

The Critical Role of the Dialectic in Viable Metatheory

A Commentary on Henriques' Tree of Knowledge System for Integrating Human Knowledge

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ABSTRACT. Henriques (2008) persuasively argues that his Tree of Knowledge (ToK) System provides a more viable alternative to Wilson's (1998) consilience model as a framework for integrating knowledge generated by the natural sciences, social sciences, and humanities. I selectively deconstruct the ToK System to demonstrate that its capacity to solve problems through integrative solutions and to advance interdisciplinary conjunctions derives from its pervasive dialectical ontology and epistemology. Emphasis is on analyzing Behavioral Investment Theory, the Justification Hypothesis (the JH), and Henriques' solution to the problem of psychology—all essential to unifying the three great branches of learning. I also suggest directions for further development of the JH, rooted in the psychoanalytic classical-relational dialectic. Potent implications of Henriques' formulations for epistemological bridging within psychology and for multidisciplinary integration are discussed.

KEY WORDS: dialectic, epistemology, integration, Justification Hypothesis, metatheory, ontology, Tree of Knowledge System, unification

Some 30 years ago Rychlak (1976a) issued a passionate call for appreciating the crucial relevance and heuristic power of dialectical thinking for the social and human sciences. And although dialectical thinking has been present in fields as varied as biology, sociology, and psychotherapy, in my view Rychlak's call still holds: the dialectic provides a remarkably powerful conception that warrants far more serious attention from theorists, researchers, and practitioners within and across disciplines.

I was therefore heartened to see this quality of dialecticism as pervasive throughout Henriques' (2003) Tree of Knowledge (ToK) System, a gripping

metatheory that seeks to describe and explain ‘the [hierarchical] evolution of complexity, as presently mapped out by science’ (p. 155). In this commentary I selectively deconstruct the ToK System to explicitly demonstrate the marked extent to which the system’s seemingly unlimited capacity to effectively solve problems through integrative solutions and to open spaces for fertile interdisciplinary discourse derives from its fundamentally dialectical ontology and epistemology. At certain points, I also root out and develop dialectics that I perceive to be implicit in the system, suggesting additional directions for elaboration of the metatheory. However, while my observations and claims center on the ToK System, they are also offered with an eye cast on the value of dialectical thinking to effective metatheory more generally—in a sense, using the ToK System as a case study of the essentiality of dialectical thinking to viable metatheory.

Central Properties of the Dialectic

As a ‘metaconstruct’ (Rychlak, 1976b, p. 126), the dialectic encompasses an ontology and a method (Downing, 2000) that apply across the vast realm of all that is human. Ontologically, the dialectic fundamentally denotes bipolarity, wherein two elements stand in direct opposition or contradiction to one another but through their dynamic interplay they create a holistic system (Rychlak, 1976a). Dialecticism’s epistemology logically follows. In applying a dialectical *method*, one seeks to understand a given phenomenon or process through undertaking a ‘dialogue’ between the opposing sides of the bipolarity, recognizing that each, being an integral part of the whole, contributes important knowledge about the phenomenon or process under consideration (Downing, 2000). However, ‘too many people think that dialectic means the Hegelian formula of “thesis–antithesis–synthesis” and nothing else’ (Rychlak, 1976b, pp. 134–135). In this respect, it is valuable to keep in mind that at rock bottom, a dialectical process—whether in nature or in how one is thinking—is about back-and-forth interplay and reciprocal interaction.

The Dialectics of the ToK System

At numerous turns, the ToK System employs dialectical modes of thinking to generate its formative propositions and address problems that arise in attempting to integrate and unify diverse bodies of knowledge. Its dialectical ontology and epistemology is a logical consequence of the fact that the ToK is fundamentally a systemic model. Thus, it is fitting that Henriques closes his essay with a quote by Ceccarelli that deploys a metaphor of the disciplines as akin to ‘different parts of a single organism’ (as cited in Henriques, 2008, p. 751), hierarchically arranged and thoroughly interconnected in the

service of the organism's functioning as a whole. This quintessentially systemic conception of the disciplines faithfully mirrors the manner in which the ToK System serves as a framework for integrating human knowledge.

