

PSYCHOLOGICAL INQUIRY AND THE ROLE OF WORLD VIEWS

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ABSTRACT: A variety of world models have influenced psychological inquiry. However, recent theoretical analyses of the field have argued that the lack of a single metatheoretical framework in which to base psychological inquiry may have severe negative consequences. In this paper I review three distinctive world views which have influenced psychological inquiry and develop the idea that, at least at this point in the history of psychology, the use of multiple metatheoretical perspectives may be beneficial. Specifically, I suggest that using various metatheoretical views may minimize the perpetuation of limited systems and develop a point of view for thinking about metatheoretical pluralism from several philosophical/intellectual traditions. Moreover, I argue that acknowledging the viability and utility of multiple metatheoretical perspectives does not necessarily resign psychology to perpetual disunification or fragmentation.

Imagine Ptolemy's dismay if he could have reviewed Kepler's three laws of planetary motion. Kepler's first law states that the planets move in elliptical orbits. Ptolemy, like the excellent second century astronomer that he was, "knew" that planetary motion must be circular or compounds of circles (i.e., epicycles). Certain metatheoretical assumptions about the nature of reality were in vogue in Ptolemy's time and subsequently. The circle was considered a perfect shape and the heavens perfect as well. The deduction regarding planetary motion was obvious from these metatheoretical assumptions and even corresponded fairly well with observations about planetary motion. Although the system was a good start and was very useful, Ptolemy's system was limited and dogmatic adherence to the metatheoretical assumptions about how to conceptualize reality maintained Ptolemy's limited system. Bertrand Russell (1945) noted the following about Kepler's theory: "The discovery of the first law, that planets move in ellipses, required a greater effort of emancipation from tradition than a modern man can easily realize" (p. 530).

The point of this diversion into the history of astronomy is that an immature science should not rely complacently on any single critical conceptual factor. More specifically, reliance solely on a particular assumption for the conceptualization of

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scientific findings may place too much weight on a single conceptual factor. However, if all metatheoretical¹ frameworks guiding scientific inquiry are subject to producing inaccuracies and/or maintaining a limited understanding of phenomena, on what conceptual scheme should a science be based? Is it possible that the “methods” of science for psychological inquiry do not need to be based on any one particular and rigidly defined broad metatheoretical scheme imposed on the field? It is widely accepted that world views influence how scientists conduct science (Lyddon & Bradford, 1995; Kurtines, Alvarez, & Azmita, 1990) but if scientific inquiry can be conducted within almost any metatheoretical framework, then it is possible that they should be used within various frameworks to mitigate systematic error produced by viewing psychological phenomena through the lens of a single metatheoretical scheme.

A variety of distinctive metatheoretical frameworks have guided psychological inquiry. For example, it has been over 70 years since J. B. Watson (1924) promoted his mechanistic vision for psychology, yet a variety of world models still influence psychological inquiry (Overton, 1984; Overton & Reese, 1973). However, recent theoretical analyses of the field have argued that the lack of a single metatheoretical framework in which to base psychological inquiry may have negative consequences (see Yanchar, 1997). For example, the question has often arisen as to whether psychology can be optimally useful under disunified conditions (see e.g., Staats, 1991; Rychlak, 1993, Yanchar, 1997). Slife and Williams (1997) have recently argued for the recognition of a new subdiscipline of theoretical psychology with one of its goals being the articulation of ways to decrease fragmentation in the field.

I attempt to add to these discussions by developing ideas from several philosophical/intellectual traditions. First, I review three world views which have influenced psychology and identify a common theme. Each world view provides that there is some reason to pursue an understanding of psychological phenomena because there is at least some level of patterning to reality². Next, because it seems

¹“Metatheoretical” as a general term, refers to the philosophical (i.e., epistemic, ontological, metaphysical, etc.) assumptions which influence or form the basis/structure of various disciplines in science and the social sciences (see Hoshmond, 1996; Fiske & Shweder 1986). This paper uses the term “world view” (Pepper, 1942) to refer to one or more of the several distinctive metatheoretical systems.

