

Beyond nature and humanity:
Reflections on the emergence and purposes of meta-theories

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Introduction: meta-theory as humanity's vocabulary of self-transformation¹

[With] self-consciousness comes the possibility of *transforming* ourselves by adopting new vocabularies, redescribing, and so reconstructing our selves and discursive institutions. While all of us are in some sense *consumers* of such new vocabularies, it is the special calling of some to *produce* them. And among those producers some take the construction of unique, potentially transformative vocabularies as the project by commitment to which they understand and define themselves. Among that group, some seek to produce those new vocabularies precisely by trying to understand the phenomena of sapience, normativity, conceptuality, reason, freedom, expression, self-consciousness, self-constitution, and historical transformation by subversive, empowering vocabularies. Those are the philosophers. They are charged neither with simply understanding human nature (human history), nor with simply changing it, but with changing it *by* understanding it.

—Robert B. Brandom (2009, p. 150)

We humans are a self-interpreting species for whom the practice of recollecting and redescribing ourselves is a crucial necessity. For us the reconstruction of identity is a continuous process wherein the *past* is selectively crafted into a *history*. It is a creative and self-constitutive exercise. We come to know each other and ourselves not by exchanging resumes (mere inventories of events), but by telling our stories. And our stories change as we do; they reflect what actually happened and what we think is worth remembering, they reflect who we were, who we are, and who we would like to become. Neglecting this retrospective task results in identity confusion, leaving us fragmented, meandering, and directionless. Some argue that the species as a whole faces an impending identity crisis as the unchecked proliferation of informational and biological technologies create abrupt discontinuities in the intergenerational fabric of the lifeworld, catapulting us out of history and into forms of life that are incongruent and incomprehensible (Habermas, 2003; Fukuyama, 2002). These concerns about possible futures appear realistic when they are seen in the context of the obvious identity confusions that already characterize large swaths of the academy, especially in the humanities and social sciences (Kagan, 2009; Menand, 2010). The disciplines traditionally responsible for the self-interpretation of the species do not have a coherent interpretation of themselves.

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This paper expresses a certain understanding of the origins and purposes of meta-theories. Remembering (recollecting and redescribing) who we are as metatheorists should go a long way toward bringing order to the disorder and fragmentation of the academy. The proliferation of robust meta-theories should in turn foster the emergence of more substantive and coherent voices in the public sphere, which is otherwise becoming increasingly irrational, inarticulate, and superficial. What follows is a certain type of scholarly intervention. It involves an historical reconstruction of core intellectual themes that have shaped a given field, addressing this reconstruction to participants in that field, and thus affecting how they understand their efforts. Both Brandom (2002; 2009) and Habermas (1971) have executed projects of this type—in philosophy and critical theory respectively—and both have discussed the unique methodological issues involved. The reconstruction of a cumulative trajectory or tradition is both a discovery and a creation. It is also both descriptive and prescriptive. We remember what we think is worth remembering, which depends in part on who we want to become, yet who we want to become is a reflection of who we think we have been all along. This kind of complex hermeneutic exercise is indispensable for assuring the continuity of intellectual traditions. Retrospective reconstructive work sets the necessary staging for concerted constructive efforts.

Importantly, these kinds of reconstructions are always partial. The story I tell here is but *one* story (and a regrettably brief and unelaborated one at that). There are other stories worth telling. And I encourage the reconstruction of different stories. In one sense this paper can be read as having a merely *expressive* intent, as opposed to its being read as if it were crafted to persuade or convince. This does not mean what follows is arbitrary or irrelevant, or that it cannot be persuasive. The long tradition of expressive philosophical projects—from Schelling, Nietzsche, and Emerson through Derrida, Rorty, West, and Brandom—would suggest quite the opposite. Many have been *influential* while yet only claiming to express themselves, especially regarding issues too deep to really argue about. So while I am adopting a somewhat unconventional argumentative strategy, it is not an unreasonable one.

I have adopted this argumentative strategy mainly in response to the state of the discourse surrounding the term *meta-theory*, which has been so variously characterized (e.g., Edwards, 2008; Fiske & Shweder, 1986; Overton, 2007; Ritzer, 1991; 1992). At first pass the term can simply be understood as referring to a type of super-theory built from overarching constructs that organize and subsume more local, discipline-specific theories and concepts. Roughly: whereas a theory within a discipline typically takes the world as data, meta-theory typically takes other theories as data. Beyond this first pass, however, the discourse about meta-theory gets very complex very fast (see: Ritzer, 1992). A highly abstract, ornate, and self-referential academic niche has emerged. And as a result there has been a flowering of interesting intellectual work concerning meta-theory. This is not a situation unique to the discourse about meta-theory. Nor do I write this intending a criticism of the field. This is how things stand in most fields, even those with seemingly straightforward subjects, such as *human memory* (see: Hacking, 1995).

But things get even more complex and contested if *philosophy* is not partitioned off from meta-theory (a move I have never seen justified) and if the whole discourse about *interdisciplinarity* and *transdisciplinarity* is also thrown into the mix (e.g., Gibbons, Limoges, Nowontny, Schwartzman, Scott, & Trow, 1994; Klein, 2005, Stein, 2007). When the net is cast broadly what comes into view is an expansive and unprecedented proliferation of reflective activity about knowledge production processes in post-industrial socio-cultural contexts. The task of cataloging the various genus and species that populate this intellectual landscape is a daunting one. And the idea of offering some new theoretical creature that might survive seems misguided, as the diversity on the current scene suggests probable redundancy. So my strategy has been to look back to a time before the Cambrian Explosion, as it were—a time before the contemporary cacophony—to find the key progenitors in hopes that this approach might allow for clarity about the core properties that characterize meta-theoretical endeavors.

What results, I think, is a compelling account wherein meta-theory is understood as a unique extension of more traditional modes of philosophy. First emerging the later half of the

19th century, meta-theory grew up as a response to advances in psychology that would transform epistemology, and to socio-economic transformations affecting the institutionalization of knowledge production (e.g., the birth of the complex departmentalized research university). It emerged to serve a normative function as a result of cognitive, disciplinary, and discursive necessities, ultimately positioning itself as a locus of responsibility for setting the trajectory of high-level discourses and reflective cultural practices. Of course, today meta-theorists claim to be doing all kinds of things, such as serving descriptive, deconstructive, or even decorative functions. I am aware of the various ways we meta-theorists might understand ourselves, but I choose to offer a vision that emphasizes the distinctly normative core of meta-theoretical endeavoring. Others are welcome to tell stories that construe meta-theory differently, perhaps as a more recent and poly-focal form of academic activity. I personally prefer to see meta-theory as the continuation by new means of classic philosophical efforts, where highly reflective individuals take responsibility for discursively constructing conceptual innovations aimed at bringing coherence to the state of knowledge for the sake of shaping human history.²

Below I trace the origins of meta-theory to Kant and Hegel, who gave it to Emerson and a host of Young Hegelians on both sides of the Atlantic. Then I profile the meta-theoretical projects of Charles S. Peirce, James Mark Baldwin, Jean Piaget, and Jurgen Habermas, who I characterize as key progenitors of contemporary meta-theory. They all self-consciously appropriated and transformed the philosophical traditions they inherited in order to address the rapidly changing contexts of knowledge production they faced. The results are best understood as meta-theoretical endeavors that are explicitly related to a specific philosophical tradition concerned with the function, role, and purpose of humanity in an evolving universe. A look at Ken Wilber and Roy Bhaskar brings the narrative up to date. This historical reconstruction is

² It may be that I am merely reconstructing part of the lineage of a certain *type* of meta-theory. Perhaps the type of meta-theory I am reconstructing here is better understood as a species of *philosophical* meta-theory, which can be set apart from *scientific* meta-theory (Ritzer, 1991). Or perhaps it should be called, *integral* meta-theory (Edwards, 2007; Esbjörn-Hargens & Zimmerman, 2009; Hamilton, 2008; Lazlo, 2004; McIntosh, 2007; Mascolo, & Fischer, in press; Wilber, 1995; 1999). I have no objections to the idea that what follows is merely a reconstruction of a certain *type* of meta-theory. It may be that what I have in mind is not even meta-theory, but a kind of philosophy. Call it what you will in the long run, I call it meta-theory here for rhetorical purposes. I return to this issue in the conclusion.

intended to remind contemporary meta-theorist of a set of related issues and themes, which I will quickly foreshadow.

The meta-theorists discussed below all address the place of humanity in an evolving universe, each seeking to articulate a way of preserving human reason and morality in a thoroughgoing evolutionary context—including both natural and cultural evolution. This relates to each theory's focus on and the distinctly *normative* nature humanity; that is, they were each out to show that we are the makers and followers of rules, values, and ideals, not just passive nodes in causal systems; we reflectively strive to create what *ought* to be from what *is*. This common focus on the function of the normative in nature appears as one of the ways that meta-theories have kept alive more traditional philosophical and religious themes, including such problems as free will, post-conventional morality, and the possibility of creating radically new and more humane cultural and social conditions. The tie between meta-theory and religious or spiritual visions of humanity seems to be intrinsic. Not only do all the theorist discussed below display long standing interests in religious questions and investigations, their theories were shaped by these concerns as much as others. Moreover, because these theories are so broad and because they take humanity as their focus their content will tend toward areas traditionally the subject of philosophical or religious discourse. So even while meta-theories may not directly address these existential issues, many are intrinsically relevant and are often raised despite the intention of authors to keep them off the table.³

However, as abstract and complex as these theories are they are not “views for nowhere” (Nagel, 1993). All the meta-theorist discussed below offer theories that can account for themselves—they eat their own tails—because they are tied into traditions in psychology and human development that can explain the emergence of meta-theoretical capabilities, in both the individual mind-brain and in communities of inquiry and practice. Beginning with Peirce and Baldwin, meta-theoretical constructs have been reflectively wielded as the most advanced ideas

³ This is not a problem for the meta-theorists discussed here. But it is for some self-declared reductive meta-theoretical positions, such as eliminative materialism (Churchland); systems theory (Luhmann; Wolfram), and the various bio-centric evolutionary syntheses (Wilson). The breadth of these meta-theories results in questions and visions of religious scope and significance, which the authors deal with either awkwardly or dismissively.

around, coming into use only ‘beyond formal operations’ (in what Baldwin called the “super-logical” levels of cognitive development). Since then these kind of constructs have been called: post-formal (Piaget), post-conventional (Kohlberg; Habermas), dialectal (Basseches), 2nd tiered vision-logic (Willber), meta-systemic (Commons), and single principled (Dawson; Fischer).

Developmental psychologists agree that these high-level constructs have particular properties and potentials, two of which strongly characterize all the theories discussed here. Meta-theoretical constructs serve a discourse-regulative function—they emerge from a kind of discursive mastery, which gives way to an ability to reflect on the norms of discourses and pursue new languages for *norming the norms*—this is a basic characteristic of a post-conventional discourse-interventions. Once these constructs emerge they can be re-tooled to serve a general discourse-regulative function: within a single discourse (e.g., discourse-specific meta-theory, like meta-psychology); between discourses (e.g., interdisciplinary meta-theory, like systems theory); or across indefinite discourses, including public and non-academic (e.g., philosophical meta-theory, like Critical Realism or Integral Theory). Post-formal constructs serve as epistemic adjudicators within and between disciplines (this is the meta-critical aspect of meta-theory; or simply *meta-critique*), but they also mediate between the sciences and the everyday communication of the lifeworld—giving humanity new languages with which to understand itself (this is the meta-narrative function of meta-theory; or simply *meta-narrative*).