Embracing interrelatedness and wholeness, the ToK System claims ontological legitimacy for each of its dimensions of complexity and their respective constitutive elements, clearly evident in this encapsulation:

Reality, in the deepest sense of the word, could now be thought of and clearly depicted as a set of hierarchically arranged levels of complexity. ... The ToK System offers a vision of knowledge as consisting of one level of pure information (Energy) and four levels or dimensions of complexity (Matter, Life, Mind, and Culture) that correspond to the behavior of four classes of objects (material objects, organisms, animals, and humans), and four classes of science (physical, biological, psychological, and social). (Henriques, 2004a, p. 18)

Considering the staggering array of structures and processes encompassed by this conception, the ontological pluralism characterizing the ToK System seems boundless. Yet, the challenge that Henriques takes on is that of weaving pluralism into a coherent narrative that brings meaning and intelligibility to diversity. Essential to Henriques' effectiveness in meeting this challenge are both his acute appreciation for the extent to which unification has been impeded by scholars pitting diverse bodies of knowledge against one another, and his continuous process of synthesizing and otherwise interrelating characteristically opposed conceptions to create new theoretical bridges.

This dialectical perspective reverberates throughout the ToK System, but two psychological formulations—Behavioral Investment Theory (BIT) and the Justification Hypothesis (JH)—prove especially key to the system's capacity to integrate and unify knowledge, and I will make explicit the dialectical frame implicitly woven throughout each. Several issues are also raised, principally regarding the JH, which point to additional potentially fruitful directions for its dialectical development.

Theoretical Joint Points: BIT and the JH

The theoretical joint point is a principal component of the ToK System, and it introduces into the epistemology of metatheory a heuristic and intriguing metaconstruct. A theoretical joint point is defined as 'a causal explanatory framework' (Henriques, 2003, p. 156) that provides an account of how each dimension of complexity in the ToK System emerged from the dimension below it, thereby also specifying how the different dimensions throughout the system are systematically related to one another. The joint point metaconstruct calls attention to the necessity for metatheories that postulate emergent relationships between hierarchical levels of phenomena to explicate key processes through which such emergence takes place. In the case of the ToK System, BIT explains the emergence of mind from life, while the JH accounts for culture's emergence from mind. Dialectical processes are integral to both theoretical joint points.

Behavioral Investment Theory. The ToK System equates mind most fundamentally with ‘nervous system complexity’ (Henriques, 2003, p. 159), and BIT explains why and how this profoundly advanced level of complexity emerged over millions of years from simple organic life. BIT’s dialecticism is evident from the very outset of the theory’s explication: Henriques (2003) explicitly frames BIT within the context of ‘complicated epistemological issues’ within psychology tied to ‘the schisms between cognitive and behavioral science’ and ‘submit[s] that the concept of behavioral investment provides the framework for uniting cognitive and behavioral science’ (p. 158).

Psychological paradigms are inescapably undergirded by fundamental philosophical assumptions, and therefore any serious effort to resolve schisms between divergent paradigms must grapple with the competing philosophical premises that sustain the schismatic stasis. Henriques is acutely attuned to these philosophical challenges and tackles them head-on, significantly buttressing the viability of his unifying formulations. In the case of BIT, he constructs a philosophical foundation for the theory in the form of ‘the philosophy of mental behaviorism’ (MB; Henriques, 2004b, p. 1212). MB provides a dialectical solution to the schism created by the opposing epistemological premises of Skinnerian behaviorism, which maintains that only observable phenomena—overt behavior in relation to the external environment—are knowable and consequently the only acceptable bases for explaining human behavior, and cognitivism, which holds that processes of mind are indeed knowable and essential for understanding behavior. MB advances a synthetic knowledge system built on the concept of *psychological behavior*, generically understood as ‘animal behavior mediated by the nervous system that produces a functional effect on the animal–environment relationship’ (Henriques, 2004b, p. 1213). Henriques (2004b) sharpens this conception by defining two sets of psychological behaviors, both mediated by the nervous system and interrelated through nonlinear, reciprocal causation: ‘(a) overt mental behaviors, which are behaviors that take place between the animal and the environment, and (b) covert mental behaviors, which take place within an animal’s nervous system’ (p. 1213).