² The phrase “patterning of reality” refers more to “order” than “lawfulness” and was chosen to avoid certain criticism that could be leveled against saying that “all the world views say that reality is lawful” Specifically, using the term “lawful” is likely to be interpreted as saying that each of the world views assume that there are laws of nature independent of our inquiry into them. However, even if “reality” is completely a social construction, for example, it is safe to say that there would still be discernable patterns in this socially constructed reality for psychologists to describe.

that each of the world views can function as a framework for suggesting questions and framing answers aimed at understanding various psychological phenomena, I argue that the use of multiple metatheoretical perspectives can be beneficial to psychological inquiry. More specifically, I suggest that using various metatheoretical views can minimize the perpetuation of limited systems and suggest that at certain levels of understanding “disunity,” at times, may be beneficial. In an effort to delineate the extent to which theoretical pluralism is beneficial to psychological inquiry, I then attempt to develop the idea that using multiple metatheoretical views as divergent or complementary allows for the cross use of methodological heuristics and explanatory schemes but also allows that certain organizing frameworks may be most appropriate for the investigation of certain phenomena. Finally, I argue that acknowledging the viability of multiple metatheoretical perspectives does not resign psychology to perpetual disunification. I suggest that useful metatheoretical frameworks should be further developed and systematized but that we must be willing to continue to question their fundamental assumptions. Moreover, I suggest that although unification in psychological inquiry may be facilitated by metatheoretical developments, unification, at least in a “Kuhnian” sense, may not occur at the level of world view. That is, it is not necessarily a metatheoretical foundation (e.g., a distinct world view) that will unify psychology but mutual research goals directed at important problems which engage large groups of psychologists.

World Views Operating in Psychology

The present review is not comprehensive but simply illustrative of the range of world views which have influenced psychology.³

Organismic and Mechanistic

Historically, two philosophical trends influencing psychological inquiry center around viewing reality as being or as becoming (Overton, 1984). The ancient Greek philosopher Heraclitus saw the world in a perpetual state of flux and transformation. This is an example of the trend of conceptualizing the world as becoming. On the other hand, the ancient philosopher Parmenides saw the world

³ The world views examined were chosen because of their salience and because they have become very familiar to many psychologists (e.g., descriptions of one or more of these views are now often found in textbooks; see Cobb, 1998; Kurtines & Gewirtz, 1995; Steinberg, 1996). Thus, they provide fairly concrete examples for discussing the abstract issues addressed in this paper.

as static, in a state of “being” (see Russell, 1945). In the modern era, philosophical trends derive from Locke and Hume assuming that true reality or the noumenal world can be directly perceived and therefore utilize and give emphasis to empiricism. Others have followed the intellectual tradition of Kant assuming that only the phenomenal world is directly experienced by the individual and thus emphasize the rationalistic, and dialectic methods of knowing advocated by Hegel. Overton (1984) utilized the conceptualizations of the mechanistic world view, which uses the machine as a metaphor for the nature of reality, and the organismic world view, utilizing the plant as metaphor, to characterize these traditions and their influence on psychological inquiry. Overton (1984) outlines three spheres of distinction between the mechanistic and organismic influences on psychological inquiry: hard core assumptions, positive research heuristics, and families of theories.

Hard core assumptions for the organismic perspective include a world model of organization, activity, and purposeful, dialectic change. A typical epistemological stance would be a rationalistic constructivism. The organismic model of humans suggests an active organism with inherent organization of psychological and biological functions, actively constructing reality around them. The mechanistic hard core assumptions include a world view of uniformity, stability, fixity, and change as linear and/or accidental. A typical epistemological stance would be positivism, or realism utilizing empiricism. The mechanistic human being is a complex machine (e.g., the brain is a complex computer). The mechanistic model of the human is inherently at rest where activity is in response to external stimulation.