Meta-theoretical languages articulate norms beyond those set by existing social conditions, including current scientific understandings of nature and the meaning of the evolutionary emergence of humanity. Meta-theorists traffic in constructs that lead beyond both nature and humanity; they provide languages designed to recreate humanity’s understanding of itself. This is discussed below as *the normative function of meta-theoretical endeavors*. Meta-theory has inherited from philosophy the function of providing for humanity’s languages of self-transformation—which is the task of leading humanity beyond itself by re-articulating a shared vision of human nature and the nature of the universe.

Humanity as the emergence of the normative from the natural

We are symbols, and inhabit symbols.... Our expressions, or namings, [or theories,] are not art, but a second nature, grown out of the first, as a leaf out of a tree. What we call nature, is a certain self-regulated motion, or change; and nature does not leave another to baptize her, but baptizes herself; and thus through the metamorphosis again.

—Ralph Waldo Emerson (from "The Poet")

Emerson was not the first to speculate about the function of humanity in nature; but he was one of the most articulate. Beyond merely positioning humanity in the natural world, Emerson offered a vision in which humans have a role to play, a task ordained—a function—in nature. The continuity of human history with natural evolution would become a theme in American philosophy (Schnieder, 1963). Following the influential examples of Herbert Spencer and Auguste Comte, a set of speculative Americanized 'cosmic histories' were articulated by the likes of John Fiske (1874) and Francis Ellingwood Abbot (1885). Lester Frank Ward (1883), the St Louis Hegelians (Leidecker, 2007), John Dewey (1898) and others (Mead, 1936), would all argue that cultural evolution should be understood as being in important ways continuous with cosmic evolution. These early voices, like those of Peirce and Baldwin, toiled in Emerson's shadow. Of course, Emerson toiled in the shadow of Kant, who first tentatively and cryptically suggested that the laws humanity gives itself are best read as an autonomous extension of the self-regulative processes of the natural world. According to this view, humanity's *autonomy*—literally, its self-legislating capability—represents nature's crowning innovation, wherein are found startling advances toward novelty and complexity. Importantly, a capacity for autonomy entails the acceptance of responsibility. This is the root of the notion that humanity is somehow accountable for the trajectory of evolution.

According to the tradition I am reconstructing here—from Kant through Emerson to Peirce, Baldwin, Piaget, Habermas, and Wilber—the function of humanity in nature is a *normative* one. It is a function contingent upon the autonomy of humanity in an evolving world and humanity's reflective knowledge of this situation. This tradition suggests that we are responsible for directing the trajectory of evolution, and we know it (our ought to). Emerson

offered his evocative and ennobling calls for self-determination with this broad context in mind. Kant argued that humanity ought to facilitate the transformation of the *kingdom of nature* into the *kingdom of ends* by proceeding such that the norms of our actions might be fit to serve as universal laws (akin to natural laws). Peirce wrote about it in terms of our having a responsibility to lay down new cosmic habits. These views highlight the directive, regulative, trajectory setting—that is, the *normative*—function of humanity in nature.

This philosophical tradition focusing on the normative function of humanity is where the first meta-theoretical endeavors emerged. Meta-theories emerge, as Peirce's work exemplifies, in order to regulate and oversee whole sets of discourses—serving a normative function vis-à-vis more local, discipline-specific theories and concepts. Meta-theories set the trajectory for broad segments of culture and knowledge production. This saddles the meta-theorist with unique responsibilities.

Along these lines, many of Kant's arguments were set in the context of specific views about the responsibilities of philosophers in the public sphere and beyond. In the final sections of the *Critique of Pure Reason*, Kant (1998, B867) lays out a distinction between two general types of philosophers: scholastic-reductionist and cosmopolitan-comprehensivist. The former perpetuates the fragmentation of knowledge by exercising the power of philosophy in isolated contexts and for partial purposes. The latter embodies a post-metaphysical vision of philosophy wherein the philosopher serves a normative function in the public sphere, explicating the *teleologia rationis humanae*, being a legislator of reason's future, and an immanent catalyst of the *corpus mysticum*. This was some of Kant's motivation when he (1983a; 1983b) articulated one of the earliest and most influential normative global meta-narratives in a series of publications about the history of human civilization and the necessary future emergence of a global governance system.⁴ In its wake Habermas and Bhaskar have both articulated normative global meta-theories concerned with the trajectory of cultural evolution—both trace a lineage to

⁴ For the full scope of Kant's ideas concerning socio-cultural evolution see: Fennes, 1991. For Kant's life and the political complexities and editorial compromises surrounding his radical views see: Cassirer, 1981. And for the contemporary relevance of Kant's cosmopolitan political vision: see Habermas, 2006. Finally, for Kant's views on *normativity*, a concept central to his whole philosophy, see: Brandom, 2009; Korsgaard, 1996)

Kant via Hegel and Marx as well as other 19th century European thought-leaders. It seems Wilber can trace a lineage to Kant via Baldwin, Peirce, Piaget, and Emerson, all cosmopolitan agents building meta-theories to fit normative functions. With this backward glance we are positioned to consider the shape of the meta-theories that came before ours as well as those that are to come.

Peirce's meta-theoretical *modus operandi*

The word *normative* was invented by the school of Schleiermacher But we must trace its introduction into common speech, to Wundt. It is taken from the Latin verb *normo*, to square.... The majority of writers who make use of it tell us that there are three normative sciences: logic, aesthetics, and ethics. The doctrines of the true, the beautiful, and the good, a triad of ideals which has been recognized since antiquity.... Logic is the theory of *right* reasoning, of what reasoning *ought* to be, not of what it *is*. On that account, it used to be called a *directive* science, but of late years the adjective *normative* has been generally substituted.

—Charles S. Peirce (1931 p. 5)

Peirce was a towering but controversial figure on the intellectual scene of his day. He was by any measure a prodigious polymath, with a working mastery of well over a dozen sciences, a mathematician, logician, metaphysician, and an epistemologist. He was one of the few American academics on the world stage during the middle of the 19th century, and was the first American to be elected as a member of an international scientific organization. But he was never able to gain the institutional support and positioning in the American academy that many thought he deserved. Both his personality and the substance of his intellectual contributions made it difficult for him to secure a position. As would be the case for Baldwin two decades later, a scandal forced Peirce to leave John Hopkins University.⁵ And like Baldwin, Peirce was a meta-theorist during a time when it was unacceptable to be one. During the last decade of his life he faded into obscurity, eventually dying in poverty in rural Pennsylvania. He was known as the

⁵ A footnote is warranted about the fact that both Peirce and Baldwin were dismissed from the academy due to sexual scandals. (Baldwin was caught in a club that also served as a brothel; Peirce got a divorce and married a (very) young French woman). But a full discussion of the shadows of these men, the mores of Victorian America, and the complex and personal nature of the academic politics involved would take us too far afield (See: Brent, 1998; Richards, 1987).

greatest genius of his generation to a few (including William James and Theodore Roosevelt), but completely unknown to most.⁶

Yet Peirce toiled away at his work, even as he was starving to death in the Delaware River Valley. He ultimately built what is one of the most profound philosophical systems ever constructed. As Peirce explained it, “[I intend] to make a philosophy like that of Aristotle, that is to say, to outline a theory so comprehensive that, for a long time to come, the entire work of human reason, in philosophy of every school and kind, in mathematics, in psychology, in physical science, in history, in sociology, and in whatever other department there may be, shall appear as the filling up of its details” (Peirce, 2000, p.168). This system has exerted a wide ranging influence, from philosophers like Popper (1966) to linguists like Chomsky (1979), both of whom see Peirce as one of the most significant philosophers to have ever lived. His continued relevance for a wide range of fields outside philosophy, including semiotics (a field which he founded), cognitive science, and computer science, is evidenced by what amounts to an academic cottage industry, where scholarship is burgeoning (see: Misak, 2004).

For the purposes of the story I am telling here, it is important to see that Peirce’s work was a response to the unprecedented transformations affecting academic knowledge production processes in the later half of the 19th Century (Ketner & Kloesel, 1986). On one reading, Peirce’s philosophical system can be understood as a general semiotics, analytically equipped for *overseeing, explicating, and evaluating* different kinds of beliefs at multiple levels—from propositions, to arguments, to discourses. Peirce executes this ambitious project by utilizing a variety of philosophical methods—methods Baldwin would claim exemplify the exercise of aesthetic imagination, or theoretical intuition (what today developmentalists would call *post-formal thought*).

Peirce surveyed a broad expanse of sciences and inductively explicated an evolutionary hierarchy akin to a biological taxonomy (Kent, 1987; Peirce, 1931). He built a system of existential-graphs wherein the relations between propositions are explicated via logically

⁶ For an account of Peirce’s life, which had the plot line of a Greek tragedy see: Brent, 1998.

uniform concept maps (Peirce, 1933; Shin, 2002). He also clarified the intersubjective conditions for the possibility of reliable knowledge production, arguing that inquiry-oriented communication communities must have an open and inclusive structure predicated on trust, honesty, and reciprocity (Apel, 1995; Peirce, 1984a). And of course, as a final example, it is well known that underlying his whole system was a set of three *primordial concepts*—in Kant's sense of being transcendently basic—that he characterized as syncategorematic categories, and once correlated with the three basic pronouns: I, Thou, and IT (Habermas, 1992; Peirce, 1982). In all of these instances Peirce was out to build meta-theoretical constructs that could play a role in adjudicative processes concerning the value of our cognitive wares.

Moreover, Peirce positioned his discourse-regulative project atop a broader evolutionary vision of the universe where the strivings of humanity are continuous with the evolution of the cosmos (Peirce, 2000; 1934; Esposito, 1980; Hausman, 1993). Peirce articulated a sophisticated and empirically grounded evolutionary ontology where all events are semiotic processes that co-evolve toward increasing complexity, autonomy, self-awareness, and possible harmony. Peirce's *pansemiotic* evolutionary theory was a unique (post-metaphysical) view in so far as it was explicitly offered as a hypothesis amenable to correction in light of forthcoming empirical data. It greatly influenced Whitehead (1978) and continues to intrigue and inspire scholars in the physical and biological sciences (Prigogine & Stengers, 1984) and philosophy (Apel, 1994).

This understanding of evolution allowed Peirce to bring his overarching normative concerns about the trajectory of academic discourses in line with a venerable philosophical tradition that articulated the radical significance of humanity's cultural endeavors in terms of a cosmic evolutionary unfolding. Ultimately, Peirce, with a look in Kant's direction, envisioned humanity as capable of multitudinous self-correcting intellectual and ethical endeavors, which ought to result in an ideal communication community coterminous with the cosmos. In this post-metaphysical eschatology, the ideals of *harmonious love between all beings* and *unconditional knowledge about all things* stand as goals to be approached asymptotically. With this thought

Peirce rearticulates a philosophical motif that can be traced back through Emerson, Schelling, and Kant to the obscure cipher of Bohme's mystical Protestant religiosity and its ancient Hebraic and Neo-Platonic roots.