Tightly anchored to this dialectical philosophical foundation, Henriques constructs the details of BIT though merging key concepts and processes from the selection science of Skinnerian behaviorism with cognitive neuroscience. The result is a higher-order synthesis that provides a detailed and insightful explanation of why and how mind evolved out of simple organic life.

There is still one other benefit deriving from this dialectically generated formulation that I explicitly note here, and this is the creation of a rich and dynamic framework for integrating multiple theories. Among vital purposes served by metatheory is its function as scaffolding for integrating more

specific theories that conceptually and empirically map different aspects of the phenomena under study (Anchin, 2008b). BIT well serves this function. Henriques (2004b) proposes BIT as an amalgam of five different yet complementary ‘brain-behavior paradigms: (a) cognitive science, (b) behavioral science, (c) evolutionary theory and genetics, (d) neuroscience, and (e) systems theory’ (p. 1215). And he contends that eventually ‘the mysteries of the mind’ (Henriques, 2004b, p. 1215) will be unlocked through fusing these five paradigms (see Henriques, 2004b, for a description of the specific disciplines encompassed by each paradigm).

The Justification Hypothesis. Whereas BIT provides a framework for understanding animal behavior, the concepts of culture and the uniqueness of human mentation figure prominently in the ToK System. The Justification Hypothesis (JH) is the conceptual frame that allows for the jump from complicated animal minds to the next dimension of complexity involving human self-consciousness and human culture.

At the core of the JH is the postulate that as pervasively social beings, humans are continuously in the position of having to effectively justify to others their behavioral investments. One among three major postulates, the JH asserts that a principal phylogenetic basis for this fundamental ontogenetic condition was the evolution of language, a tremendously complex and powerful tool which gave others direct access to one’s thoughts and intentions. According to the JH, navigating the weighty justificational requirements and the pragmatics of accountability (Watzlawick, Beavin, & Jackson, 1967) that emerged in the wake of the human capacity for language created a powerfully formative selection pressure.

The solution to this vexing circumstance lay fundamentally in developing capacities to determine which of one’s behavioral responses are justifiable, inhibiting those that are unjustifiable, and being able to generate justifications for those that are (Henriques, 2003, p. 167). Dialectical processes were and remain integral to this resolution as well. For example, the conjunctive tasks of inhibiting unjustifiable behavioral investments and generating acceptable justifications for enacted behavioral investments entail opposed processes of inhibition and expression that nevertheless form a unity when understood as equally necessary and indeed complementary components of effective self-regulation vis-à-vis the social world.

These psychological functions are all essential for effectively navigating the social environment. However, functions cannot be carried out without structures, and accordingly, for justification processes and their vital functions to be effectively carried out, the developing hominid would have had to have developed a psychological structure capable of oscillating between individual motivations and social demands and effecting resolutions between these competing forces. For Henriques, this critical structure is the human ego. Its evolution and operative dynamics form the centerpiece of a second

major postulate of the JH, and in constructing this formulation Henriques again fashions a compelling synthesis between characteristically opposed camps, in this case Freudian and academic psychology.

In his most extensive explication of the JH, Henriques (2003) first demonstrated parallels between BIT and adaptive functions of 'the drive-defense dialectic' (p. 166), providing a backdrop for explaining the need for a vastly more sophisticated ego structure to meet the justificational demands created by the emerging sociolinguistic environment. In that context, he went on to detail and update the Freudian conception of the human ego, redefining it as the human 'self-consciousness system (SCS)' (Henriques, 2004b, p. 1216). This system's deep structural link to the Freudian paradigm, its core functional purpose, and the thoroughly dialectical nature of its processes are well summarized in the JH's second postulate:

Freud's fundamental observation was that the self-consciousness system (SCS) functions as a 'justification filter' that inhibits unjustifiable behavioral investments and provides socially acceptable justifications for behaviors that are expressed. Consistent with the basic tripartite model in psychodynamic theory, the model suggests that the SCS can be thought of as existing between non-verbal, biopsychological drives and defenses on the one hand and a sociolinguistic system that dictates what actions are justifiable and what actions are not on the other. (Henriques, 2004b, p. 1216)