From the hard core assumptions are derived positive research heuristics. These are rules of thumb for research programs based on the underlying assumptions within each view and particularly influence which methodology is considered most appropriate or useful. Organismic heuristics include holism, structure-function analysis, necessary change, discontinuity-continuity, reciprocal causality, and organized complexity. Positive heuristics in the mechanistic view are elementarism, antecedent-consequent analysis, accidental change, strict continuity, unidirectional causality, and linear causality. In terms of families of theories, the extent to which a theory conforms to one or the other of these heuristics allows categorization as organismic or mechanistic. Overton (1984) suggests that the developmental theory of Piaget, Chomsky’s language theory and Rychlak’s humanistic theory are examples of the organismic position, and Skinner’s operant conditioning theory and the Information Processing approach are examples of the mechanistic view. For example, Piaget seems to fit clearly into

the organismic view. Piaget's theorizing was influenced by biology and structuralism (Miller, 1993) and thus proposed that the child is inherently active and cognitive development, like embryological development, involves an unfolding (e.g., necessary change) of an organized structure (e.g., structure-function analysis) which becomes more differentiated (e.g., stages, discontinuity) over time through the process of assimilation, accommodation and equilibration occurring in an organized whole (e.g., holism, organized complexity).

The following critique is not aimed at challenging the notion that world views influence research and practice. The purpose is to highlight the connections between seemingly divergent views in terms of how the "positive" research heuristics are actually used in psychology. Specifically, the potential for theories not to fit exclusively into either the organismic or mechanistic position⁴, as well as, the cross use of methods for knowledge acquisition and positive heuristics, may lead one to wonder how much a dichotomy of "views of reality" is just semantic legerdemain. It seems that a strict dichotomy may really be verbal sleight of hand because, as psychologists, we may utilize an organismic structure-function research heuristic to study the cognitive development of children (e.g., Piaget's 1983 model) but utilize an antecedent-consequence research heuristic such as an operant conditioning procedure to shape appropriate behavior in a classroom with these same children in an effort to facilitate classroom learning. What seems common to the views is that both views assume that the world is structured so that patterns in its composition can be described, and thus they provide conceptual guides for understanding aspects of the world. Both world views can, therefore, help in developing equally useful applied techniques.

Overton (1984) suggests that the organismic and mechanistic positions can only be integrated usefully for developmental psychology if the mechanistic is incorporated into the organismic framework. In Overton's view the organismic must subsume the mechanistic position. So, at some level, Overton suggests that an integration is possible. I would submit, however, that the cross use of heuristics does not necessitate one view subsuming the other. The conceptualization of 'the world' as either organismic or mechanistic can be viewed as an attempt to conceive a patterning of reality that is understandable. If we can accept that such conceptualizations are based on their utility for understanding, then there is no

⁴ Consider the information processing approach (e.g., Atkinson & Shiffrin, 1960; McShane, 1991; Sternberg, 1993). For example, the Atkinson Shiffrin model of memory (Atkinson & Shiffrin, 1969) seems like a good mechanistic model. Indeed, analogy to a machine, the computer, provided researchers with an extremely useful heuristic for inquiry into memory and intelligence. However, the information processing approach may not be completely mechanistic. For example, the Atkinson Shiffrin model is not completely linear, it proposes a variety of executive control processes, which may suggest an active structure organizing the simpler linear operations (see also Sternberg's 1993 model of intelligence).

real paradox or logical inconsistency in using mechanistic methods within an organismic framework. Utilizing organismic heuristics within a mechanistic framework would be acceptable as well. Conversely, according to the view I am attempting to develop in this paper, Overton (1984) may be correct in advocating that certain phenomena in developmental psychology, for example, (with an intrinsic focus on change) may be best understood in an organismic framework to the exclusion of other frameworks. For example, because the organismic world view focuses on complex change it may indeed provide the most useful framework for thinking clearly about developmental change, for example.

Thus, the view I am attempting to develop is that theoretical work such as Overton's where the world views are sharply contrasted and developed as internally consistent distinctive frameworks is highly important. For example, Overton's work helps in identifying distinctive metatheoretical influences on past research programs, identifying potential guides for new research programs, etc. On the other hand, in the view I am presenting, we must also be willing to admit that these sharply delineated frameworks, alone, cannot guide all useful psychological inquiry.

