Raising the Consciousness of Researchers:
Hidden Assumptions in the Behavioral Sciences

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Abstract

Behavioral science researchers have long acknowledged that their methods had certain technical limits—errors of measurement, design restrictions, problems of inference, etc. Still, within these limits, many researchers have assumed that their methods provided them with truthful, accurate, or objective renderings of their subject matter. Often overlooked, however, are the philosophical limitations of method qua method. As recent scholarship has demonstrated, method is not a neutral tool of inquiry but a biased metatheory about how theories and "findings" are to be adjudicated. This bias is perhaps most evident in the modernist foundations for traditional science. Three modernist assumptions are described as integral to both the philosophy and the practice of traditional behavioral science: universalism, materialism, and atomism. For purposes of contrast and to facilitate conversation about these modernist assumptions, three alternative, postmodern assumptions are also described: contextuality, lived experience, and radical holism. Neither set of assumptions—modern or postmodern—is advocated. Rather, what is advocated is an evaluation of any method (and its philosophy) in light of the questions being asked and the subject matter being investigated.

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Permit me to begin my address this evening by congratulating you on this conference. Yours is the first conference, that I know of, to take the bold step of establishing research assumptions as a general theme. I say the "first," because I would wager that it is the first of many to come, in a variety of behavioral science disciplines. My confidence about this is high, because the force of all recent scholarship is driving us inexorably in this direction. As I will attempt to document here this evening, this scholarship shows that science can no longer be considered a neutral or an objective tool of investigation. Science has a set of assumptions that biases its outcome or results. In fact, the assumptions of traditional scientific method have the power not only to bias the results of our investigations, but also to bias our theories before they are even subjected to scientific test.

The purpose of my presentation this evening, then, is to alert you to these biases. I intend, as my title says, to "raise your consciousness." I recognize that this intention is more than a little presumptuous on my part. The title of my address presumes that you need to have your consciousness raised about these issues. It probably goes without saying that few of us would want our consciousness raised. Consciousness raising is a little like a trip to the dentist: It may be painful, but it is probably necessary. Of course, many of you may already know about the biases of traditional science, in which case please join me in communicating these to our colleagues. All indications are that considerable communicating is required, and many of us are not skilled in articulating the philosophical assumptions of research.

On the other hand, you may feel that the communicators of such assumptions are ultimately anti-scientific or anti-empirical. Let me assure you at the outset: Nothing could be further from the truth. I, for one, deliver this address to you in the name of

science, broadly conceived. I present this paper to facilitate your work as scientific researchers. I want my scientific thrust to be clear, because many of my colleagues tell me that a backlash is forming to this type of consciousness raising. One friend at a major university has always characterized his department as healthily skeptical about scientific method and theoretically liberal about less than "scientific" ideas. His department's penchant for the psychoanalytic has seemed to ensure both tendencies. His report is, however, that his university—like so many other universities—is experiencing a retrenchment of science. As science is seemingly being attacked, investigators are apparently girding their loins for its defense.

I mention this possible retrenchment, because I intend no attack on science. Although my recent writing has been primarily theoretical in nature, my publication record includes over 40 empirical studies, with a continuing program of empirical research. My intention is not to attack this research, but to clarify its nature. With such clarification, we can use science for what it was intended. We can also avoid using science for things and issues for which it is not intended. In other words, we can begin to recognize its advantages and disadvantages, and even turn to alternative methods that were previously forbidden by a philosophy of science which many of us did not even know we had.

In this manner, I actually hope to preserve science from attack, to avoid throwing the baby out with the bath water. To preserve it, however, is to know it without its traditional pretentions. To preserve it, we must move to a new level of sophistication regarding its assumptions. I say a "new level," because at one time all we had to learn was a "recipe" for discovering truth. Scientific method was traditionally viewed as a logic—a step-by-step procedure—for finding out the accuracy or validity of some idea or process (Slife & Williams, 1995). The scientist's main job was to apply this logic to the matter at hand. No critical thinking about the logic itself was required; indeed, few

scientists even knew the origins of this method. One merely took the logic provided by one's mentors and translated it into the particular topic to be investigated.