This conceptualization provides a germinative framework for the Freudian-academic synthesis. Key to this bridge is Henriques' metaphor comparing the human ego to a defense attorney. Like a defense attorney, who must explain his or her 'clients' actions in a manner that others will both believe and respond to favorably' (Henriques, 2003, p. 173), the human ego organizes information and knowledge about the self to enable the fashioning of justifications that place one's actions in a socially acceptable light. Henriques blends this conception with empirical evidence from contemporary psychological science—particularly neuropsychology, cognitive, social, and developmental psychology—to demonstrate processes that serve these functions (e.g., self-serving bias; cognitive dissonance). Notably, these processes do not supplant traditional Freudian defense mechanisms, which in Henriques' formulation continue to serve as additional processes through which the human ego carries out its inhibitory and justificational functions (see Henriques, 2003, p. 168, n. 8).

The intrapsychic realm of human behavior constitutes significant common ground shared by the ego's multiple justification-filtering processes. However, it is also important to note that this intrapsychic emphasis underplays the *overt* level of actually expressing one's justifications to others in the social world. It would seem that for justifications to serve their purposes they must be not only effectively computed and fashioned by the mind but also effectively communicated in relational contexts.

Relational dimensions of justification: Transactional processes and human attachment. This level of the justification process brings it more into the realm of the interpersonal and raises questions about how justifying oneself to others also proceeds transactionally. It speaks, as well, to a fundamental dialectic embedded in the JH: the constant interplay between the intrapsychic and interpersonal levels of human behavior (Anchin, 2002; Anchin & Kiesler, 1982). Understanding processes at each of these levels and their interrelationships will provide a more comprehensive and unified account of the justification process. For example, are there consistent verbal and non-verbal patterns that characterize effectively expressed justifications? How do these emotionally impact others? How do they reciprocally communicate that a justification is acceptable, and how does that reciprocally affect the domain of self thus effectively justified? Questions of this sort provide a fertile meeting ground for interpersonal, cognitive, and affective science (see Reis, Collins, & Berscheid, 2000).

Given the interpersonal level of the justification process, theory surrounding the JH would also benefit from wrestling with the vibrant tension between two divergent psychoanalytic models: the classical and relational paradigms (Anchin, 2002; Greenberg & Mitchell, 1983). The former, rooted in Freud's drive theory, places *conflict* at the core of its conceptions about human nature and the human condition (Mitchell, 1988). The latter, synthesizing interpersonal psychoanalysis, object relations theory, and self-psychology, emphasizes not drives, but 'the centrality of relationships between people, real and imagined, internal and external' (Aron, 1996, p. 33). These paradigms' competing perspectives on human motivation suggest significant implications for development of the JH.

Slavin and Kriegman (1992) point out that the 'classical narrative' stresses 'inherent clash of normal individual aims. Selfishness, rivalry, competition are motivationally primary' (p. 49), and hence conflict between self and others is inevitable. In direct opposition, the 'relational narrative' places 'emphasis on mutual, reciprocal, convergent aims' (p. 49). Interpersonal conflict is not an intrinsic inevitability but rather springs from 'pathology or environmental failure,' and crucially 'the possibility of relative harmony' (p. 49) between self and others is embraced.

Disagreeing with those who view this and other classical-relational dichotomies as irreconcilable, Slavin and Kriegman (1992) maintain that the classical-relational tension is best understood as a dialectic and use an evolutionary framework to forge a theoretical synthesis. In this perspective, there is 'inherent conflict and inherent mutuality in the good-enough environment. The self interests of genetically distinct yet related individuals necessarily conflict and overlap,' and consequently the human psyche is designed to manage 'the ongoing negotiation of the inherent tension between selfish and mutualistic aims' (p. 66).