Baldwin's meta-dictionary and his views of the higher stages

We see experience establishing, of itself, a synthetic mode of apprehension. To our mind, the course of the history of thought makes it plain that the quest for such a mode of experience presents the only hope of a lessened strife among points of view; for in such a mode of process evidence would be present to show that the entire system of experience is expressive of reality, and that only in the organization of the whole are the respective roles of this and that function to be made out. [Thus] the need of carrying out to their legitimate outcome all the hints that consciousness gives as to its unreduced and undivided epistemological calling. [This calling] does not deny the epistemological value of any of the mental functions, or the force of any of the theories which are based respectively upon one or other of the functions; on the contrary, its aim is to discover the synthetic adjustment of their claims with the larger whole.

—James Mark Baldwin (1915, p. 226)

James Mark Baldwin was a massive figure on the intellectual scene of his day. During the height of his influence he was mentioned in the same breath as William James, John Dewey and Pierre Janet, on both sides of the Atlantic. He was arguably the most significant American psychologist of the 19th Century—while James gave psychology a face, publishing the indelible *Principles of Psychology*; Baldwin gave it legs, institutionalized it, building labs and starting journals. His writings were widely cited, translated into many languages, and several of his books were considered as standards in the field.⁷ And though his theories have had a lasting impact on a variety of areas—from developmental psychology (Kohlberg, 1981; Piaget, 1932) and psychoanalysis (Lacan, 1977) to evolutionary biology (Weber & Depew, 2003), evolutionary epistemology (Campbell, 1987), and integral theory (Wilber, 1999)—he is not the household name he once was.

Given his former stature and the continuing relevance of his ideas, many have speculated about the reasons for his present obscurity (Broughton & Freeman-Moir, 1982). A scandal did leave him blacklisted in American academia, and his departure did clear the way for

⁷ For an account of Baldwin's life and work see: Boring, 1922; Richards, 1987; Wozniak, 2001.

behaviorism, as John B. Watson assumed control of Baldwin's prestigious faculty position and numerous journal editorships (see: Wozniak, 2001). However, Baldwin did continue to write prolifically while exiled in France, was eventually elected a foreign correspondent to the French Academy (the highest honor that can be given to a non-citizen), and then bestowed the Legion of Honor for his charity and relief work in France during World War I. The standard story is that institutional rearrangements and broad changes in the academic *Zeitgeist* secured his fate as a footnote in the history of psychology. There is certainly a moment of truth in that account, but there is a deeper reason for Baldwin's neglect, I believe. It has to do with the fact—and the parallels with here Peirce are remarkable, as I will show below—that he was doing meta-theory when it was unacceptable to do so.

His later works are nearly universally considered to be obscure, speculative, and worthless to contemporary psychology (Boring, 1922; Richards, 1987; Weber & Depew, 2003; although see: Broughton & Freeman-Moir, 1982⁸). This is, I believe, because these works (Baldwin, 1911, vol. 1-3; 1913, vol. 1-2; 1915) unlike his earlier works (1895; 1897) are not offered in the spirit of experimental psychology. Baldwin's later works are offered as meta-theoretical interventions, aimed at organizing the existing state of discourse in the human sciences, biology, and the humanities into a common framework, a *comprehensive developmental theory of reality*.

Baldwin's moves beyond psychology toward meta-theory were undoubtedly catalyzed by his work as editor of the *Dictionary of Philosophy and Psychology* (Baldwin, 1905).⁹ The *Dictionary* stands as one of the most impressive trans-national scholarly efforts ever. Explicitly comprehensive in its ambitions, its four massive volumes cover the majority of academic knowledge that existed at the turn of the last Century. It contains contributions from hundreds of academics on well over a thousand topics, serving as a veritable *who's who* and *what's what* for the 19th Century academy. The *Dictionary* remains unrivaled as a scholarly achievement in

⁸ Yet even Broughton only really pays attention to the first volume of Baldwin's three-volume *magnum opus*.

⁹ For an account of how profoundly the project affect Baldwin's thought see: Wozniak, 2001.

certain respects—getting a remarkable amount of knowledge under one roof, with attention to codifying common terminology and efforts at clarifying the structure of the epistemological relations between the disciplinary perspectives in play. And Baldwin oversaw the entire project, making emendations or substantial contributions to almost every entry.

Importantly, the ambitious encyclopedic effort coincided with Baldwin's appointment to John's Hopkins University, the first modern research university in America. This was a dynamic time in the history of academic institutions (Cremin, 1988; Kerr, 1963; Menand, 2010). The sciences began to gain hegemony and the disciplines were subdividing and multiplying at a dizzying rate. No student of 19th Century thought can ignore the profound and pervasive impacts resulting from the professionalization and concomitant departmentalization of knowledge production in the years immediately preceding the publication of Baldwin's *Dictionary*. It was in these years that the academy began to assume the shape it has today, with a vast array of siloed, specialized disciplinary areas. It is hard to see Baldwin's *Dictionary* as anything but a response to what was becoming an increasingly fragmented and sprawling intellectual landscape, an unprecedented academic landscape he found himself in the middle of at Johns Hopkins.

But while he was in the middle of it institutionally, he was also in the middle of it theoretically, as his interests turned at this time toward articulating a meta-theoretical developmental epistemology. He moved beyond the focused experimental orientations that characterized his earlier psychological works. Baldwin began to construct an overarching model that could account for the wide variety of knowledge he was compiling for the *Dictionary*, the various types of validity-claims, and the related methods of investigation. Moreover, it was a model that would ultimately account for his *ability* to organize this knowledge, providing an account of the genesis of meta-theoretical constructs as high-level emergent products of cognitive developmental processes. From where I sit it is critical to see—although it is often overlooked—that the publication of the *Dictionary* immediately preceded Baldwin's work on *Thought and Things* (1911, Vol. 1-3).

In *Thought and Things*, the *magnum opus*, he offers a *convergent view* of human epistemological development, putting forward a model in which the higher-stages are mainly integrative and reconciliatory—functioning to transcend the dualisms and differentiations carefully and necessarily built up as the child develops in relation to culture and nature. Baldwin suggests that psychological growth is best thought of in terms of different *lines or domains of development*, which he refers to as *developmental modes*. Each mode is a relatively distinct skill or capacity, exercised in relation to different aspects of reality. Modes cluster together because they have similar external *controls*, thus forming distinct object domains. Different disciplines, methods, and their related validity-claims can be organized in terms of differential mode-recruitment profiles. And at a more abstract level this same strategy provides Baldwin with a way to build a system of epistemological categories. At its highest reaches the model contains a central division between *logical* and *practical* modes—a distinction that retrofits Kant's differentiation of *theoretical* and *practical* reason. This is the difference between science and morals, between objectivity and inter-subjectivity; I-It set apart from I-Thou-We. For Baldwin (and others, e.g., Piaget, Habermas, and Wilber), the two most basic modes of development are those that cluster around objects (I-IT; objectivity) and those that cluster around people (I-Thou-We; intersubjectivity/subjectivity).

In any case, late in the life course, according to Baldwin's model, these different lines reach a point of complexity and divergence such that they call for the creation of a specific type of new concept, built to transcend but include the differences between the logical and the practical—to reconcile science with the perspectives of the lifeworld. New constructs emerge and begin serving a discourse-regulative function—overseeing, organizing, and regulating whole fields of discourse. With a nod to Kant, Baldwin characterizes this emergent developmental capacity as the *aesthetic imagination*. In Baldwin's words:

The outcome of our investigation, broadly stated, is that in the aesthetic imagination... *the processes of experience [can] come together after having fallen apart*. Each of the cognitive modes [i.e., lines]...sets up, as is its nature to, a reference in which *the real for it, its real, is found*. But in each case *its real*, not *the real*, is postulated or presupposed, since the control that

is discovered is the outcome of this or that special mode and stage of psychic function. The protest of the aesthetic imagination is against just this partialness of each of the modes of "real" meaning. Its own ideal, on the contrary, is one of completeness, of reunion, of *reconciliation*; it gives us the "real" which is absolute in the sense that its object is not relative to, and does not fulfill, one type of interest only to the exclusion of others (Baldwin, 1911, vol. 3 p,13).

In Baldwin's model the aesthetic imagination emerges during the course of late-stage cognitive and socio-moral development. It leads to the construction of a variety of *trans-logical* and *trans-practical* constructs. These constructs function across multiple domains and disciplines to oversee, integrate, and regulate important reconciliatory syntheses. For example, Baldwin states that at this stage the individual begins to yearn for views that overcome the distinctions between mind and body, theory and practice, and the ideal and the actual.

Most relevant to this discussion is what Baldwin called *theoretical intuition*, a name he gives to what results when the aesthetic imagination is exercised in the domain of theoretical or logical pursuits, such as science. As Baldwin describes, "By theoretical intuition is meant the immediate apprehension or perception of rational principles as such, these principles being looked upon as constitutive or regulative of knowledge" (Baldwin, 1911 vol. 3 p. 234). Thus, according to Baldwin's developmental model, whole theories, methods, and discourses come to be regulated by the products of late-stage psychological growth. A capability comes online that allows for the creation of meta-theoretical constructs that serve a normative function.

This way of understanding the higher reaches of human epistemological development would buoy Baldwin's continued meta-theoretical endeavors, most notably his ambitious attempt at building a *comprehensive developmental theory of reality* (Baldwin, 1915). According to this vision, human experience, as elaborated through cultural evolution, is the apex of cosmic evolutionary development, giving a unique significance to our moral, epistemological, and for Baldwin most importantly, our aesthetic strivings. For Baldwin, with homage to Kant's third *Critique* and the Romantics it inspired, it is in the reconciliatory immediacy and world-disclosing power of aesthetic experience that the fullness of reality is revealed, transcending but including all the partial modes of experience built up over the course of biological, cultural, and individual

evolution. Thus do the aforementioned *aesthetic imagination* and its *theoretical intuitions* function to guide the trajectory of cultural evolution. And so the function of humanity in the natural world is a normative one—to redeem, reconcile, and resuscitate the full reality and meaning of the universe. But this is getting ahead of our story.

For now it should be noted that Baldwin's theorizing ate its own tail. He offered a theoretical account of the very cognitive processes that he recruited in his meta-theoretical endeavoring. He argued that meta-theoretical constructs, which organize and regulate whole discourses and theories, were a necessary outgrowth of epistemological development. I pointed out that he began his forays into meta-theory after executing a massive project that got him intimately acquainted with the full range of knowledge production processes then extant. So Baldwin's story teaches that the emergence of meta-theory involves an *ability* to reflect on a range of knowledge production processes and recognize that they need regulating, organizing, and direction setting. This ability was inimitably exemplified by Charles S. Peirce, who faced the same unprecedented academic environment as Baldwin, and who also took the meta-theoretical high road. It is also an ability exemplified in the work of Jean Piaget, who was directly influenced by Baldwin's meta-theoretical endeavors.

Piaget's comprehensive structuralism: between the natural and the normative

So we can speak of self-regulation, but only at the risk of its being confused with life itself.

-Piaget, (1971a p.148)

Near the end of Chapman's (1988) *tour de force* on the development of Piaget's thought he suggests that Piaget be ranked among those who articulated perspectives that gave new meaning to human life in the context of evolutionary change. He mentions several thinkers with comparable visions, including Bergson, Teilhard de Chardin, Jantsch, Waddington, Polanyi, and

Whitehead. To this list could be added, J.M. Baldwin, C.S. Peirce, Aurobindo, and Wilber. The common denominator here is not a shared worldview (although their views are similar, there are important differences) but rather a shared ambition to reposition humanity in relation to our growing fund of scientific knowledge about the natural world.