Contextualism

Contextualism refers to a metaphysical, ontological, and epistemic world view which proposes that knowledge and being only have meaning in the social, environmental, and historical context in which being and knowledge are considered. Contextualism's root metaphor is the historically situated action (Hayes, 1993; Hayes & Hayes, 1992). In terms of the hard core assumptions, reality for the contextualist is a web of interconnection and interpenetration, being is defined in terms of the entity's connection with its context and truth is historically dependent. For the contextualist, knowledge is intimately linked to and created by the social, conversational, or environmental context in which the events under consideration take place.

The developmental theories of Vygotsky (see Miller, 1993; Wertsch & Tulviste, 1992) and Bronfenbrenner (1986) have been guided by a contextual world view and are also illustrative of the contextual research heuristics. These contextual theorist's research use the child in a context as the unit of study, look for the sociocultural origins of behavior and favor a 'dynamic assessment'. For example, Bronfenbrenner (1986) has described several levels of context that potentially influence development (i.e., the microsystem—for example, the child's home, school, etc., the mesosystem—a group of microsystems, the exosystem—for example, the government or economic system where the child lives, and the

macrosystem—for example, the child’s culture). Moreover, instead of assessing development as the product of previous learning, dynamic assessment in contextual theories (e.g., Vygotsky) involves assessing what the child can do in a context (e.g., completion of a task with assistance from others, or when a task facilitating tool is available).

One of the greatest strengths of the contextual approach is its emphasis on a broad perspective and an ecological stance. The contextual approach allows for multidimensional factors and their interactions working to influence psychological phenomena. Other specific strengths are attention to the cultural influences on behavior and attention to broader environmental influences beyond the immediate stimuli impinging on behavior. For instance, contextual-developmental approaches (e.g., Vygotsky) emphasize the child in their everyday environments and thus the potential for ecological validity in contextual research is high.

In a contextual stance knowledge can be seen as relative to the context from which it is derived. Given this potential for relativism, can contextualism serve as a useful world view for psychological inquiry, or should it be rejected as a basis for scientific research programs? Overton (1984) suggests that the contextualist position is too ambiguous to resolve conceptual and empirical problems. Overton’s argument of contextualism’s ambiguity is couched in his view that contextualism can fit in either the mechanistic or organismic world views and that this cross fitting leads to conceptual confusion. Since the resolution of conceptual and empirical problems is the aim of science, contextualism cannot serve as the basis for scientific research programs (Overton, 1984). However, using the contextual metaphor as divergent from, or complementary to, other world views depending on whether or not understanding is facilitated, would provide a remedy for Overton’s criticism by, for instance, not using the contextual metaphor when its use only adds confusion. For example, detailing the effects of a mother’s voice on subsequent responding in an infant may not require a contextual stance for the findings to be externally valid, useful, or important. It may be that the contextual world view provides a better metatheoretical framework for many social level or broad environmental analyses or for providing a perspective within which, for instance, mechanistic elemental analyses can be viewed.

In a similar vein, Follette and Houts (1992) assert that the main problem with contextualism as an acceptable philosophy of science is that it must assume that there is “no truth separate from the momentary experience of the contextual act” (p.255). However, the contextual position doesn’t seem to assume that facts have no temporal durability. It is just that the temporal durability of facts depend on the temporal durability of contexts. Moreover, relativity in the contextual view does not necessarily mean that any proposition is as true as any other, but that

concepts have validity in a context and not as discrete fact. For example, to describe a basic finding regarding the temperature at which H₂O becomes a gas the statement “Water begins to boil at 100°C Celsius” seems like a straight forward true empirical statement. However, the statement is false in high elevations where water boils at lower temperatures. The statement “Water begins to boil at 100°C .” is only true in the context of sea level (or, in other terms, in the context of certain atmospheric pressure). Although this is a simplified example, it highlights the contextual argument that all facts occur in a context. Thus, in terms of approximating truth, contextual analyses may be more accurate by requiring that the conditions (e.g., atmospheric pressure—altitude) under which a proposition (e.g., the boiling point of water) is thought to be true be specified.