Against this backdrop, the JH's motivational infrastructure remains strongly classical psychoanalytic in nature. Henriques' root metaphor of the human ego as a defense attorney, when unpacked further, is telling. Dialectically, a defense attorney implies a prosecuting attorney whose role is to mount a convincing case for the defendant's wrongdoing so that conviction and appropriate punishment can ensue. As opposing forces that form a unified whole, the defense and prosecuting attorneys form a system that is inherently adversarial. Analogously, the JH in its current form retains this conflictual flavor. The human ego *qua* defense attorney may succeed in fashioning justifications that legitimize one's actions and thereby secure acceptance, but the social world *qua* prosecuting attorney can reject those justifications and withdraw acceptance or still worse. And the social world does partially function in this manner; negative social consequences are likely to ensue when one behaves in ways perceived as unjustifiable. This prospect of conflict looms at every level of the social matrix.

Yet, per Slavin and Kriegman's (1992) synthesis, self–other dynamics are also strongly influenced by convergent, mutualistic strivings. Strong supportive evidence derives from burgeoning theory and research (Cassidy & Shaver, 1999) on human attachment, which 'as both phenomenon and construct ... refers to the fundamental human need to form close affectional bonds' (Fosha, 2000, p. 33). Bowlby (1969) made the compelling case that the human attachment system is an innate, adaptive product of evolution. As explained by Greenberg and Mitchell (1983):

This system was 'selected' during the early evolution of the human species because it made survival more likely; children in the proximity of the mother are less vulnerable to predators. Thus, the child's attachment to the mother is part of an 'archaic heritage' whose function is species survival. (p. 185)

Human beings are hard-wired to form attachment bonds and they are morphologically constructed for mutualistic relational processes throughout the life span (Siegel, 1999), deep-structural foundations of such universal processes as closeness, caretaking, and cooperation (Fosha, 2000; Mahoney, 1991).

Henriques begins to touch on a relational dimension of justification's motivational roots in specifying that effective justifications are those that are socially acceptable, and the Influence Matrix (Henriques, 2008) contains additional relational significations. However, in my view the full implications of striving to attain social acceptance through justification processes remain to be more fully developed. I propose that exploring those processes particularly within the powerful matrix of human attachment could lead to elaboration of additional significant phylogenetic and ontogenetic dimensions of the JH. The quest for social acceptance through effective justifications may be fundamentally tied to the intrinsic human need for connectedness and secure attachment to others, spawning intriguing implications for the JH. For example, in an ever more complex social environment, to what extent were the

ability to generate acceptable justifications and to form attachment bonds differentially weighted in promoting survival and inclusive fitness? How might the evolving structures and processes of the SCS and of the human attachment system have reciprocally interacted to promote those ends? In what ways might attachment bonds of differential emotional significance have influenced determination of behavioral investments necessitating inhibition, those to be given expression, and the nature of justification(s) offered? Each of these questions also has ontogenetic variants. Such questions dialectically bridge the JH's groundedness in the classical conflict-based view of self–other dynamics with the relational claim that ‘people are ... inevitably and powerfully drawn together ... wired for intense and persistent involvement with one another’ (Mitchell, 1988, p. 21).

These considerations also carry important implications for the JH's third postulate, which explains how culture emerged from the human mind. Henriques parsimoniously maintains that culture evolved as ‘large-scale justification systems providing the rules and patterns for acceptable behaviors’ (Henriques, 2004b, p. 1217). By the same token, the relational paradigm and attachment theory may illuminate another dimension integral to understanding the phylogeny and ontogeny of culture. Consider that for a given justification system to have been adopted on an ever larger scale, individuals would need to have bonded together around the belief system in question. Thus, connective social processes would seem to have been as essential to the collective internalization of a given large-scale justification system as the nature of the belief system itself. Cultural institutions may therefore have evolved to provide its members with not only valuable large-scale justification systems but also, on an ever-expanding scale, innumerable opportunities to meet their hard-wired needs for attachment bonding, experiencing mutuality and connection, and, integrally related, the safety and security essential to life-span growth and development.