Piaget first grappled with this ambition as a young man when he drafted an autobiographical novel, *Recherche*, confessing his desire to foster the integration of religious values and scientific knowledge (see Piaget, 1977, for a partial translation). He approached the problem in terms of two related sets of concerns. On the one hand, he offered a principled classification of the sciences with the intention of organizing knowledge and ensuring interdisciplinary quality control. On the other hand, he offered a provisional but comprehensive explanatory framework involving evolutionary processes thought to regulate the development of both the natural world and of human cognition and civilization. He would later chide himself for his "adolescent metaphysical speculations" (Piaget, 1952) and as he began work in psychology his concerns about the integration of science and religion faded.¹⁰ However, the broad research program he outlined in his youth remained intact (Smith, 2002; Chapman, 1988). His principled classification of the sciences reappears repeatedly in his work, largely unchanged (e.g. Piaget, 1971b; 1970c). As does his desire to articulate a comprehensive explanatory framework involving developmental processes that cut across biological, psychological and epistemological perspectives (e.g. Piaget 1972; 1971). It was in his early twenties when Piaget began reading Baldwin. He even labeled his research program after Baldwin's: *genetic epistemology* or *genetic structuralism*' although, a more descriptive heading might be: *comprehensive developmental structuralism*

¹⁰ Although see Chapman 1988, p.68-73 where Piaget's mature religious views are reconstructed out of a series of topical essays Piaget wrote in the late 1920's, revealing a system of beliefs similar to those espoused in his youth, e.g. "immanentism.... The tendency toward higher forms of organization provides humanity with higher values... God is identified with *directionality* and our striving to realize the ideal... thus to struggle for the good and the true...is to collaborate with God." See also, p.432-437, where Chapman suggests that Piaget's religious views continued to serve as a real source of motivation throughout his life.

Piaget's early reflections on the organization of different methods took off from Comte's famous classification of the sciences. However, where Comte saw a strict hierarchy of relationships between the sciences, with mathematics at the bottom, physics in the middle, and sociology at the top, Piaget saw a "circle of sciences" bound together via symbiotic relations. Physics is not foundationless; to insure quality control it must engage in epistemological reflections of a logical-mathematical type. Epistemology in turn requires psychology and sociology to remain grounded and these must be in dialogue with biology. And of course, biology shades into physics, which as already noted, is not foundationless. And so the circle of sciences closes back in on itself. This may appear like a vicious circle, but Piaget construes it as a spiral, with the different sciences progressing in concert and collaboration. This basic view would serve Piaget for the rest of his career. But as we will see below, what began as a speculative endeavor would end up as a methodologically sophisticated stance about the nature of interdisciplinarity, grounded in a synoptic view of the intellectual landscape. For now we should note the systematic place he gave to normative considerations (i.e. epistemology) and the intimate relations between those considerations and psychology, and in turn between psychology and biology.

Alongside these reflections about methods Piaget also began to sketch an ambitious explanatory framework targeting ubiquitous evolutionary processes common to both biological life and the life of the mind. With reference to Bergson and Aristotle, a young Piaget laid out a proposal for a science of "forms" that would traffic in extremely general models of self-organization and development. Roughly, this would be a science offering explanations predicated upon the continuity of life and mind and capable of explaining the forms of intellectual development in terms analogous to the forms of biological evolution. Even at this early juncture Piaget identified equilibration as a process fit to this task. Biological life and evolution are governed by a tendency towards equilibration between organism and environment. This same tendency characterizes the life of the mind as it develops toward an equilibration between subject and object. Thus models of equilibration processes should have

great explanatory power, cutting across biological, psychological, sociological, and epistemological perspectives.

It is no secret that equilibration processes maintained a central place in Piaget's explanations of cognitive development. What is less well known is just how much explanatory power he attributed to this concept. In fact, he never really relinquished the bold hypotheses of his youth. He always maintained that certain very general explanatory constructs could be used to explain the evolution of biological organisms and the development of intelligence at all levels. However, what began as a set of metaphysical beliefs about the continuity of life and mind and the directionality of evolution itself would end up as a grounded meta-theoretical stance informed by a variety of interdisciplinary endeavors. As explored below, these trans-disciplinary meta-theoretical constructs exemplify Baldwin's highest-level of *theoretical intuition*, and like Peirce's philosophical architectonics, they serve a discourse regulative function.

Before going on to discuss Piaget's mature views a few things should be noted about the musings of his youth, which centered around creating a new discourse capable of positioning human values and norms in the natural world. In particular, Piaget was looking to resolve a crisis of faith that left him torn between the knowledge endorsed by scientific worldviews and the strong ethical convictions that are the fruits of religious beliefs. His solution was a complex view of evolution in which human cognition and civilization could be understood as the creative and autonomous extensions of universal developmental processes. According to such a view we can in some ways identify the ideals we strive for, be they truth or justice, with the trajectory of evolution in general.

But Piaget's vision was as far from a crude teleology as it was from reductionism. As his principled classification of methods makes clear he was careful to differentiate the natural from the normative, even while he posited their continuity. This differentiation entails, strictly speaking, that questions concerning normative issues (such as those in epistemology and in some psychology) cannot be addressed by methods devised for explaining and describing natural phenomena, and vice versa. He was indeed looking for a single comprehensive

discourse (his proposed "science of forms") but he was not looking to expand biological categories beyond their proper range of application or to bring mental and normative categories to bear in explaining things best explained by the natural sciences. Thus he was looking for a kind of *tertium quid* (Smith, 2002), a kind of third discourse capable of transcending but including the differentiation of the mental and the physical and the natural and the normative. This ambition played out in his mature views in terms of a comprehensive developmental structuralism, which was a radically interdisciplinary endeavor.

In the late 1960s Piaget was involved with UNESCO's ambitious efforts to characterize the nature and status of interdisciplinary endeavors worldwide. Out of these efforts he produced a trio of slim volumes (Piaget 1970a; 1970b; 1970c). In my mind this work represents his most concerted attempt at elaborating the epistemological structure of interdisciplinary knowledge production. And in these three books we find the 'circle of sciences' he elaborated in his youth reconstructed and justified in relation to a wide variety of considerations. In effect he offers a series of complex reflections, both sociological and philosophical, on what different methods and approaches have to offer, on their points of convergence, and their contrasts.

In particular he lays out principled arguments about important and fundamental similarities between explanatory models from very different disciplines (e.g. dynamical systems modeling), while at the same drawing clear distinctions between certain broad knowledge domains (e.g. the human sciences and the natural sciences). This is the same tension that characterized the speculations of Piaget's youth. Key differentiations between distinct domains and methods are subsumed within a broader vision of unity. This unity is conceived in terms of certain universal developmental processes, which unfold differentially across distinct domains, from the biological to the psychological and epistemological.

Unfortunately, the framework Piaget lays out in these three books is difficult to grasp. His writing is always more evocative than it is explicative. So I offer one reading and do not claim to have crafted a definitive exegesis. At a very general level, Piaget makes distinctions between three broad approaches: Biology, the Human Sciences, and Philosophy. These are rough

divisions that refer to deep epistemological issues that Piaget struggles to make clear, and they reflect the basic categories outline by Peirce and Baldwin. In establishing these meta-theoretical distinctions (and their discourse-regulative function) he appeals to philosophical debates surrounding certain primordial epistemic (and methodological) differentiations: understanding vs. explanation (1970c); natural sciences vs. human sciences (1970c p.60); descriptions vs. prescriptions (1970a p.53); causality vs. entailment (1970b p.18). Broadly speaking he was characterizing the difference between the *natural* and the *normative*.

Both the natural and the normative are the general categories that must be subsumed by a truly comprehensive developmental structuralism. Thus, echoing his early desire for a "science of forms" common to life and mind, Piaget suggests that there are dynamic developmental processes that cut across both categories. Where he brings his own work on the dynamic development of structures of intelligence into view alongside work concerning processes of self-organization in biology and we begin to see the contours of his proposed framework. Appealing to Waddington and von Bertalanffy, Piaget notes the wide applicability of models that represent structured and self-regulating wholes. Dynamic systems models in biology offer formalized structural accounts of the regulations and interactions between organisms and environments. These models are remarkably analogous to the models Piaget produced to explain processes of intellectual development. However, and this is a crucial point that is often overlooked, these types of models are analogous, not identical.

Piaget uses a nuanced account to differentiate dynamic systems models suitable for biological science from dynamic systems models suitable of use in studying human cognition and society. The point is that when we model cognitive processes we must often appeal to explicitly followed and interpreted rules, values, and signs, whereas when we model biological processes we can make no such appeals. It is useful to see this difference in terms of the status and role of norms in behavior and cognition. Rules, values, and signs can be appealed to in the explanation of norm-laden behaviors and cognition because they are reflected upon as such by the organism being studied. When we observe a child making a judgment we have before us a

normative fact. The child follows a rule that is deemed valuable and that will eventually be amenable to explicit statement, revision, and reflection. As Piaget explains:

The term "normative facts" has been happily introduced in to the general vocabulary...to describe that which constitutes a norm for the subject and, at the same time, an object of analysis for the observer engaged in studying both the behavior of the subject and the norms he recognizes.... [For example] normative facts are studied in genetic psychology when the question is to discover how subjects who were originally insensitive to certain logical norms come to regard them as essential through a process depending partly on their life in the community and partly on the internal structure of the action envisaged (Piaget, 1970c p.8-9).

This distinction between normative facts and natural facts is crucial. Biological structures and functions are not like the 'normative facts' that confront us when we study human cognition and behavior. When we study the regularities a paramecium's reaction to its environment we have before us a natural fact. The structural, functional, and informational antecedence of the paramecium's behavior are not understood or reflected upon by the paramecium itself. Natural facts are those that can be understood irrespective of the intensions and consciousness of the thing being studied. This distinction between normative facts and natural facts relates back to the primordial epistemic (and methodological) differentiations noted above: e.g. natural sciences vs. human sciences; causality vs. entailment.

Piaget's big point is that normative facts (e.g. acts of judgment), natural facts (e.g. regularities of reaction), and everything in between are best explained in terms of dynamic self-regulating processes that maintain wholeness, facilitate emergence, and tend toward equilibration. Thus, as noted above, the comprehensive developmental structuralism Piaget has in mind would be composed of dynamic and developmental explanatory constructs that generate isomorphic theoretical models in the physical, biological, and human sciences. Equilibration is thus an explanatory construct that ties the development of human cognition and civilization to the evolution of life itself; what catalyzed it catalyzes us. And so the radical hypothesis of Piaget's youth looms large in his mature vision.

And yet Piaget emphasizes the "isomorphism"—not identify—between models of equilibration across the different domains. He tempers his unifying thrust with cautions about both reductionism, i.e. "the tendency which consists of suppressing the original characteristics of the higher order and reducing them...to the processes of the lower orders" (Piaget, 1971 p. 39), and projection, i.e., "the tendency which leads people to project onto the phenomena of inferior orders the characteristics of phenomena of the higher orders" (Ibid, 38). Thus, despite instances where he offers an ontology of process and development, he never entirely neglects the reflective engagement with methodological perspectives that framed the categorical distinctions traced above.

In the end, I read his claims about the isomorphism of models across the natural and the normative as attempts to suggest the existence of certain ubiquitous evolutionary processes, ones best thought of as universal "forms" governing the development of the entire universe. But he never exactly puts his metaphysical cards on the table. Although, I think he does prophesize a single unified discourse fundamentally geared into these primordial developmental processes (Piaget, 1971d). One gets the impressions that Piaget takes the variety of structuralisms he inventories in his interdisciplinary reflections as harbingers of some single structuralism that would disclose the formal structure of all things. We have seen that Piaget's vision of a comprehensive developmental structuralism remained remarkably consistent over the course of his career. As it was progressively refined its most general contours become clear.