Follette and Houts (1992) further claim that contextualism has no experimental methods and thus must borrow from mechanism to demonstrate knowledge. However, the contextualist position does assume that patterns can be described within the context in which they are considered and so the contextualist position shares this common position with the other views presented. As I argued above, the cross use of heuristics does not necessitate one view subsuming the other. The conceptualization of knowledge as intimately linked to a context is another attempt to conceive a patterning of reality that is understandable. So, the utilization of mechanistic or organismic heuristics within contextualism does not seem to be a paradox. In fact, utilization of certain mechanistic or organismic methodological heuristics within contextualism could decrease confusion if certain contextual analyses become too complex to be understandable and also, on the other hand, increase the ecological validity of mechanistic and organismic methods.

Summary

Each of the world views reviewed has influenced how psychological research has been conducted and has served as guides for understanding and interpreting this research. However, each of the views alone is not adequate to guide all psychological inquiry (e.g., there are conceptual and practical limitations to each view). Yet the research influenced by or conducted within the frameworks have each made useful contributions to psychology. Clearly there is metatheoretical pluralism in psychology. But is this fragmentation—“bad pluralism” or a rich array of conceptual schemes—“good pluralism.” What is needed are ways of

thinking about this state of psychological inquiry which will help to delineate the extent to which metatheoretical pluralism is beneficial to psychological inquiry.⁵

A Common Connection

One way to begin to determine if metatheoretical pluralism can be beneficial is to identify existing unity in psychological inquiry. A connection amongst the various world views reviewed above can be found in a common assumption or theme. The nexus amongst these views is that each provide that there is some reason to pursue an understanding of psychological phenomena because there is some level of patterning to reality. This can be summed up, for the purpose of the following review, by stating that they each assume that there are consistencies in existence. Drawing from Heidegger's (1927/1977) terminology, consistencies in existence can be thought of as patterns or uniformities with some level of temporal durability within the context of being. Consistencies are patterns with temporal durability, for example, the relationship of entities to other entities/organisms, objects to other objects and objects/entities to contexts. The contexts in which consistencies are assumed to be capable of being described, as well as the assumed level of patterning to reality, changes as a function of the world view. However, even a world view which assumes constant change assumes a level of consistency to existence by predicting constant change (nor would such a view seem to exclude the possibility of discerning patterns in the change). It seems, therefore, that at a very abstract level all psychological inquiry is unified by this common connection.

Each of the world views presented assumes that some form of knowledge about the world or individual is possible. Each view assumes that a description of patterns or consistencies is possible regardless of whether the description is couched in a reality that is constituted as a big machine or big organism, or is socially-historically situated as in the contextual position. They differ in many respects, such as the extent to which descriptions of consistencies may transcend

⁵ There is a rational opposition to the haphazard rapprochement of divergent theories (see Rychlak, 1993). Rychlak (1993) has gone so far as to suggest that a complete rapprochement amongst divergent theories is not possible. The view presented here could therefore be seen as promoting useless forced eclecticism. However, this is contrary to my view (i.e., my view suggests integration when it is useful but also maintaining distinctions when they are useful). Moreover, a pragmatic stance and a hierarchical view of knowledge discourse (Metatheoretical level—Theoretical level—Practical level [facts and data]; e.g., Kurtines, Alvarez & Azmita, 1990) suggests that the incompatibility of divergent theories may be based largely on divergent theories fundamental opposition at a *theory* level analysis. So, although specific divergent theories may be incompatible, it may be that the data and/or ideas may be integrated at some other level (e.g., data in terms of the practical implications, or ideas at the metatheoretical level). This is an important topic for further theoretical analysis, however, a full treatment is beyond the scope of the present paper.

social-cultural-contextual bounds or whether or not truth is absolute or relative to context; however, they do assume that at some level consistencies can be described. Moreover, none of the views seem antithetical to psychological inquiry.

If it is assumed that understanding is possible, and consistencies or patterns can be described no matter what the ultimate nature of reality is (as represented by world view) then it seems that each of the world views reviewed can serve as the basis for research programs aimed at understanding psychological phenomena. However, as noted above, certain phenomena in psychology may be best understood in one framework to the exclusion of other frameworks. I suggest that regarding the various world views as divergent or complementary depending on the pragmatics of the situation is a useful way to think about the current state of metatheoretical pluralism in psychology.