Henriques' Solution to the Problem of Psychology: Intradisciplinary Dialectics

In the ToK System, the theoretical joint points of BIT and the JH are not only instrumental to explaining how mind emerged from life and culture from mind, respectively, but they also prove vital to Henriques' solution to ‘the problem of psychology’ (Henriques, 2004b). Delineating the dimensions, sources, and implications of this problem and detailing his solution and its benefits have been central to Henriques' work. However, the distinct contribution of his present essay lies in its thorough expansion on a theme until now only briefly touched upon: the profoundly powerful role that solving the problem of psychology can play in opening up ‘a new pathway for achieving unified knowledge’ (Henriques, 2008, p. 731). This project entails nothing

less than coherently interweaving the vast domains of knowledge encompassed by the sciences and the humanities—a project noble and grand in possibilities and implications, yet also one of staggering proportions when one reflects on the wealth of academic disciplines encompassed therein. Nevertheless, to conclude that unifying human knowledge is unachievable would constitute an intellectual foreclosure anathema to the spirit of scientific inquiry (see Mahoney, 2005).

Core to Henriques' analysis of the problem of psychology is the absence of a coherent, agreed-upon definition of the discipline's subject matter. In sync with others deeply concerned about psychology's status within the sciences (e.g., Staats, 1999), Henriques ties this definitional problem to the enormous pluralism and fragmentation in the field's subject matter, paradigms, concepts, and epistemological presuppositions (cf. Anchin, 2008b). Valuably reaching into the archives, he also cites Gordon Allport's observations to illuminate a less frequently recognized yet key dimension of psychology's diversity especially pertinent to the integration of human knowledge; succinctly summarizing, psychology 'pulls one simultaneously toward the natural sciences, the social sciences and the humanities,' and therefore as a discipline it lies at 'the center of the major intellectual fault-lines in knowledge' (Henriques, 2008, p. 737).

Henriques (2004b) is firm in his conviction that the problem of psychology must be solved for the discipline's multiple potentialities to be maximized. Going forward, he parts the seas of psychology's contentious diversity by homing in on the crucial point that psychology has traditionally spanned both the problem of animal behavior in general and human behavior at the individual level. Utilizing the ToK diagram as a map of the dimensions of complexity, Henriques proposes a definition of the discipline jointly anchored by psychological formalism as the science of animal behavior and human psychology as the science of human behavior. In this respect, it is critical that he also perceptively catches sight of a highly charged dialectic encased within the animal–human distinction that hangs suspended in irresolution, namely, 'the continuity–discontinuity [issue] between humans and other animals' (p. 1218). In one fell swoop, he also gives metatheoretical shape to these two domains, points the way toward reconciling many of psychology's epistemological problems, and defines psychology's place among the sciences.

As the science of mind grounded in the study of animal behavior, psychological formalism is conceptually and methodologically anchored in BIT and its five brain-behavior paradigms. In essence, BIT operates as the organizing principle of psychological formalism. Crucially, it also provides a coherent framework for understanding the continuity between animals and humans, because humans, 'as a type of animal' (Henriques, 2004b, p. 1211) by definition infused through and through with processes of mind, are also governed by the determinative biopsychological structures, processes, and dynamics

mapped by BIT. This fundamental animal–human continuity is formally incorporated into the domain of human psychology through specifying psychological formalism as one dimension of its hybrid structure.

At the same time, humans are discontinuous from animals by virtue of their embeddedness in an enormously complex sociolinguistic matrix that gives rise to unique adaptational demands that ineluctably permeate behavioral investments. As stipulated by postulates of the JH, foremost is the human problem of justification, and thus paralleling BIT's critical role in defining how animals and humans are continuous, the JH becomes the theoretical foundation for defining how humans and animals are discontinuous. It is through this sociocultural dimension of human behavior, given metatheoretical structure and meaning by the JH, that the domain of human psychology becomes yoked to the cultural level of complexity in the ToK System and thereby merges psychology with the social sciences.

It becomes evident that in fundamental ways Henriques' solution to the problem of psychology entails dialectical resolutions to counterposed perspectives. Psychological formalism and human psychology are coexistent and interwoven domains of psychological science that create a logical intradisciplinary bridge between the study of animal behavior and the study of human behavior. The issue of animal–human continuity versus discontinuity is dialectically resolved through BIT and the JH, which provide integrally linked theoretical frameworks for understanding how animals and humans are both continuous and discontinuous. Human psychology, as a hybrid discipline, is intrinsically dialectical in composition, bridging distinctly differential perspectives and methodologies of psychological formalism and the social sciences to comprehensively understand human behavior at the level of the individual. Moreover, the conjoining of BIT and the JH as foundational to human psychology's hybrid definition further buttresses its dialectical character.