Piaget argued that developmental processes are ubiquitous (from mind and life, to matter and energy), so that they must be categorized in terms of the different ways in which they can be understood. The *natural* and the *normative* signify a set of epistemologically deep-seated distinctions that can be used to categorize different types of methodological perspectives. Piaget suggested we might hope for the emergence of a discourse geared into the primordial developmental processes that cut across these different perspectives. Paralleling the possibility of a unified discourse explaining all developmental processes, he also suggested we pursue a certain type of interdisciplinarity. With Piaget's comprehensive meta-theoretical

discourse-regulative constructs serve as meta-norms, which can guide us toward the construction of more adequate interdisciplinary research programs. The key to this claim is the insight that we must find some way to systematically deal with normative issues in human development (Smith & Voneche, 2006; Wilber, 1999; Habermas 1990; 1984; 1987).

The the lesson here is less about Piaget's speculative claims and more about his indefatigable desire to find a place for the normative in nature. There are a variety of meta-theoretical orientations that lean heavily on dynamic systems models and emphasize the primacy of context and dynamism over mechanistic forms of reductionism (Overton, 1998; Lazlo, 1972; Mareschal et al, 2007). These are great; but they don't deal with the normative. Understanding an obligation (either epistemic or ethical) entails accounting for both its (normative) necessity and its (natural; e.g., reliable) efficacy and impact. The latter involves causal regularities of the human brain and accompanying socialization, but the former involves concerns about the validity of the obligation itself. Irrational obligations cannot be necessary despite whatever rhetorical efficacy and impact might result from their social currency, while rational obligations are necessary and binding despite social pressure to the contrary.

If the only categories we have are the objective ones offered by systems theory, how do we make distinctions between what *is* and what *ought* to be? The goal of equilibration between organism and environment must itself be justified when discussing human development in cultural and social contexts. Post-conventional moral identities are worthy of pursuit but not because they bring persons into an equilibrium with surrounding cultural expectations. As Habermas (1987) has made clear, the major liability of dynamic systems approaches in the human sciences is their inability to deal with the full complexity normative issues. And like Piaget, he suggests that this inability is built into the basic methodological perspectives on which they rely.

Habermas's critical and comprehensive developmental structuralism

[Post-modern capitalistic social structures] have evidently found some functional equivalent for ideology formation. In place of the positive task of meeting certain needs for self-interpretation by ideological means, we have the negative task of preventing holistic self-interpretations from coming into existence.... *Everyday consciousness* is robbed of its power to synthesize; it becomes *fragmented*.... The attempts at an *Aufhebung* of philosophy and art were rebellions against structures that subordinated everyday consciousness to the standards of exclusive expert cultures developing according to their own logics... Everyday consciousness sees itself thrown back on traditions whose claims to validity have already been suspended; where it does escape the spell of traditionalism, it is hopelessly splintered. In place of "false consciousness" we today have a "fragmented consciousness" that blocks enlightenment.

—Jürgen Habermas (1987, p.355)

Growing up reading American mass-produced copies of John Dewey in post-war Germany while learning of government sanctioned genocide in real time over the radio, Habermas was predisposed to being concerned about the relations between evolutionary thought and the normative foundations of democracy. Habermas wrote his dissertation on Schelling and the problem of free will, and through a friendship with the great Kabbalistic scholar, Gershom Scholem, he undertook extended considerations of the Lurianic theological principles of *tsim-tsum* and *tikkun*.¹¹ "Again the echoes of Jakob Böhme can be heard in this normative view of cosmic evolution that has long been the esoteric core of Marxist theories about cultural evolution (Kolakowski, 1978). Like Piaget, mystical themes stay mostly dormant in Habermas's social-philosophy. However, in his most recent work, Habermas has returned to questions about free will, evolution, and the role of faith and religious practice in private life and the public sphere (Habermas, 2008).

Habermas's project has always been meta-theoretical, aiming for an interdisciplinary problem-focused approach for understanding human normativity—positioning human agency as

¹¹ Consider the fluency and power of Habermas's exegesis of Scholem's exegesis of the great Hasidic Master Isaak Luria: "The question of how evil is possible at all in a world created by God can only be given coherent formulation when we... take it back into the origin of the divine life-process itself. This is what Luria's original idea of the *tsim-tsum* achieves. God, who in the beginning is everything, withdraws into himself... through this initial contraction there arises... a nature [or evolution] of God, a knot of willfulness and a sense of I-ness (egoity). The polar tension between this dark ground in God and His radiating love already determines the ideal process of creation and evolution, which occurs in god's body and thought.[The light of God] which has been poured out and disappeared must be raised up again to its legitimate place or origin. The resurrection of restitution of the original order—the *tikkun*—would finally have reached its goal with the creation of the second...creation [which] emerges from the inner depths of God in and continues in the external history of the world" (Habermas, 2002 p. 143).

a unique factor in natural and social systems. Beginning with *On the logic of the social sciences* (1988/1967), Habermas engages in a philosophical critique of existing research projects in the social sciences and looks toward a synthesis between *causal-natural* and *hermeneutic-normative* methods of understanding human agency. Deepening this interdisciplinary meta-theory of society, *Knowledge and human interests* (Habermas, 1971/1968) has the same goal of positioning humanity in both the nature of the biosphere and the “second nature” of social systems created and maintained by humans. A meta-theoretical set of “anthropologically deep seated human interests” are taken directly from Peirce’s philosophy of science, Dilthey’s hermeneutics, and Freud’s psychoanalysis. These distinct meta-theoretical orientations—natural science of control and prediction (Peirce); historical understanding of self-clarification and intergenerational transmission (Dilthey); normative discourse of diagnostic self-objectification and healing (Freud)—these basic knowledge constitutive interests are potentially complimentary and mutually supportive. They are each true but partial—no one meta-theoretical orientation covers all basic human interests. This means that if one is taken out of portion (as the sciences of control and prediction have been in the post-industrial West) then a distortion of culture and the intergenerational transmission of the lifeworld results. As a project in “methodological self-clarification,” this early period is an underlaboring for the meta-theoretical framework that emerges in Habermas’s latter writings, which provides a critical theory of our current historical moment.

Legitimation crisis (1973/1976) begins Habermas’s use of developmental structuralist models, including Luhmann’s dynamic systems models of society and Piaget’s developmental epistemology. The goal in this first work of the middle period is to recast a Marxist theory of cultural evolution in terms of modern system dynamics and advances in the social sciences. The central concepts are offered as a discourse-regulative intervention, especially the distinction between *system* and *lifeworld* as meta-theoretical orientations to understanding society. The lifeworld is about the “inside” of human society, it is the culture as it is experienced, as replete with norms, values, selves, and linguistically mediated mutual-understandings. The

system is different, it is functional-strategic and does not require participation in shared norms and values, it requires only that a limited range of rules be followed in order to simplify relationships along technical lines. Examples of this are markets, as well as bureaucratic hierarchies in the military or corporation. The system runs on proxies of consent (money, bureaucratic power); the lifeworld runs on actual consent, from shared ideals guiding communicative action, to simple mutual agreement about the meaning of words or the basic requirements of logic that are a presupposition even of disagreement (Cooke, 1997).

The system-lifeworld distinction is at the heart of Habermas's middle period, which includes his two-volume master work, *The theory of communicative action* (1984; 1987). It is in this work that the full normative thrust of Habermas meta-theoretical project is revealed as a system of trans-disciplinary investigations into the very nature of human communication—especially non-institutionalized forms of legitimate power and communicative action. The result is a comprehensive developmental structuralism focusing on a set of primordial communicative conventions and presupposition of discourse, such as the primordially perspectival parts of speech: I/We/IT; and the distinction between theoretical-instrumental reason and practical-communicative reason. These are all used as broad orienting meta-theoretical constructs in a discourse-regulative reconstruction of the emergence and continued evolution of modern and post-modern socio-cultural totalities.

Similar to Piaget's models, which Habermas uses throughout this middle period, meta-theory becomes a dynamic structural and developmental approach that differentiates and clarifies the normative aspects of human behavior, thought, and agency. Like Peirce, Habermas also builds a principled framework of basic philosophical categories that can be used as a kind general semiotics (or what Habermas calls a formal-pragmatics of communication).¹² This is a meta-theoretical system analytically equipped for *overseeing, explicating, and evaluating* different kinds of beliefs at multiple levels—from propositions, to arguments, to discourses.

¹² Habermas (1976) draws the line from his formal pragmatics through Chomsky's Universal Grammar to the various universal, formal, and philosophic/logical grammars articulated by Peirce as part of his General Semiotics.

But there is more to Habermas's meta-theoretical *modus operandi* than this highly formal meta-theory of human communicative action. The system of categories he uses enables a critique of existing conditions. *Between facts and norms* (1996) applies the meta-theoretical constructs from Habermas's theory of communicative action to the state of legal theory and the state the normative discourses that continue to work with the principles of and practices of democracy. One central mechanism by which the "system colonizes the lifeworld" is through intensive processes of justification that re-regulate forms of social life traditionally regulated through lifeworld consensus-based value-intensive mechanisms. From health care to education, the expansion of human service industries in post-industrial society has led to regulatory agencies that increasingly translate the problems of the lifeworld into the vocabulary of system. Generally, instead of the pursuing the institutionalization of forms of political discourse free from domination that might legitimately guide our joint future, post-modern social systems are regulated by the imperatives of system maintenance and efficiency.

In his most recent work Habermas further defends and clarifies human normativity, using meta-theoretical constructs to regulate and guide the scope of validity of different disciplines. As the human sciences expand their reach, they make claim to more and more of the lifeworld's so-called "folk-psychology." Habermas (1988; 2007) has suggested that in many cultural groups models from the human sciences have supplanted traditional (religious) languages of self-understanding. Unlike models in the physical sciences, which affect the lifeworld eventually mainly in the form of technological innovation, the human sciences affect the lifeworld directly by shaping the action-orienting self-understandings of individuals. Habermas argues that those who produce knowledge in these fields should consider the fact that the scientific languages they create become available to function as resources for identity construction. For example, radically counterintuitive, fragmented, and reductionist scientific accounts are *irresponsible* (not just wrong) in so far as the likelihood of their being adopted as self-descriptors is high and the appropriateness of their serving this function is low. This is not an argument against bold hypothesis generation and materialist research programs in the human sciences, nor is it an

argument against increasing the scientific understanding of human beings. It is an argument against a form of scientism that aims to systematically contradict deep-seated aspects of the self-understanding of the species. Irresponsible scientific generalizations run the risk of undermining the language games enabling autonomous ethical agency and human dignity (Habermas, 2007). The concerns Habermas expresses have to do with the premature conclusions and promissory notes of a burgeoning but still immature neuroscience. This is a field that has been remarkably attractive to the popular media. It is affecting legal discourse and practice, education, and marketing, while at the same time generally shaping the way large numbers of people understand their behaviors and relationships (Kagan, 2009; Stein, de le Chase, Fischer, Hinton, 2010).