Regarding the various world views as divergent or complementary allows for the cross use of explanatory schemes and methodological heuristics but also allows that certain organizing frameworks may be most appropriate for the investigation of certain phenomena. For instance, the level of analysis (see Gewirtz, 1969) required for studying particular phenomena within certain research programs may be best derived from different world models (e.g., conditioned responses to stimuli in a mechanistic model, cognitive development in an organismic model, and social influences in a contextual model) and thus, at times, contrasting the world models may facilitate a clearer delineation of particular research programs.

There is a broad rationale for accepting the viability and utility of multiple metatheoretical perspectives guiding psychological research. Specifically, rigid adherence to a particular metatheoretical view's conception of knowledge is likely to produce dogmatic positions which could stifle the scientific enterprise if actualized in the practice of a science. Dogmatic adherence to the extremes of a world view's definition of knowledge can negate its utility for scientific inquiry. More specifically, although science cannot avoid some a priori assumptions, the a priori assumptions should not inexorably demand what scientific knowledge "must be". Preconceptions, values, judgments as to good and bad right and wrong, influence all science (Kurtines, Alvarez, & Azmita, 1990), indeed all philosophy (Nietzsche, 1886/1990). The framework presented here, however, attempts to foster an attitude of metatheoretical scientific inquiry which is itself experimental.

The relentless pursuit of knowledge through continuous questioning of fundamental assumptions is the basis for what Kaufmann (1974) calls "Nietzsche's method." Kaufmann (1974) claims that Nietzsche used aphorisms and appears to have no systematic philosophy because a "systematic" philosophy, in the sense that Kant and Hegel had systems, must be based on some fundamental assumptions.

For Nietzsche (1886/1990; 1878/1996), the failure to question everything, especially one's own assumptions, only serves to perpetuate ignorance, error and intellectual deceit. "It has gradually become clear to me what every great philosophy has hitherto been: a confession on the part of its author ... that the moral (or immoral) intentions in every philosophy have every time constituted the real germ of life out of which the entire plant has grown." (Nietzsche, 1886/1990 p. 37). To avoid dogmatic adherence to potentially limited or less useful systems, it seems that psychology would benefit from maintaining this "experimental attitude" about its metatheories. This is not to suggest that individual researchers should attempt to apply mutually exclusive notions simultaneously to their research programs nor that psychologists should or can avoid a priori assumptions when conducting research. Nietzsche's "method" suggests that psychology should be willing to make repeated changes to its philosophical structure and that psychologists continue to question their fundamental assumptions. It suggests that the frameworks of psychological inquiry must remain experimental. Experimental in the sense of being open to questions regarding their basic assumptions.

Does this mean we should never have a coherent set of ideas to guide psychological inquiry? I think the answer is "no." For example, even Nietzsche decided on certain themes to develop (e.g., the ubiquity of value judgements in philosophy, the will to power, the eternal recurrence). In fact, the questioning of our basic assumptions can actually be a way to develop more coherent or useful frameworks. For example, Foucault (1972) was influenced by Nietzsche's method (particularly as expressed in *On the Genealogy of Morals*, Nietzsche [1887/1967]). Drawing from Foucault's (1972) examination of knowledge development, world views can be seen as forming a "unity of discourse" (i.e., a system of relations identified by various terms [e.g., literature, medicine, insanity, mechanistic science] which encompasses a set of concepts, ideas, constructs, etc.) which may or may not be justified or useful. The reason for questioning the unities, according to Foucault (1972), is so that new and better or more useful unities of discourse can be formed "... by freeing them of all the groupings that purport to be natural, immediate, universal unities, one is able to describe other unities, but this time by means of a group of controlled decisions" (p. 29).

In addition to drawing from Nietzsche and Kaufmann's analysis of Nietzsche's method, the view presented in this paper draws saliently from the pragmatic tradition (James, 1907/1981; Pierce, 1878). The notion of unifying seemingly disparate concepts is evident in the philosophical work of William James, particularly in the book *Pragmatism* (James, 1907/1981). James (1907/1981), for instance, sees such world conceptualizations as rationalism and

empiricism complementing each other, each describing reality depending on how the question is framed and the level of knowledge desired by the questions being asked. The utility of each particular view being determined by the pragmatic implications and utility of that view. A pragmatic stance suggests that the validity of particular world views for psychology can be based on the pragmatic implications of that view for psychological inquiry. At a practical level, if a particular world view has pragmatic utility in terms of facilitating types of psychological inquiry, then that view should be used. However, again drawing from Nietzsche, the view presented here suggests maintaining an experimental metatheoretical attitude (in the sense of continuing to question basic assumptions) and thus suggests that pragmatism's assumptions should, at times, continue to be questioned as well.