Implications for the Discipline of Psychology: Epistemological Bridging

Henriques claims that his unified solution to the problem of psychology opens the way toward reconciling many of the epistemological divisions that have long plagued the field and sustained its fragmentation. I believe his assessment to be wholly accurate. However, the prospects of cohesively integrating diverse bodies of knowledge within the discipline are enhanced only to the extent that psychologists have a genuine interest in pursuing reconciliation among opposing foundational assumptions regarding such crucial issues as what constitutes legitimate and meaningful knowledge, acceptable modes of inquiry, and criteria for evaluating the admissibility of knowledge claims. These are paradigmatic questions, and the dialectic of psychological formalism and human psychology as defining the domains of scientific psychology

provides an inviting, internally consistent framework for building bridges between psychology's numerous epistemic disjunctions. The differential methodologies especially inherent to these respective domains are essential to developing these interpenetrative relationships.

Psychological formalism, consisting of the basic psychological sciences, is rooted in the tradition of modernism and the natural sciences, with its attendant empiricist and quantitative system of inquiry (see Anchin, 2008a). This epistemological system serves as the guiding paradigm for the bottom-up study of animal behavior in general, and its enduring essentiality for uncovering and understanding determinism and lawfulness in human behavior is incorporated into human psychology's superstructure. However, this epistemological system of inquiry, while integral to the social science dimension of human psychology through personality, social, and developmental psychology, is insufficient for fully capturing and developing knowledge about numerous additional dimensions of human psychology permeated by the human being's social embeddedness and enculturation—for example, subjective experience, meanings given to those experiences, and issues of human values, purpose, and intentionality (see Anchin, 2008a). The methodologies well suited to studying these quintessentially human phenomena entail qualitative methods of research (Camic, Rhodes, & Yardley, 2003). Rooted in an epistemology variously characterized as constructivist (Henriques, 2003), interpretive (Young, 1997), and hermeneutic (Anchin, 2008a), qualitative methodology provides a vital complement to quantitative experimental research methods for understanding human psychological behavior from the top-down sociocultural level, underscored by its integration of methodological strategies from other social sciences.

Through the equivalent status thus given opposing paradigms of inquiry by the unified theory of psychological formalism and human psychology, the groundwork is established for cultivating dialectical interactions between an array of epistemological polarities. A partial listing of these principal epistemological dialectics must suffice here; in each case, the first item in the dialectic is characteristically nested within psychological formalism, the second within human psychology as a social science: (a) Objectivity vs. Subjectivity; (b) Explanation vs. Understanding; (c) Causes vs. Reasons; (d) Determinism vs. Teleology and Agency; (e) Reductionism vs. Holism; (f) Analysis vs. Synthesis; (g) Linearity vs. Nonlinearity; (h) Empiricism vs. Constructivism/Hermeneutics; (i) Nomothetic vs. Idiographic. These configurations speak to core issues in the philosophy of science and the philosophy of social science (Martin & McIntyre, 1994; Newton-Smith, 2000), and as both a natural and a social science, psychology is in the unique and indeed enviable position of providing a disciplinary context for advancing the very nature of scientific epistemology, transforming enduring schisms into fertile dialectical relationships and syntheses.

Implications for the Integration of Human Knowledge

The central thesis of Henriques' (2008) essay is that the ToK System and his solution to the problem of psychology effectively address key obstacles to unifying human knowledge encountered by Wilson's consilience model (1998), and that in so doing they map out 'a coherent pathway ... for the unification of knowledge more generally' (Henriques, 2008, p. 741) In my view, Henriques argues his case with persuasive force and effectiveness, advancing insight into points of contention and presenting tightly reasoned syntheses that deserve serious attention. These arguments stand on their own merits; the point that I highlight here is that the dialectical formulations that infuse the ToK System and the definition of psychology inevitably prove fundamental to these solutions. With each issue impeding unification, Henriques knits together splits by applying these conceptions. For example, at its core the problem of reductionism pivots around conflicting views as to whether a materialistically based, bottom-up microlevel perspective or a psychosocially based, top-down macrolevel perspective provides the most valid framework for explaining and understanding nature and its human inhabitants. By incorporating—and, crucially, granting equivalent ontological status to—the human being's 'biophysical base ... [and] mental behaviors and justification systems' (Henriques, 2008, p. 741–742), the ToK dissolves this tension by providing a framework that makes it clear that both bottom-up and top-down explanatory frameworks are essential for thorough scientific understanding, while also providing a unifying framework for developing understandings about how the findings are coherently interrelated.