Habermas clarifies the role of meta-theorist as an adjudicator both between different sciences and between the sciences in general and the complex discourse of the lifeworld. This orientation toward crafting a reconciliation between the scientific disciplines and between these disciplines and the lifeworld is a signature of Habermas's philosophical meta-theory. The idea is most clearly stated in an essay from his middle period (that happens to make extended references to Kant, Piaget, and Peirce):

The compartmentalization [of knowledge] constituting as it does a hallmark of modernity... poses problems. First how can reason, once it has been thus sundered, go on being a unity on the level of culture. And second, how can expert cultures, which are being pushed more and more to the level of rarefied, esoteric forms, be made to stay in touch with everyday communication.... Reaching understanding in the lifeworld requires a cultural tradition that ranges across *the whole spectrum*, not just the fruits of science and technology. As far as philosophy is concerned, it might do well to refurbish its link with the totality by taking on the role of interpreter on behalf of the lifeworld. It might then be able to help set in motion the interplay between the cognitive-instrumental, moral-practical, and aesthetic-expressive dimensions that has come to a standstill today like a tangled mobile (Habermas, 1999 p. 18; emphasis in the original).

These integrative and reconciliatory tasks look a lot like the tasks characterizing Baldwin's highest-levels of human development, which he thought were populated by integrative constructs of the aesthetic and theoretical imagination. Like Peirce and Piaget, Habermas executes this ambitious project by utilizing a variety of philosophical methods—methods

Baldwin would claim exemplify the exercise of aesthetic imagination, or theoretical intuition, and which Habermas self-consciously recognizes as *post-formal thought*. Habermas (1999; p. 8) has his meta-theory eat its own tail as he positions the cognitive operations necessary to produce it in terms of Piaget's theory of cognitive development. With post-formal operations comes the possibility of taking on the meta-theoretical task of regulating the evolution of whole discourses and large swaths of culture—of creating a new language and framework with which to *norm the norms* of discourse-specific practices. Meta-theory is both meta-narrative (in translating between the sciences and the public sphere) and meta-critique (in adjudicating the epistemic position of the various scientific disciplines). This tradition of normative meta-theory was brought into the 21st century by a variety of figures of whom Ken Wilber and Roy Bhaskar are among the most important and influential.

Wilber, Bhaskar, and the shape of contemporary meta-theories¹³

These are *orienting generalizations*: they show us, with a great deal of agreement, where the important forests are located, even if we can't agree on how many trees they contain.... If we take these types of largely-agreed-upon orienting generalizations from the various branches of knowledge (from physics to biology to psychology to theology), and if we string these orienting generalizations together, we will arrive at some astonishing and often profound conclusions, conclusions that, as extraordinary as they might be, nonetheless embody nothing more than our already agreed upon knowledge. The beads of knowledge are already accepted: it is only necessary to provide the thread to string them together into a necklace.... working with broad orienting generalizations...delivers up a broad orienting map of the place of men and women in the Universe, Life and Spirit, the details of which we can all fill in as we like....

—Ken Wilber (1995, p.5)

At the outset I raised the possibility of a species-wide identity crisis that would render humanity incomprehensible to itself. This is one way of recasting the idea—handed down from Marx and Dewey, through Habermas, to Wilber—that non-synchronic patterns in socio-cultural development have resulted in a situation where our techno-scientific capabilities far outstrip our ethico-political visions and organizations. Just as unprecedented scientific advances expand the reach and efficacy of our communication and biomedical technologies, the fields tasked with

¹³ I would like to thank Ken Wilber for a series of e-mail exchanges in March of 2014, which prompted many of the reflections offered here.

expressing an understanding of what humanity is have been rendered speechless by their own confusions. The proliferation of self-descriptions provided by contemporary biologically oriented human sciences offer a fragmented and reductionistic picture, while the humanities and social sciences, underfunded and undervalued, pursue opportunistic and conservative research agendas (Kagan, 2009). In the same historical moment we find ourselves with the knowledge and power to reliably and strategically affect the central nervous system as a means for canalizing behavioral conformity, our *normative discourses* are in disarray—the normative sciences, as Peirce would call them—these are the discourses that address how things *ought* to be with society and its discursive institutions. In the coming decades, as the global information explosion continues and networks of communicational connectivity encircle the earth, we will be using them to debate the meaning of our humanity—striving to articulate a set of global values that might allow us to understand ourselves as the inhabitants of a globalized techno-economic and communications infrastructure. The academy—the so-called ‘multiversity’—is not built to provide humanity with a coherent picture of itself. The desperate trumpeting of interdisciplinary in colleges and research labs is a testament to this (Menand, 2010).

This 21st century academy demands a new kind of meta-theoretical project. Here I explore Wilber (1995; 1999; 2006) and Bhaskar (1986; 1993), who offer complimentary comprehensive philosophical meta-theories. That they are together in many ways the focus of this volume is not surprising. I’d argue their appeal is in part because the centerpieces of their theories look like the centerpieces of the meta-theoretical tradition I’ve just reconstructed. Across all these thinker there are a shared set of shared philosophical commitments, constructs, and methods, including: reconstructive/transcendental arguments; social science conceived as an axiology of freedom; ontological emergence, change, and evolution; stratified selves/compound individuals; differentiated and laminated social realities; transformational bio-psycho-social models of human agency; and the immanent possibility of geo-historical evolutionary ‘progress’ toward a eudaimonistic society.

As has been noted elsewhere (Esbjörn-Hargens, 2011) there are two important meta-theoretical constructs that Wilber and Bhaskar's systems share: a 4-fold model of social reality and a transformational bio-psycho-socio-cultural model of human action. Both ideas are clearly represented by Wilber's four quadrants and Bhaskar's four-planer social cube. These models represent human social reality, and thus the structure of human action, as a "four-planer" or "four-quadrant" autopoietic dynamic. That is, according to these models, social reality consists of at least an individual, in a cultural and social system that is reproducing itself in relation to natural realities, both those internal to the social reality (individual psycho-biology) and those that are external (the biosphere). Said differently, both models are attempts to represent the full complexity of the social realities addressed by the human sciences, which must account for at least the interplay of: individual agency and psychology; cultural/hermeneutic reproduction and transmission; social-systems and institutional structures; and the natural realities of the body and biosphere. Some Critical Realists have argued that Wilber's quadrants are prone to reification (Cartesian plains even); but this is an inaccurate exegesis of Wilber writings. As Hans Depsian (2013) argues, as well as others more familiar with Wilber's work (Esbjörn-Hargens, 2010), the quadrants are a heuristic and they point to the same dynamic "stratified ontology" represented by Bhaskar's four-plainer social being/transactional model of human agency. A fully articulated account of the confluences and contrasts between the two systems would include (among other things) levels of development (both individual and socio-cultural), psychological frameworks for transcendence, spirituality, and metaReality, as well as commitments to universally efficacious evolutionary processes, from the individual to the geo-historical and cosmic.

However, the most important difference between these two meta-theories is their difference of emphasis concerning the priority of meta-critique and meta-narrative. Hans Depsian (2013) writes (augmented slightly to fit the terms used here):

Critical realism [CR], dialectical critical realism [DCR] and the philosophy of meta-reality [PMR; e.g., Bhaskar's various theories] do not constitute a "meta-theory" in the sense that integral theory does. Whereas integral theory is a quintessential meta-theory as a [meta-narrative] synthesis, (by mainly one thinker in Ken Wilber) of psychology, sociology, anthropology, religion,

physics, ecology, etc. CR, DCR, and PMR are ontological orientations for science, social science and emancipatory projects. I resist strongly the idea that CR, DCR, and PMR constitutes a meta-theoretical [meta-narrative]. Rather it is better understood as an ontological orientation with contingent potential to manifest a meta-theoretical [meta-narrative].... Integral theory is metatheory [as meta-narrative]. Dialectical critical realism is [meta-theory] as metacritique....

Indeed, Bhaskar offers an evolving framework of post-analytical work in the philosophy of science that argues against reductionist ontologies and articulates alternate non-reductive ontologies that allow for depth psychology, human agency, self-consciousness, and self-transformative praxis. This is his project, in the tradition of Kant, Peirce, and Habermas: to take the tools of mainstream academic philosophy and use them to create a philosophical ontology that explains and clarifies the normative aspects of human reason and agency (and for their to be things like emergence, non-linear causality, and evolution in the natural world). Bhaskar is thus among the meta-critics and meta-methodologist, like Edwards (2013) and Esbjörn-Hargens (2013), who argue for and clarify the methodological and ontological underpinnings of integrative meta-narratives—e.g., they lay the groundwork for richly articulated meta-psychologies and meta-sociologies—the most provocative of which is Wilber's Integral Theory.

Wilber's meta-theory evolved across several iterations as an elaborate integration of existing theories in the social, biological, and physical sciences. Beginning in psychology and transpersonal psychology, Wilber's (1977) concept of a "spectrum of consciousness" served a discourse-regulative meta-theoretical function in facilitating the integration a wide variety of systems in developmental psychology, both East and West. Expanding the scope of the integrative meta-theory to include sociology and anthropology (Wilber, 1981; 1983), a meta-narrative began to emerge that would characterize humanity in terms of evolutionary processes, both individual human development as well as the dynamics of socio-cultural evolution. Pulling from Habermas and Piaget, as well as the dynamical and autopoietic factions of cognitive science and social theory, Wilber (1999) would eventually construct a comprehensive meta-theory of developmental psychology, housing a related set of sub theories of the self, socialization, spirituality, meditative states, personality types, and developmental lines. This system of psychology is nested in a larger "theory of everything" (Wilber, 1995; 2006)—the

Integral Model—consisting of a family of sub-theories, including the aforementioned system of categories known as the four quadrants; a set of twenty basic principles governing the evolution of dynamical systems throughout the natural, biological, social, and psychological worlds; and a variety of other meta-theoretical normative provocations, chiding on humanity's ability to understand itself as the normative edge of an evolving Kosmos.

But focused as it is on building a “map of human potential” and clarifying “the farther reaches of human nature,” Integral Theory has “lacked a sustained critique of the development of capitalism, the capital-labor nexus, finance-debtor relations, and contemporary master-slave-type-relations generally” (Despain, 2013). Which is to say that the meta-narrative offered by Wilber has not been welded in the service of sustained socio-political meta-critique. The materials for such a critique are in Wilber’s work, they just have not been used to this end. This is perhaps the most promising avenue for the future integrations of these two meta-theories. Bhaskar’s meta-critique provides materials and methods for considering the injustice and irrationality of existing social formations, especially capitalistic market cultures. This critique suggests that in many contemporary social worlds the “stratified self”—the person—is disfigured and de-agentified from having developed in the context of oppressive relationships. Whereas Bhaskar provides tools for identifying processes of ideology formation in the social totality, Wilber gives tools for diagnosing and treating the deformations of personality that result. The deterioration of subjectivity that results from growing up under the oligopolistic neo-liberal domination of the global order cannot be understood without a complex psycho-social framework. Meta-theoretically guided transformative practice informed by an Integral Theory of human development and a Dialectal Critical Realist theory of social totalities compels us toward creating forms of social life that provide for the full development of non-alienated and autonomous individuals. This suggests the extension of deliberative democratic decision-making beyond representative government and into the entire economy—the democratization workplaces and democratization of production and investment—and this is to be done in the interest of liberating the fullness of human potential.