I am here to tell you, ladies and gentlemen, that these times will soon be gone. Depending upon your discipline and area of study, these times may already be gone. Indeed, this recipe approach to science is currently viewed by those who invented it—the philosophers—as dying (cf. Leahey, 1992). The moribund state of this approach does not mean that it is dying in each of our disciplines. My own survey suggests that this approach is alive and, more importantly, in power in many of our disciplines, because the gatekeepers of our disciplines—the editors of our journals—hold to it tenaciously. Instead, the moribund state of this approach is the bankruptcy of its assumptions. Its assumptions are widely questioned as the appropriate methodological foundation for the behavioral science enterprise (cf. Bevan, 1991; Faulconer & Williams, 1990; Feyerabend, 1988; Gadamer, 1982; Koch, 1959, 1992; Messer, Sass, & Woolfolk, 1988; Polkinghorne, 1983, 1990; Robinson, 1985, 1995; Slife & Williams, 1995; Slife & Williams, 1997).

Now, I submit to you that we do not have to go that far. Traditional science methods may well be useful for a number of behavioral science questions. For example, there are many exciting findings issuing from the neurosciences, where these methods clearly dominate the experimental scene. However, the academy should not tolerate the uncritical use of these methods—for any behavioral science issue. In the near future, we will all be required to provide a rationale for the methods we choose, even the traditional ones. Ignorance of our philosophies of science will no longer be permitted. Some explicit statement of the assumptions that underlie our methods will be mandatory to all publications and presentations. Consequently, what I propose tonight is a brief introduction to this coming age of methodological sophistication. This "new age" begins,

I believe, with some knowledge of what is presently going on, the philosophical assumptions underlying the scientific enterprise as it is currently constituted.

First, I attempt to situate traditional science historically. Much of what science has become is a reaction to forces present in the Middle Ages. This reaction—taking place primarily during the Enlightenment—is now termed modernism. I describe the main assumptions of modernism as a second feature of my presentation, because these assumptions are the essence of our current, often unrecognized, biases of science. Third, I outline some of the methodological implications of these modernist assumptions—namely, replication, operationalism, and reductionism. Finally, I delineate alternative assumptions, posed most recently by postmodernists. I do not proffer these postmodern assumptions as the answer to all our methodological challenges, but they do serve as helpful contrasts to modernist assumptions. Without such contrasts, assumptions seem more like axioms than points of view. Moreover, these postmodern contrasts have been influential to an alternative set of methods, offering us qualitative as well as quantitative methods.

The Advent of Modernism

Allow me to begin our introduction to research assumptions with a brief historical sketch. For the last seven centuries or so, the question of knowledge has revolved around the question of authority (Faulconer & Williams, 1990; Slife & Williams, 1995): Who or what has the authority to decide truth or knowledge? In the Middle ages, the authority for knowledge was primarily considered a "who"—God—with the priest or some other "instrument" as a sometimes fallible conduit for God's authority.[1] This authority involved not only what we would consider today to be religious or spiritual issues, but also what we would consider today to be scientific or secular issues. To give a priest authority over the latter types of knowledge, such as medicine, sounds strange to many

today. However, this strangeness is due to the intellectual movements that followed the Middle Ages—the Renaissance and the Enlightenment.

These latter movements saw the church gradually lose its authority over general knowledge to two philosophical movements involving rigorous logic and systematic observation.[2] The first movement, known as Rationalism, held that the primary authority for truth is rationality or logic. If knowledge, including religious knowledge, did not stand up to the light of rigorous reasoning, then it was suspect. Most religions, however, were not founded upon totally rational systems of thought. In addition, many "faith" assertions were considered to be outside the bounds of the purely logical. Still, many religious apologists of this period, such as St. Anselm and St. Thomas Acquinas, were partially successful in responding to this challenge by making rational arguments for many religious precepts.

