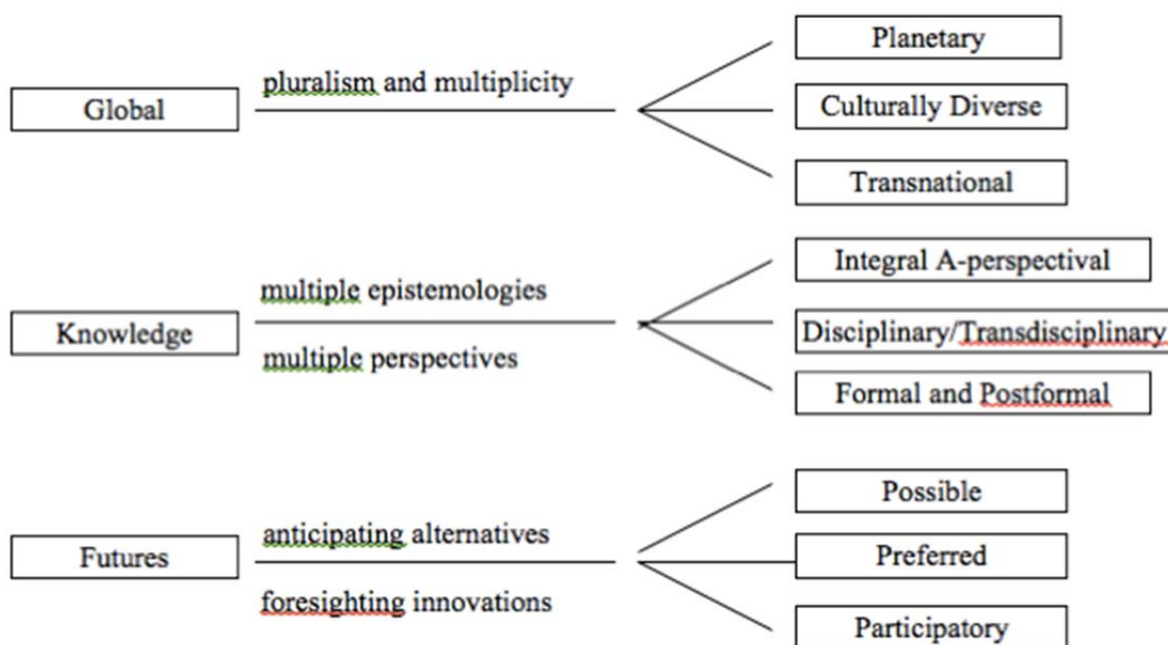


Figure 2: Global Knowledge Futures – Dynamic Unity in Dialogue with Diversity

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 (anthropo-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 economic 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,⁴ 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, metasytematic, paradigmatic and cross-paradigmatic reasoning (Commons & Richards, 2002; Commons et al., 1998).

Postformal in education: Several educational researchers have also identified the terms *post-formal* 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; Saloff-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 metasytemic 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

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 everything*⁹ (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

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 *transversal*¹⁴ reasoning and relationships through their transdisciplinarity. Morin and Nicolescu do not tend to use the term *integral*, nor are they cited

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.¹⁵ 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*¹⁶ 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.¹⁷

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

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

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).

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 1: A Hierarchical Cohering²³ of Knowledge Spheres and Epistemologies based on Plotinus' *Adaequatio* and Popper's *Three Worlds* (Sources: Harman, 1988, p. 93; Ivashkin, 1990; Popper & Eccles, 1977, p. 16; Schumacher, 1977; Vernadsky, 1943/2005, 1967/1998).

<i>Domains of Interest</i>	<i>Harman: Levels of Science</i> [Bracketed points added by Gidley]	<i>"Spheres" of Suess, Le Roy, Teilhard de Chardin, Florensky</i>	<i>Popper's 3 worlds²⁴</i>	<i>Popper's Cosmic Evolutionary Stages</i>
Domain of spirit	Spiritual sciences [anthroposophy] ²⁵	Pneumatosphere		
Domain of language, thinking, culture	Human sciences [psychology, anthropology, philosophy]	Noosphere	World 3 (products of the human mind)	(6) Works of Art and Science (5) Human Language. Theories of self/death
Domain of life	Life sciences [biology]	Biosphere	World 2 (the world of subjective experiences)	(4) Consciousness of self/death (3) Sentience (animal consciousness)
Domain of physical	Physical sciences [physics, geology]	Geosphere	World 1 (the world of physical objects)	(2) Living Organisms (1) Heavy Elements (0) Hydrogen, Helium

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.

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).

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.

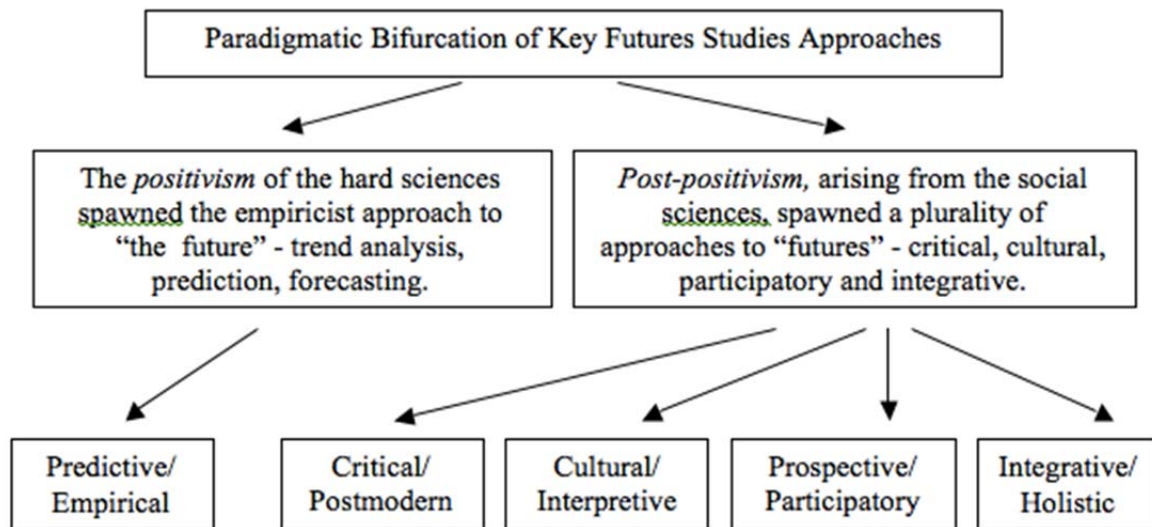


Figure 3: Paradigmatic Bifurcation of Futures Studies Approaches (Gidley © 2010)

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)

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

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 economic 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*.

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