Conclusion: the shape of meta-theories to come

As soil is to an agricultural society, consciousness is to ours. Some groups seek to mine it like coal, and they tend to create the smog in the noosphere that now surrounds the planet Earth with bad movies and worse TV. Other groups seek to parasitize it and feed off the sex and violence as Homeric gods hovering over the odors of burnt sacrifice. And a few techno-mystic souls imagine that some quantum shift is at hand...as we evolve out of biology and into technology. We probably won't have to wait long to find out. The new electronic media have sped things up and made the old normalcy of objective reality nonviable. They have pushed us into an "up or out" scenario in which we either shift upward to a new culture of higher spirituality, turning our electronic technologies into new cathedrals of light, or slide downward into darkness and an abyss of cultural entropy, fighting it out in a final war of all against all. As H.G. Well warned during the beginning of this period of Planetization: "The future is a race between catastrophe and education."

—Thompson, 2009 p. 29-30

In a set of publications I have addressed issues of quality control at the level of inter-disciplinary knowledge production and education, and suggested that meta-theoretical constructs play a necessary role in epistemologically responsible approaches to interdisciplinarity (Stein, 2007; Stein, Connell, & Gardner, 2008). Specifically, I suggested that meta-theoretical constructs, such as the four quadrants (Wilber, 1995), the ideal speech situation (Habermas, 1998), and the classic syncategorematic categories (Peirce, 1984), play an important function in both disciplinary and interdisciplinary discourse. This function can be characterized variously, as the setting of quality control parameters, or the clarification of our epistemic and ethical responsibilities. Meta-theoretical constructs can be built to *oversee*, regulate, and direct disciplinary and interdisciplinary knowledge production. Meta-theory, as I see it, serves an important normative function on the contemporary academic scene.

But the contemporary relevance of transforming knowledge production processes goes beyond the academy. Problem-focused interdisciplinary think tanks are beginning to play an increasingly important role in an emerging global network of change-oriented institutions. While some—such as the Club of Rome and branches of the OECD—have been around since the 1970s, the past decade has seen a proliferation of action-oriented institutes that span traditional disciplinary boundaries for the sake of producing usable-knowledge about pressing global problems. The State of the World Forum, Integral Institute, Center for Integral Wisdom, and the

Future of Humanity Institute at Oxford, are four examples out of literally dozens. The United States Federal Government and the United Nations continually create specific problem-focused interdisciplinary initiatives, and readily draw from those already producing usable-knowledge in the public sphere. Above I have expressed what I think the role of meta-theory is in this constellation of conditions, in the academy and beyond. It is to weave a coherent overarching set of normative constructs, organizing and regulating the specialized discourses in view, with an eye to comprehensiveness, and a voice resonant with the lifeworld.

As above, this view of meta-theory is controversial. But the idea here is not to displace or replace the self-understanding of meta-theorists who take themselves as scientists pursuing descriptive projects with objective methods. Rather, the intention is to remind big-picture thinkers that this kind of scientific self-understanding is not the only option. Putting arguments about the crypto-normativism of ostensibly descriptive projects aside (Habermas, 1987), I claim only that we meta-theorists might want to think differently about what we do. I sketched the contours of a tradition that weds the normative function of meta-theory to ideas about the *autonomy* and *self-directedness*—*the normative nature* of human cultural evolution. I suggested that meta-theorists are those concerned about the trajectory of knowledge production processes and reflective cultural practices. According to this view meta-theorists build specific kinds of high-level constructs that have a normative thrust. Their interventions aim at affecting the proprieties of our discursive practices.

Hand wringing about the liabilities accompanying these kinds of explicitly normative projects is to be expected. While performative contradictions plague arguments against normative endeavors—prescribing the wholesale rejection of prescriptions—there are legitimate worries worth attending to. Worries about the institutionalization of centralized discursive authorities are warranted, as are concerns about the nefarious political affordances of *evolutionary ideologies* (Farber, 1998). Yet these are not necessary accoutrements to the vision of meta-theory outlined above.

Every key player in my account—Kant, Emerson, Baldwin, Peirce, Piaget, Habermas, Wilber, and Bhaskar—each of them are staunch, articulate, and influential proponents of the free and open discursive practices that characterize the best scientific communities and democratic public spheres. Against the backdrop these thinkers provide, the criticism that normative meta-theoretical endeavors would be coercive enterprises, aimed at stifling discourse, innovation, and free inquiry is misguided. The idea that meta-theorists *oversee* and *regulate* various discursive practices does not entail that meta-theorists are *overseers*. Rather they are just the most reflective and visionary *participants* in knowledge production processes, arguing about preferable or regrettable trajectories for sets of disciplines, suggesting syntheses, but wielding nothing other than the unforced force of the better argument. I support the institutionalization of meta-theoretically guided knowledge production because the exercise of normative authority in these contexts is *not* merely a matter of power-broking. Sweeping arguments to the contrary betray a lack of nuance about what normative authority looks like and reflect the sorry state of our normative discourses more generally.

As the quote beginning this concluding section suggests, we inhabitants of the post-industrial West share a lifeworld characterized by the devaluation of overarching and totalizing ideologies (also see: Bell, 2000). And we still associate the very idea of normative authority with the dark legacy of politically operationalized all-encompassing worldviews. The story told above about the fractioning (and factioning) of the modern research university is but one sub-plot in a larger narrative about recent transformations in the self-understanding of the species. No doubt, the specter of an evolutionary ideology has loomed at least since Darwin first articulated an objective mechanism governing evolutionary processes. But the slow and persistent emergence of an evolutionary worldview has not counteracted broader tendencies toward a radically polycentric and conflict-ridden cultural environment. Even putting aside its rejection by traditionalists preferring non-scientific accounts, evolution is an ambiguous and contested concept, especially with regards to its broader ethico-political implications (Wilber, 1995; Wilson, 1975). The suggestions I offered here assume that heterogeneity and pluralism will continue to

characterize cultural evolution. Exercising the normative function of meta-theory does not entail the homogenization of cultural practices and discursive institutions in the name of evolutionary progress. Placing meta-theory in an evolutionary context does not entail taking on the worst baggage from over a Century's worth of attempts at resuscitating ideology in evolutionary garb (Farber, 1998).

Shadow boxing aside, the goal of this paper has been to *remember* and *express*—to reconstruct a thread in the history of meta-theory with the hope of affecting the shape of meta-theories to come. More work remains to be done filling out the rest of this history, and more importantly, building meta-theories that fit the specifications thus reconstructed. I have already begun this constructive meta-theoretical work in a series of publications that address the use of *metrics* in contexts where human lives are under scrutiny, from the diagnostic categories that structure the delivery of psychopharmacological interventions to the standardized testing infrastructures that frame educational opportunity (Stein, Dawson, & Fischer, 2011; Stein, della Chiesa, Hinton, & Fischer, 2010; Stein & Hiekkinen, 2009). Overseeing complex multi-disciplinary areas of concern, these interventions involve the construction of meta-theoretical constructs that serve as normative parameters. I argue the merits of setting a new trajectory for the various discursive practices involved with the institutionalized measurement of human functioning, suggesting directions more comprehensive, responsible, and responsive to the singularity and vulnerability of individuals. Moreover, as others have shown (Jaques, 1976; Nussbaum, 2006; Sen, 1999), the possibilities of cultural evolution and justice in the coming decades hinge on the kinds of *metrics* we choose to build and use when assessing the properties of human lives that bear on political and economic decision making. Our systems of measurement determine who we think we are and what we do to each other. Consider how SAT scores and GDP reports affect the self-perceptions of individuals and nations respectively, how partial they are as indices, and how drastically they alter the distribution of resources. But these considerations bring us full circle, back to the idea that we are responsible for the creation of the meta-theoretical languages we would use to re-describe and re-create ourselves.

Bibliography:

- Abbot, F. (1885) *Scientific Theism*. Boston: Little & Brown.
- Apel, K-O (1994) Transcendental semiotics and hypothetical metaphysics of evolution. In (Mendieta ed.) *Karl-Otto Apel: Selected essays* (Vol. 1) Atlantic Highlands, NJ: Humanities Press.
- Apel, K. O. (1995). *Charles Sanders Peirce: From pragmatism to pragmaticism*: Humanities Press.
- Baldwin, J.M. (1895) *Mental Development in the child and the race*. New York: Macmillan Co.
- Baldwin, J.M. (1897) *Social and ethical interpretations in mental development*. New York: Macmillan Co.
- Baldwin, J.M. (Ed.) (1905) *Dictionary of philosophy and psychology*. (Vol. 1-4) New York: Macmillan Co.
- Baldwin, J. M. (1911). *Thought and things: A study in the development of meaning and thought or genetic logic* (Vol. 1-4). New York: Macmillan Co.
- Baldwin, J. M. (1913). *History of psychology* (Vol. 1-2). London: Watts & Co.
- Baldwin, J.M. (1915). *Genetic Theory of Reality*. New York: J.P. Putnam's Sons Press.
- Bell, D. (2000) *The end of ideology*. Cambridge MA: Harvard University Press.
- Boring, E., G. (1929). *A history of experimental psychology*. New York: Appleton-Century Company.
- Brandom, R. (2002). *Tales of the mighty dead: Historical essays in the metaphysics of intentionality*. Cambridge, MA: Harvard University Press.
- Brandom, R. (2009) *Reason in philosophy: animating ideas*. Cambridge, MA: Harvard University Press.
- Broughton, J., M., & Freeman-Moir, D. J. (Eds.). (1982). *The cognitive developmental psychology of James Mark Baldwin*. Norwood, NJ: ALEX Press.
- Campbell, D., T. (1987). Evolutionary epistemology. In Radnitzky & Bartly (Eds.), *Evolutionary epistemology, theory of rationality, and the sociology of knowledge*. La Salle, IL: Open Court.
- Cassirer, E. (1981) *Kant's life and thought*. New Haven: Yale University Press.
- Chapman, M. (1988). *Constructive evolution: origins and development of Piaget's thought*. New York: Cambridge University Press.
- Chomsky, N. (1979) *Language and responsibility*. New York: Pantheon books.
- Cremin, L (1988) *American education: The metropolitan experience, 1876-1989*. New York: Harper and Row.
- Dewey, J. (1898) *Evolution and ethics*. In *Monist*, Vo. 8.
- Edwards, M. (2008). Where is the method to our integral madness: An outline for an integral meta-studies. *Journal of Integral Theory and Practice*, 3(3), 165-194.
- Edwards, M. (2007), "'Every Today was a Tomorrow': An Integral Method for Indexing the Social Mediation of Preferred Futures', *Futures*, vol. 40 (2), pp. 173-189.
- Esbjörn-Hagens, S. & Zimmerman, M. E. (2009) *Integral Ecology: Uniting Multiple Perspectives on the Natural World*. Boston: Integral Books, Shambhala Publications.