The second movement, known as Empiricism, was perhaps the more difficult challenge. Empiricism held that the primary authority for truth lies in observation or sensory experience. This movement grew out of the recognition that logic and rationality—Rationalism—were only as valid as their initial premises, and that initial premises could not themselves be logically derived (Rychlak, 1988; Slife, 1993). Empiricists held that valid premises come from valid observations of the world. This movement was particularly troublesome for religious authority, because many aspects of religion are not directly observable, and hence cannot be used as initial premises for rational systems of thought.[3] Both Rationalist and Empiricist approaches to authority reached the peak of their popularity during the Enlightenment, because they were viewed as bringing the "light" of reason and observation to the "dark" Middle Ages of religious authority.

What is now considered science also took hold during the Enlightenment. Indeed, science is, in some sense, the wedding of the two philosophical movements of

Rationalism and Empiricism (Polkinghorne, 1983; Slife, 1993). As many commentators have noted (e.g., Popper, 1959; Rychlak, 1988; Slife & Williams, 1995), science is a form of logic as well as a type of systematic observation. Science begins with systematic observations of the world to ascertain valid initial premises, and then the scientist makes logical inferences that presumably lead to coherent theories regarding these observations. This wedding effectively combined the authority of both philosophies. Knowledge was now thought to be conclusively and irrefutably certain, because both the powers of logic and the powers of observation ensured it to be so. This supposed certainty—this combination of authorities—later became known as Modernism, the most influential intellectual movement of the Enlightenment and even, to some degree, the Post-Enlightenment periods.

Modernist Method

Modernism has been variously described by many historians and philosophers, but fundamentally revolves around the belief that scientific method provides a sure foundation for evaluating truth and knowledge claims. The methodologist Donald Polkinghorne (1983; 1990) put it this way:

> At the core of modernism or Enlightenment discourse was the belief that a method for uncovering the laws of nature had been discovered, and that the use of this method would eventually accumulate enough knowledge to build "the heavenly kingdom on earth". . . The modernist idea was that formal reasoning [Rationalism] applied to sense data [Empiricism] provided a foundation for certain knowledge. (1990, p. 92)

This modernist emphasis on method—as the pathway to knowledge—was crucial to the founding of many behavioral science disciplines. Indeed, there is considerable historical evidence that the behavioral sciences decided on their modernist methods before they settled on their subject matter (Koch, 1959; Leahey, 1992; Robinson, 1995;

Slife & Williams, 1995). The natural sciences, by contrast, developed their methods as a specific response to their particular subject matter. In other words, some understanding of the subject matter came first, and method was later derived to accommodate this understanding (Polkinghorne, 1983; Ronan, 1982). The behavioral sciences, on the other hand, went about their tasks in the reverse order of the natural sciences. They adopted the method of natural science and, implicitly, its understanding of the world—as the best way to develop their understanding of their subject matter. This privileging of method—what some have termed, "methodolatry" (e.g., Danziger, 1990)—has continued in various forms into the present day.

What has this privileging of method meant for knowledge claims? In other words, how does one find out the validity or accuracy of certain ideas in the behavioral sciences? True to their history, the answer of many behavioral scientists is that scientific method is the main, if not sole, means of discerning an idea's validity (e.g., Heiman, 1995). One must find a way to submit the idea to empirical test. That is, the important issue is to translate the idea into the procedures of method and allow these procedures to determine its validity. This methodological approach to truth is so dominant that testability is itself thought to be an indicator of the quality or validity of an idea.

For example, in a popular book on psychological theories (Carver & Scheier, 1996), this dominance is illustrated in a section on "how to decide whether a theory is any good" (p. 8). As the authors put it, "in describing the predictive function of theories, we've revealed a bias that many of today's psychologists hold. The bias is this: theories should be <u>testable</u> and should be <u>tested</u>" (p. 8). In other words, if the idea cannot be readily operationalized, then this raises questions about its quality and significance to the discipline. A theory is not "any good," unless it conforms to the dictates of method. In this sense, method not only dictates the procedures one follows in establishing the validity or

accuracy of an idea; method also dictates the criteria for deciding whether and how the idea should be considered in the first place.