The view I am presenting also draws on the notion of complementarity. Current views of complementarity in psychology attempt to provide a framework in which seemingly contrary notions about specific phenomena, or opposing conceptions which seem equally valid, can be harmonized or better understood (e.g., Rychlak, 1993; 1994; Snyder, 1989; 1994; Stephenson, 1986; Weems, 1999). The theory of complementarity originated in western science with Neils Bohr as an attempt to explain problems in Physics (for a more complete review, including an expanded discussion of the similarity of Bohr's views with those of American psychologist and philosopher William James, 1914, see Holton, 1988; also see Capra, 1985, for a review of the notion of complementarity in eastern philosophy). Classical physics and the new quantum physics gave seemingly dichotomous views in several areas. First, large scale systems such as planets or billiard balls could apparently be observed and described without interference from the observer. This is not true of quantum systems. In quantum systems the observation has a profound effect on the state of the system, changing or altering it from its original condition. Second, in classical or relatively large scale systems both causality chains and space-time coordination exist simultaneously. For instance, the contact of one stationary billiard ball by another ball that is in motion is immediately followed by the stationary ball moving. However, in quantum systems causation works differently (i.e., the spatial and temporal correspondence that occurs on the scale of every day experience is different in the quantum realm). Finally, the classic example concerns the nature of light. In the electromagnetic theory the nature of light is described as a wave. In quantum theory light is described as a particle, the photon.

Bohr suggested that these seemingly paradoxical conceptions actually complement each other and that one is not ultimately wrong and the other right.

The particle-wave aspect of light illustrates this notion. Depending on the apparatus used to observe the nature of light, the results of the observation suggest that light is either a wave or a particle. To say then that light is a particle, or light is a wave does not completely explain light. My thesis in the present paper is somewhat similar. Specifically, it suggests that, in terms of metatheoretical frameworks, seemingly opposite views may be equally valid due to the limitations of both views. The limitations are due to each theory missing some essential information because the relevant data are not yet collected or not possible to collect. However, the view presented here advocates a dialectical process of complementarity and divergent use of the world views and does not suppose that world views are not somehow subsumable under another framework (e.g., through the description of new unities).

An immediate practical concern can be raised from the view I have presented. Specifically, developing our sophistication in utilizing or understanding the differential utility of various metatheoretical views is not an easy task. Deciding which metatheoretical views are “better” or “more useful” is not unproblematic. I am arguing, however, that we begin to ask these questions more directly than has been done previously. Unless we ask questions about which metatheoretical views are “better” or “more useful” directly, we are accepting blind guides. Moreover, I believe these questions can be answered. One way is to more explicitly consider metatheoretical questions in specific research programs (see Kurtines et al. 1990; Silverman & Kurtines, 1996; 1997; Weems, 1998). For example, Silverman and Kurtines (1997) have discussed the impact of metatheoretical issues, specifically postmodernism, on their childhood psychosocial intervention research. Another way is to detail the specific influences metatheory can have on the practice of psychology. For example, Lyddon and Braddford (1995) recently conducted an investigation of the impact of philosophical commitments on therapy approach preferences in a sample of 59 psychotherapy trainees and found evidence indicating that the trainees philosophical commitments were systematically related to their therapy preferences. For instance, results indicated that a social constructionist view was negatively correlated with a behavioral therapy preference.