- Esposito, J. (1980) *Evolutionary metaphysics: the development of Peirce's theory of categories*. Athens, OH: Ohio University Press.
- Farber, P. (1998) *The temptations of evolutionary ethics*. Los Angeles: University of California Press.
- Fenves, P. (1991) *A peculiar fate: Metaphysics and world-history in Kant*. Ithaca: Cornell University Press.
- Fiske, J. (1874) *Outlines of a cosmic philosophy*. London: Macmillan Co.
- Fiske, D. W., & Shweder, R. A. (Eds.). (1986). *Metatheory in social science*. Chicago, IL: University of Chicago Press.
- Fukuyama, F. (2002). *Our posthuman future*. New York: Farrar, Straus, and Giroux.
- Gibbons, M., Limoges, C., Nowontny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: SAGE Publications.
- Habermas, J. (1971). *Knowledge and human interests*. Boston: Beacon Press.
- Habermas, J. (1973). *Legitimation Crisis*. Boston: Beacon Press.
- Habermas, J. (1984). *The theory of communicative action: Reason and the rationalization of society* (T. McCarthy, Trans. Vol. 1). Boston: Beacon Press.
- Habermas, J. (1987). *The theory of communicative action vol. 2: Lifeworld and system, a critique of functionalist reason*. Boston: Beacon Press.
- Habermas, J (2002). *A Conversation About God and The World*. In *Religion and Rationality: Essays on Reason, God, and Modernity*. Cambridge: MIT Press.
- Habermas (2008). *Religion in the Public Sphere: Cognitive Presuppositions for the "Public Use of Reason" by Religious and Secular Citizens*. In *Between Religion and Naturalism*. Malden, MA: Polity Press.
- Habermas, J. (1987) *The philosophical discourse of modernity*. Cambridge, MA: MIT Press
- Habermas, J. (1992). Peirce on communication. In *Post-metaphysical thinking: Philosophical essays*. Cambridge, MA: MIT Press.
- Habermas, J. (1998). *On the pragmatics of communication* (Cooke, Ed. Trans.). Cambridge, MA: MIT Press.
- Habermas, J. (1996). *Between facts and norms: Contributions to a discourse theory of law and democracy*. Cambridge, MA: MIT Press.
- Habermas, J. (2003). *The future of human nature*. Cambridge, UK: Polity Press.
- Habermas, J. (2006) *The divided west*. Cambridge, UK: Polity Press.
- Habermas, J. (2007). The language game of responsible agency and the problem of free will: How can epistemic dualism be reconciled with ontological monism? *Philosophical Explorations*, 10 (1), 13-50.
- Hacking, Ian. (1995) *Rewriting the soul: multiple personality disorder and the sciences of memory*. Princeton, NJ: Princeton University Press.
- Hamilton, M. (2008) *Integral City: Evolutionary Intelligences for the Human Hive*. Canada, B.C.: New Societies Publishers.
- Hausman, C. (1993) *Charles S. Peirce's evolutionary philosophy*. New York: Cambridge University Press.

- Jaques, E. (1976). *A general theory of bureaucracy*. London: Heinemann Educational.
- Kagan, J. (2009) *The three cultures: natural sciences, social sciences, and the humanities in the 21st century*. New York: Cambridge University Press.
- Kant, I. (1998). *The critique of pure reason* (Guyer, Trans.). New York: Cambridge university press.
- Kant, I. (1983a) Idea or a universal history with a cosmopolitan intent. In (Humphery, Trans. Ed.) *Perpetual peace and other essays*. Indianapolis. Hackett Publishing.
- Kant, I. (1983b) To perpetual peace: a philosophical sketch. In (Humphery, Trans. Ed.) *Perpetual peace and other essays*. Indianapolis. Hackett Publishing.
- Kent, B. (1987). *Charles S. Peirce: Logic and the classification of the sciences*. Montreal: McGill University Press.
- Kerr, C. (1963) *The uses of the university*. Cambridge: Harvard University Press.
- Kentner, K. & Kloesel, C. (1986) *Peirce, semiotic, and pragmatism: Essays by Max H. Fisch*. Bloomington: Indiana University Press.
- Klein, J. T. (2005). *Humanities, culture, and Interdisciplinarity*. Albany: SUNY Press.
- Kohlberg, L. (1981). *Essays on moral development vol. 1, the philosophy of moral development*. New York: Harper and Row.
- Korsgaard, C. (1996) *The sources of normativity*. New York: Cambridge University Press.
- Lacan, J (1977) *Écrits: A selection* (Sheridan, Trans.) New York: W.W. Norton & Co.
- Laszlo, E. (1972). New York: Harper & Row Publishers.
- Lazlo, E. (2004) *Science and the Akashic Field: An Integral Theory of Everything*. Rochester, VT: Inner traditions.
- Leidecker, K. (2007) *Yankee teacher: the life of William Torrey Harris*. McMaster Press.
- McIntosh, S. (2007) *Integral consciousness and the future of evolution: how the integral worldview is transforming politics, culture, and spirituality*. St. Paul, MN: Paragon House.
- Mead, G. H. (1936) *Movements of thought in the Nineteenth Century*. Chicago: University of Chicago Press.
- Misak, C. (2004) *The Cambridge companion to Peirce*. New York: Cambridge University press.
- Mascolo, M. F., & Fischer, K. W. (in press). The dynamic development of thinking, feeling, and acting over the lifespan. In R. M. Lerner & W. F. Overton (Eds.), *Handbook of life-span development. Vol. 1: Biology, cognition, and methods across the lifespan*. Hoboken, NJ: Wiley.
- Nussbaum, M. (2006) *Frontiers of justice: disability, nationality, species membership*. Cambridge, MA: Harvard University Press.
- Overton, W. F. (2007). *A coherent Introduction to systems philosophy - toward a new paradigm of contemporary thought. Metatheory for dynamic systems: Relational organicism-contextualism. Human development, 50, 154-159.*
- Peirce, C. S. (2000). A guess at the riddle. In Peirce Edition Project (Ed.), *Writings of Charles S. Peirce: A chronological edition* (Vol. 6). Bloomington, IN: Indiana University Press.
- Peirce, C. S. (1984). On a new list of categories. In The Pierce Edition Project (Ed.), *Writings of Charles S. Peirce: A chronological edition* (Vol. 2). Bloomington, IN: Indiana University Press.

- Peirce, C. S. (1984a). Grounds for the validity of the laws of logic: Further consequences of four incapacitates. In Peirce Edition Project (Ed.), *Writings of Charles S. Peirce: A chronological edition* (Vol. 2). Bloomington, IN: Indiana University Press.
- Peirce, C. S. (1982). I, it, and thou: A book giving instruction in some of the elements of thought. In The Pierce Edition Project (Ed.), *Writings of Charles S. Peirce: A chronological edition* (vol. 1). Bloomington, IN: Indiana University Press.
- Peirce, C. S. (1934). Book one: ontology and cosmology. In Hartshorne & Weiss (Eds.), *The collected papers of Charles S. Peirce* (vol. 6). Cambridge, MA: Harvard University Press.
- Peirce, C. S. (1933). Book two: existential graphs. In Hartshorne & Weiss (Eds.), *The collected papers of Charles S. Peirce* (vol. 4). Cambridge, MA: Harvard University Press.
- Peirce, C. S. (1931). Book one: Elements of logic. In Hartshorne & Weiss (Eds.), *The collected papers of Charles S. Peirce* vol. 2. Cambridge, MA: Harvard University Press.
- Popper, K. (1966) *Of clocks and clouds*. St Louis: Washington University press.
- Piaget, J. (1932). *The moral judgment of the child*. London: Routledge and Kegan Paul.
- Piaget, J. (1952). [autobiography]. In E. Boring, G. (Ed.), *A history of psychology in autobiography* (Vol. 4, pp. 237-256). New York: Russell & Russell.
- Piaget, J. (1970a). *Main trends in psychology*. New York: Harper & Row.
- Piaget, J. (1970b). *Main trends in interdisciplinary research*. New York: Harper & Row.
- Piaget, J. (1970c). *The place of the sciences of man in the system of sciences*. New York: Harper & Row.
- Piaget, J. (1970d). *Structuralism* (C. Maschler, Trans.). New York: Harper & Row.
- Piaget, J. (1971a). *Biology and knowledge*. Chicago: University of Chicago Press.
- Piaget, J. (1971b). *The insights and illusions of philosophy*. New York: The World Publishing Company.
- Piaget, J. (1972). *The principles of genetic epistemology* (W. Mays, Trans.). London: Routledge & Kegan Paul.
- Piaget, J. (1974). *Adaptation and intelligence*. Chicago: University of Chicago Press.
- Piaget, J. (1977). *The essential Piaget: An interpretive reference guide*. (Ed. Gruber & Voneche). J.J. New York: Basic Books.
- Piaget, J. (1978). *Behavior and evolution*. New York: Random House.
- Prigogine I. & Stengers, I. (1984) *Order out of Chaos*. New York: Bantam.
- Richards, R. J. (1987). *Darwin and the emergence of evolutionary theories of mind and behavior*. Chicago: University of Chicago Press.
- Ritzer, G. (1991). *Meta-theorizing in sociology*. Lexington, MA: Lexington Books.
- Ritzer, G. (Ed.) (1992) *Metatheorizing*. Newbury Park: Sage.
- Schneider, H. (1963) *A history of American philosophy*. New York: Columbia University Press.
- Sen, A. (1999) *Choice, welfare, and measurement*. Cambridge, MA: Harvard University Press.
- Sellars, W. (2006). *In the space of reasons*. Cambridge: Harvard University Press.
- Smith, L. (2002). Piaget's model. In U. Goswami (Ed.), *Blackwell handbook of childhood cognitive development*. Oxford: Blackwell.

- Smith, L. (2006a). Norms and normative facts in human *development*. In L. Smith & J. J. Voneche (Eds.), *Norms in human development*. New York: Cambridge University Press.
- Smith, L. (2006b). Norms in human development: Introduction. In L. Smith & J. J. Voneche (Eds.), *Norms in human development*. New York: Cambridge University Press.
- Smith, L., & Voneche, J. J. (Eds.). (2006). *Norms in human development*. New York: Cambridge University Press.
- Shin, S.J. (2002). *The iconic logic of Peirce's graphs*. Cambridge, MA: MIT press.
- Stein, Z. (2007). Modeling the demands of interdisciplinarity. *Integral Review*. Vol. 4.
- Stein, Z, Connell, M. & Gardner, H. (2008). Thoughts on exercising quality control in interdisciplinary education: toward an epistemologically responsible approach. *Journal of Philosophy of Education*. Vol. 42, No. 3-4.
- Stein, Z. & Hiekkinen, K (2009). Metrics, models, and measurement in developmental psychology. *Integral Review*. Vol. 5 (1).
- Stein, Z., della Chiesa, B. Hinton, C., Fischer, K. (2011). Ethical issues in Educational Neuroscience: Raising Children in a Brave New World. In *Oxford Handbook of Neuroethics*. (Illes & Sahakian, eds.) Oxford University Press.
- Stein, Z., Dawson, T.L., Fischer, K.W. (2010) Redesigning testing: operationalizing the new science of learning. In Khine & Saleh (Eds.) *The new science of learning: computers, cognition, and collaboration education*. Springer Press.
- Ward, L. (1887) *Dynamic sociology* (Vol 1-2). New York: Appleton & Company.
- Weber, B & Depew, D (Eds.) (2003) *Evolution and learning: the Baldwin Effect reconsidered*. MIT Press, Cambridge, Mass
- Whitehead, A. N. (1978). *Process and reality*. New York: MacMillan Publishing Company.
- Wilber, K. (1995). *Sex, ecology, spirituality - the spirit of evolution*. Boston: Shambhala Publications.
- Wilber, K. (1999). *Integral psychology*. Boston: Shambhala Publications.
- Wilber, K. (2006). *Integral spirituality*. Boston: Shambhala
- Wilson, E.O. (1975) *Sociobiology: the new synthesis*. Cambridge, MA.: Harvard University Press.
- Wozniak, R (2001) Development and synthesis: An introduction to the life and work of James Mark Baldwin. In Wozniak (ed.) *Selected works of James Mark Baldwin* (vol. 1). Bristol, England: Thoemmes Press.