Interestingly, these procedures and criteria are rarely questioned in the mainstream of many disciplines; they are taken as scientific givens. Method has long held this unquestioned status, because it is considered invisible or transparent. This transparency is, again, a property of a modernist understanding of method (and language) (Bevan, 1991; Polkinghorne, 1983; 1990; Slife & Williams, 1995). Method is viewed as providing the experimenter with a window to the objective world. As a transparent window, it is not itself thought to have an affect on what the experimenter sees; it does not affect the truth of ideas and events. Indeed, this window is considered to clear away extraneous factors affecting the recognition of truth, so that the objective truth—as it "really is"—is allowed to emerge. In this sense, method has priority over theory and truth, because it is the necessary means by which ideas are tested and truth is attained.

Current scholarship, however, questions this priority in the behavioral sciences (Bohman, 1993; Dennis, 1995; Gadamer, 1982; Harmon, 1993; Jones, 1994; Polkinghorne, 1983; Robinson, 1985; Slife, 1993; cf. Slife & Williams, 1995; Slife & Williams, 1997). This scholarship is unequivocal, I believe, in its contention that method follows from and must be determined by our own theories about what validity and truth are, and thus how they must be found. This means that much of the behavioral science literature has put the cart before the horse. Much of this literature has made theoretical commitments and ruled out certain truth claims <u>through</u> its methods, without deliberately meaning to do so. In other words, many mainstream researchers are allowing unexamined philosophical commitments—that are implicit in their method—to set limits on how they view their subject matter, before <u>any</u> investigation of the subject matter itself has occurred.

Frankly, this practice seems unscientific to me. Decisions are made and judgments are rendered, before investigation of any kind has occurred. In this sense, the window of natural science method has never been transparent. The window is opaque. This opacity implies that crucial behavioral science questions are unknowingly being answered in a very unscientific manner—by philosophical fiat in the guise of method. The fact of this is made clear when one realizes that method cannot validate itself. This validation has what some philosophers call a "boot strap" problem. Just as those who wear old-fashioned boots cannot raise themselves into the air by pulling on the straps, so scientific method cannot use its own methods to validate the methods it is using. Some people argue that the many successes of science demonstrate its validity. Nevertheless, this argument still has the same bootstrap problem within it. Citing success merely begs the philosophical question of what one considers success and how one verifies it. Thus, there is no grounding for method that is itself factual or objective (cf. Slife & Williams, 1995; Slife & Williams, 1997; Yanchar & Kristensen, 1996).

If this is true, then method itself is a theory or philosophy—a "subjective"[4] set of biases. Similar to any other theory or philosophy, it makes assumptions about the world, and important implications arise from those assumptions. These assumptions and implications are what is meant by the phrase, "philosophy of science." Scientific method is a philosophy with all the commitments and consequences of any other philosophy. In the case of natural science method, these commitments and assumptions are widely acknowledged to encompass certain types of determinism, reductionism, and epistemology (see Slife & Williams, 1995). As a philosophy, this method is not committed to, and in some cases rules out, certain other philosophical and theoretical ideas. These ideas are not ruled out because they are "unsupported by the data;" they are ruled out because they belong to a different, but not necessarily fallacious, philosophical position.

The philosophy of method affects the theories and findings of any research enterprise in many ways and at many levels. First, as described above, "testable" theories are thought to be the only theories acceptable to science. This implies that other theories are somehow less acceptable or irrelevant to the discipline, because they do not meet the philosophical biases inherent in the accepted method. Second, theories that are deemed to be testable usually undergo a process of translation into the procedures of method, often termed "operationalizing." Here again, the translation process is itself guided by the biases of the method's philosophical grounding. Third, this translation means that only the "translated" is tested. That is, only those aspects or that particular rendition of the original idea is truly investigated (Slife & Williams, 1995, Ch. 6). Resulting findings, therefore, may have little to do with the original ideas before translation, particularly if the ideas conflict with the philosophy of method in the first place (e.g., Slife, Nebeker, & Hope, 1996).