A related concern with the view I have presented involves what is actually meant when one says “world views influence psychological inquiry”. Specifically, influence can mean two things. First, that world views function as frameworks for suggesting questions and framing answers and explanations in psychological inquiry. Second, that world views represent the fundamental grounding of psychological inquiry (i.e., the fundamental epistemic and ontological basis for inquiry). It is possible that these two “influences” are so fundamentally linked that

they cannot be separated. If this is the case, the argument I have made may seem less convincing because it can be suggested that there is not much choosing to do with regards to our world views. In essence, the argument would be that our psychological inquiry is fixed by world views and therefore we cannot really transcend them. However, I am not sure these two influences are so fundamentally linked that they cannot be separated. As I noted above, it is possible to explicitly consider metatheoretical questions in specific research programs and also to detail the specific influences metatheory has on the practice of psychology. In this way we can be more informed about how different metatheoretical views facilitate asking questions and framing answers about psychological phenomena and therefore better discern the relative utility of various world views for psychological inquiry.

Moreover, borrowing from Rorty's (1979; 1989; 1992) views on language and "Nietzsche's Method," I believe that by continuing to question our fundamental assumptions our world views can evolve in more useful ways and our inquiry will benefit as a result. As noted above, this is based on accepting that our world models are a function of human attempts for understanding and not "mirrors of nature" (Rorty, 1979). For example, Rorty (1989) argues that one language (e.g., in this paper the language of the mechanist, contextualist, etc.) is not better than another because it better corresponds to the world than the other. "... the fact that Newton's vocabulary lets us predict the world more easily than Aristotle's does not mean the world speaks Newtonian" (p. 6). In Rorty's view (1989) vocabularies (e.g., world models) are constructions. Some vocabularies allow us to predict aspects of the world better than other vocabularies. For instance, by helping to develop better forms of nonlinguistic behavior (e.g., experimental techniques). Drawing from this view, part of the purpose of this paper is to begin an effort to re-describe how world views *should* influence psychological inquiry.

Conclusion

Kuhn (1970) noted that the early stages of most sciences are characterized by competition amongst a variety of "distinct views of nature, all roughly compatible with, the dictates of scientific observation and method" (p. 4). Regarding mature science he states "... it has acquired firm answers to questions such as the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses ..." (pp. 4-5). Regarding scientists in mature fields "... the activity in which most scientists inevitably spend almost all their time, is predicated on the assumption that the

scientific community knows what the world is like” (p. 5). However, for psychology to become a “mature science” it may have to acquire firm answers to a much different set of questions because psychology experiments themselves have not typically aimed at delineating the structure of reality (i.e., knowing what the world is like). That is, psychological research has not typically had as its stated aim salient implications regarding the ultimate nature of reality (compared to, for example, particle accelerator experiments in Physics which attempt to test what the ultimate constituents of matter are). For much of the history of the mature sciences, on which Kuhn was commenting, the experiments had very salient implications for conceptualizing the ultimate nature of reality. Thus, the world views of physicists, for example, are much more closely based on their experiments than are the world views (in the sense of nature of reality) of psychologists based on their experiments. So, although psychology may develop into a paradigmatic—in a “Kuhnian” sense—mature field it need not necessarily be because it’s “scientific community knows what the world is like” but maybe because its scientific community agrees on what particular behaviors are like or what behaviors are important to investigate.

In summary, I do not believe that using multiple metatheoretical positions or testing multiple metatheoretical positions’ ability to facilitate understanding resigns psychology to perpetual fragmentation (i.e., “bad pluralism”). In fact I have tried to point out that all psychological inquiry seems already unified by the common connection that there are indeed discernable patterns or consistencies possible for psychological inquiry to describe. The view presented here does not imply that unification of psychological inquiry is not possible, but that unification may take place on a level which is different from the level of world view as it has been traditionally understood (e.g., psychology may need a wholly different type of view, or may not need metatheoretical “Foundations”). It does suggest that an active evaluation of the implications of different world views for psychological inquiry should be undertaken. Moreover, the experimental metatheoretical attitude described in this paper and the examination of whether various metatheoretical conceptions facilitate or hinder an understanding of particular psychological phenomena may help to further develop the metatheoretical frameworks influencing psychological inquiry. For example, it may help to clarify what type of firmly established heuristic is needed for paradigmatic psychology research. However, it may simply be particular research goals aimed at specific problems, that are compelling enough to draw the attention of large groups of psychologists, which serve to further unify psychology.

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