In the case of the boundaries dividing the natural and social sciences, the ToK System provides a consilient way of understanding the organic continuity between these two vast realms:

... the physical, biological sciences and the disciplines that make up psychological formalism (e.g., the cognitive, behavioral, and neurosciences) would make up the natural sciences, whereas human psychology (e.g., personality, social, clinical) would be merged with the rest of the human sciences (e.g., anthropology, sociology, economics) to make up the social sciences. (Henriques, 2008, p. 742–743)

And with regard to establishing bases for a more harmonious relationship between the sciences and the humanities, Henriques concentrates on the robust fact–value distinction as a fundamental way to understand the dissonance between these two cultures and discusses the JH's capacity to create a significant connective pathway. Maintaining that facts (the focal point of science) and values (integral to the humanities) are interrelated in all knowledge systems, and recasting facts as descriptive justification systems (statements of what 'is') and values as prescriptive justification systems (statements of what 'ought to be'), he proposes that 'because all knowledge systems are complicated admixtures of facts and values, it is far more accurate to conceive of the tensions

between descriptive and prescriptive justifications as existing on a dialectical continuum rather than as a dichotomy' (Henriques, 2008, p. 745).

The bridges that can thus be erected between the natural sciences, social sciences, and humanities through the unifying metatheory of the ToK System and its foundations of ontological pluralism and epistemological dialecticism shimmer with heuristic potency, creating endless opportunities for the disciplines to integrate their vast pools of knowledge. The illuminating essays by Quackenbush (2008) and Shaffer (2008) are prototypic exemplars of this process—fractals of the immense unifying power of the ToK System. Overarchingly framed within the context of the fact–value distinction, Quackenbush's focus is on the profoundly important 'problem of value'—in essence the social sciences' marked underinclusion of the moral domain in holistically accounting for the cultural-person-as-a-whole—as 'the most significant threat to the project of unification' (p. 766) within the social sciences generally and psychology more specifically. Shaffer's interest lies in explaining the development and dynamics of religion as a large-scale justification system and, more broadly, the emergence of different cultural institutions (e.g., religion, science) defined by the pursuit of distinctly different ideological goals. As their incisive analyses and conceptions unfold, both Quackenbush and Shaffer draw heavily on the comprehensive, intrinsically integrative scope of the JH as a framework for cohesively interweaving diverse, multidisciplinary bodies of pertinent knowledge and thought, crystallizing central issues, and formulating synthetic solutions and explanations.

Conclusion

There should be no mistaking the fact that the ToK System is an elaborate metaphysical claim about the nature of reality as it has evolved over the eons of cosmic time and space and as currently constituted. Henriques' metatheory is thus distinctly foundationalist in nature. Certainly in the current marketplace of ideas, foundationalism is risky business, to no small extent a consequence of the forcefulness of the academy's postmodern, interpretive turn (see Hiley, Bohman, & Shusterman, 1991). Yet the marvelous paradox of the ToK System is that, while foundationalist, it also contains in rich abundance the seeds of its own evolution. This is integrally tied to one final property of dialecticism that I wish to take note of here, and this is the continuousness of change in dialectical processes and formulations:

Rather than existing in a rigid stasis, dialectics emerge and combine in ongoing processes. As such, a dialectical resolution is never final. The synthesis leading to one version of the 'truth' will, in time, be supplanted by new syntheses arising from the same or new dialectics. (Erbes, 2004, p. 205)

It is intriguing indeed that the ToK System is foundationalist and it is dialectical—a dialectic in itself. And considering *this* dialectic in light of the principle of

change articulated by Erbes (2004), the ToK System carries the highly warranted potential to exert a major impact on the academy with an extraordinarily comprehensive metatheory infused with its own capacities for limitless growth, change, and evolution.

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