Fourth, the best interpretation of the findings is typically thought to be that which is "closest" to the data itself. Interpretation that attempts to take any license with the data is considered to be speculative, and "speculative" is usually a pejorative term in science. This pejorative judgment effectively keeps interpretation from straying to far from the assumptions inherent in method. Fifth, method is thought to clear away biases so that only the so-called objective truth is exposed. With method itself exposed as a philosophical bias, it is apparent that this supposed "clearing away of biases" is itself a means of privileging one particular philosophical agenda. This agenda may not be objectionable in itself. However, the general point is that the multi-layered influence of a method's philosophy—from the designation of testable theories to

the supposed clearing away of biases—has occurred without our knowing that this influence occurs and what this influence is.

Modernist Assumptions

What, then, is this influence, this philosophy underlying traditional method? What is this modernist understanding of the world that the behavioral sciences have unknowingly adopted when they took on the methods of the natural sciences? Returning to Polkinghorne's (1990) definition of modernism, recall that method was intended as the means of "uncovering the laws of nature" (p. 92). By extension, behavioral scientists assumed, in adopting these methods, that they would "uncover the laws of nature" related to the behavioral sciences. In both instances, the assumption is that something like the laws of nature exist. That is, the method assumes that the world is constituted in a manner that its discovery procedures will be effective. These assumptions of modernist method involve three essential assumptions of the world: universalism, materialism, and atomism.

The first assumption is that the laws are universal in nature (Faulconer & Williams, 1985; Slife, 1993; Slife, 1995b; Slife & Williams, 1995). Universalism is simply the notion that natural laws—to be lawful—do not change in time or space.[5] This assumption does not require that a law or principle be constantly "in force;" universalism only requires that a law be applicable to the conditions under which it specifically applies. However, it must be applicable to all these specified conditions—i.e., must be universal to these conditions—regardless of the conditions' time or place. This notion is derived primarily from Rationalism, where principles of reasoning and thus principles of truth are considered not to change across contexts or eras. Similar to a Rationalist view of logic, a law should work universally; otherwise, it only applies to one point in time and space and thus is not lawful (or truthful). The law of gravity, for example, applies to both South America and North America (unchanging across space). Similarly, the law of

gravity applied to both the people of the Tenth Century and the people of the Nineteenth Century (unchanging across time).

Behavioral scientists may not discuss laws per se, particularly laws having a status equal to that of gravity. Still, knowledge in the behavioral sciences is thought to have similar universal properties from this modernist perspective. That is, knowledge must apply to more than one place and time to be knowledge. In this sense, findings that cannot be replicated will have extreme difficulty gaining acceptance as real findings in this scientific community. Replication, then, is a methodological manifestation of universalism. A lack of replicability supposedly indicates a lack of generality, and thus questions the existence of a phenomenon altogether. The most rigorous experimental conditions will not convince modernists of the reality of such phenomena, if the findings cannot be shown to have some universality.

Modernist knowledge is also thought to consist of the observable, physical manifestations of these natural laws. This second assumption is the second theme of modernism—materialism. Materialism postulates that the real is the visible and tangible things of the world, existing independently of the observer. This assumption is derived primarily from Empiricism where such materialistic entities are considered to be perceivable through the senses. That is, real, material things are thought to make impressions on our minds through the channels of the senses (Slife, 1995a). However, impressions that do not stem from material objects and thus do not come through our senses are suspect, by definition.

A major reason that the behavioral sciences are called the "behavioral sciences" is that the behaviors of people create sensory impressions. That is, the behaviors of people have become the primary source of study for the behavioral sciences because behaviors can fulfill the materialist criteria set by the modernist. Behavioral scientists are not averse to doing research on nonbehavioral phenomena, such as attitudes and cognitions.

Nevertheless, they must translate these nonsensory phenomena into sensory phenomena—i.e., operationalize them—to be acceptable to traditional scientific method. Consequently, the practice of operationalization in method is a practice driven by materialism—the need to make everything visible and tangible (Koch, 1992). Operationalism assumes that all constructs must be represented as set of observable and tangible operations to be considered for test. This means, of course, that only the material properties of any construct are actually involved in any empirical investigation. How well these material properties actually represent these constructs is matter of considerable debate (Bickhard, 1992; Green, 1992; Koch, 1992; Slife & Williams, 1995).

The third assumption of modernism is closely related to the other two—atomism. Atomism is the notion that the material objects of our observation and knowledge can themselves be separated and divided into variables, constructs, and laws that are smaller and presumably more fundamental than their larger counterparts. These atoms contain within themselves all the essential properties of the larger units. Indeed, each atom is itself a self-contained entity, with all its properties and qualities contained within itself. No properties, for example, are endowed by entities from the "outside;" all the essential properties of each atom stem from the atom itself. This does not prevent atoms from interacting with other atoms, but it does imply that each atom must first exist as a self-contained entity and then cross time and space to interact with other atoms. The qualities of a biological organism, for example, stem directly from the smaller organs and cells that make up the organism. Once these atomistic qualities are understood, then the larger unit is understood.

Similarly in the behavioral sciences, some have viewed individual people as the "atoms" of larger communities. The qualities of the community are thought to stem directly from the qualities of the individuals who make up the

community, and each individual is considered to be a self-contained entity (cf. Slife, 1993).[6] That is, the qualities of each individual are understood as originating from the individual. Individuals are viewed either in terms of their unique pasts or unique biochemistries (or some interaction of the two). In any case, individual characteristics are thought to be contained "within" the individuals themselves. This has allowed such characteristics (e.g., personality) to be considered as relatively stable (and universal) from context to context (Slife, 1993). The interaction of these atomistic individuals is expected, along with many changes as a result of this interaction. However, these individuals are thought to begin as individuals, and only "later" to form interactions and communities. Consequently, science's task—including that of the behavioral sciences—is to grasp the properties of these individual atoms and account for their lawful interaction and combination.

This, then, is an oversimplified version of the philosophical commitments of modern scientific methods. If a phenomenon or a theory does not satisfy these three assumptions—universalism, materialism, or atomism—or it cannot be translated into them, then it is deemed to be, at best, "unscientific" and, at worst, "nonexistent." Parapsychological researchers (those who investigate psi phenomena) can certainly attest to the importance of these assumptions (cf. Reinsel, 1990). Even a cursory review of the parapsychological literature reveals several methodologically rigorous studies. The problem is that few of these studies are replicable. Without replication, there is no evidence of the universalism necessary to view the phenomena as real. There is also difficulty in accounting for these phenomena in ways that meet materialistic and atomistic assumptions. The upshot is that most scientists do not believe that parapsychological phenomena exist.

My point here is not that such phenomena do exist. My point is that these assumptions—as extended through method—are governing the judgments of their existence. Method, in this sense, is not revealing whether something truly exists; it is administering a philosophically derived criteria for existence. These assumptions and criteria were decided before any investigation occurred. In other words, even if we knew for certain that psi phenomena did occur, modernist assumptions would preclude such truths a priori (i.e., before any data are gathered). This is because the only phenomena that can be said to be real are those phenomena that are universal across at least some conditions and exist as combinations of material atoms.

Does the reality status of a phenomenon affect prior theorizing about it? Surely it does, if we take our method seriously at all. That is, if our method requires replicability and thus universality to some degree, why would we even postulate a nonreplicable, nonuniversal conception in the first place? Why postulate any phenomenon that happens only uniquely and nonrepeatedly, when it not only cannot be proven true, but also cannot be true, a priori?[7] Method is our test of truth, so why conceive of something untestable? Why postulate an idea or process that cannot be operationalized or broken down into component parts—materialism and atomism?

In this sense, method regulates the very ideas that are allowable in a method-dominated discipline. It rules in and out ideas, and it does so in a very unscientific manner—before investigation. In this sense, method can never be a transparent window or an objective instrument for testing our ideas. All methods (and all languages, for that matter) come with their own liabilities and assets, their own assumptions and implications. Consequently, each method must be evaluated in relation to the context of its proposed use. Modernist methods must therefore be critically examined for their appropriateness to the questions being asked.

Postmodern Assumptions

This examination, however, will require alternative assumptions and methods to be truly meaningful. That is, without contrasting options, modernist method will appear as it has always appeared—the only "game in town." Here I believe, as do many others (Bevan, 1991; Bohman, 1993; Dennis, 1995; Gadamer, 1982; Harmon, 1993; Polkinghorne, 1983, 1990; Robinson, 1985; Slife, 1993; Slife, 1997), postmodernism can make a positive contribution, particularly postmodernism as broadly rendered—including phenomenology and hermeneutics.[8] I should emphasize at the outset, however, that this newest of intellectual movements should itself be approached with caution.[9] As I have written elsewhere (e.g., Slife, 1997; Slife & Williams, 1995; Slife, Hope, & Nebeker, 1997), postmodernism is not the answer in my view, but rather a necessary part of the conversation I believe should take place.

These postmodern assumptions have also influenced an alternative set of methods (e.g., Gadamer, 1982; Slife & Williams, 1995). These methods have been termed qualitative methods to distinguish them from the quantitative methods of modernism (e.g., Crabtree & Miller, 1992; Denzin & Lincoln, 1994; Gilgun, Daly, & Handel, 1992; Patton, 1990; van Zuuren, Wertz, & Mook, 1987). Although my limited space prohibits any review of these methods here, I do want to introduce the relevant postmodern assumptions that underlie many of these methods. Indeed, I purposely frame these assumptions so as to directly contrast them with the three assumptions of modernism described earlier. This framing will undoubtedly oversimplify and possibly misrepresent some who are considered postmodern. (An incredible diversity of scholars are labeled "postmodern.") However, my purpose is to facilitate our conversation about research assumptions, rather than to render a review of the postmodern literature.

Lived Experience. Instead of focusing on an observable, material reality that is considered to be "behind" the changeableness of experience, many postmodernists argue

for a focus on experience itself. They contend that we do not have anything but experience anyway. No one, including the most rigorous of scientist, gets outside their experiences. Even the material world of the modernist can only be known, and only occurs through our experience. However, the problem with this materialism, according to the postmodernist, is that it stems from a narrowed understanding of experience, as promulgated by empiricism. That is, only sensory, so-called "objective" experiences are allowed in empiricism. The postmodernist notes, however, that this limiting of experience is arbitrary, or at least biased, because our lived experience offers us far more than what comes through our senses, including our feelings, mental events, and even spiritual events. What gives "material" experiences a privileged status anyway? This status is a quirk of intellectual history; reality does not have to be limited in this manner. Indeed, if material events are themselves experiences, then they are, in a sense, as "subjective" as our other experiences.[10] From this more postmodern perspective, if it is experienced, then it is a candidate for reality status.

Radical Holism.[11] Rather than postulating that the whole is derived from more fundamental, atomic parts "out there" in material reality, the postmodernist asks us to consider that the parts themselves depend upon the whole for their very existence. In this sense, the whole of experience, including the past, present, and future, is required to understand any portion of experience (Slife, 1993, Ch. 10). To focus on sensory or present experiences alone, for example, is to miss the qualities these experiences derive from and give to other forms of experiences. This radical holism asserts that subjective and objective factors cannot be atomistically separated, nor can they "interact," because they do not originate from independent sources. The "objects" of our experience must be interpreted to exist and to matter, at least as we experience them (which is the only way we know them anyway), and subjective "factors" must have objects to be "subjective" about.[12] In this sense, neither the objective nor the subjective need to "interact," because

they are always and already one entity (e.g., Dasein). In fact, many postmodernists advocate dissolving the traditional subject/object distinction altogether. Attitude, for example, is neither a subjective factor nor an objective factor, but an experience as real as any other.

Contextuality. Instead of searching for timeless, universal laws that occur without regard to context, the postmodernist advocates the search for experiential "patterns" (e.g., Bohman, 1993). These patterns are not laws and thus need not be lawful or universal. They are, instead, regularities that are culturally and contextually bound. That is, they pertain to and must be understood within the context in which they are found—potentially unique and nonrepeatable.[13] Further, these patterns are never considered final or complete, because they are constantly evolving as our contexts change and the interpreters of such regularities themselves evolve. The postmodernist contends that our experiences, shorn of our modernist habits of thinking, constantly change. These changes can be gradual and seemingly lawful, or these changes can be discontinuous and cataclysmic, such as sudden insights and miracles. Behavioral science researchers, therefore, would not be required to find the unchanging laws that govern their area of interest. They could embrace experiential change for its own sake, finding patterns in the change perhaps, but not elevating these patterns to a status that says that the patterns themselves govern the change. This would mean that the change is not itself "determined;" the regularities discerned are not patterns of necessity but patterns of possibility. This would allow nondeterministic constructs, such as agency and transcendence, to be part of the research enterprise.

Interestingly, it has been argued that the qualitative methods which have been influenced by these three postmodern assumptions—lived experience, radical holism, and contextuality—can be effectively combined with the quantitative methods of modernism (e.g., Faulconer & Williams, 1985; 1990; Polkinghorne, 1983). This combination has

become known as "methodological pluralism" (Slife & Williams, 1995; cf. Bevan, 1991). This position essentially holds that all methods are languages through which we make sense of the world. All languages open a world of understandings in some way, but close off understandings in other ways. No language can open all understandings; no method can claim preeminence. Each has its own set of advantages and disadvantages, depending upon the context of their use. An important task of scientists, then—as methodological pluralists—is to know these advantages and disadvantages. Scientists must know the various assumptions of the many methods available, and consider which of them is the best tool for the job. We normally would not use a screwdriver to pound a nail. Yet, from the perspective of a methodological pluralist, this is metaphorically what many of us have been attempting to do with positivism in our respective study areas.

Conclusion

The purpose of my address was to "raise your consciousnesses." As awful as that phrase sounds, it is appropriate to the circumstances of the behavioral sciences. Our collective history has left us extremely method-dependent. The historic successes of natural science methods have led us to make two crucial assumptions that have obstructed our critical analyses of these methods. First, we assumed that such methods could be applied to any subject matter. Consequently, our task as behavioral scientists was merely to discover how these generic methods applied to our own specific contexts and questions. We forgot—or perhaps never wanted to know—that these methods were themselves developed in specific contexts for use with particular questions.

Second, we assumed that the methods of the natural sciences were objective or neutral. That is, we presumed that the methods would not themselves influence the theories they were testing, nor bias the results of experiments to which they were integral. Our task as behavioral scientists was simply to use this "transparent window" of method, and allow it to show us what was really happening in our topics of interest. We

forgot—or perhaps never wanted to know—that this so-called neutral method had distinctly philosophical origins; it was never given to scientists on divine tablets. It was formulated and developed by very biased philosophers, with particular axes to grind and a particular view of the world to promote.

Let me be clear: I am not saying the these particular "axes" are necessarily wrong. I am not interested, at this juncture, in supporting or refuting the assumptions of universalism, materialism, and atomism. I am interested, instead, in us gaining an understanding of these axes. Such an understanding would enable us to make critical decisions about these axes, given our own research circumstances. The problem is that these axes are now so prevalent and so familiar that they hold the status of axioms. As I have found in my own experiences—both of myself as a researcher and of my patients in clinical practice—there is a tremendous temptation to think that "familiar is better." In this case, the familiar may, in fact, be better. However, until we have seriously considered alternative assumptions, such as those offered us by the postmodernists, we simply cannot know. In the meantime, unexamined methodological assumptions may be ruling out potentially promising research ideas, and important theories are being operationalized in ways that may distort their true nature. We must begin the process of consciousness raising <u>now</u>, and I am excited to be a part of a conference that is attempting to do just that.

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Footnotes

[1]I undoubtedly oversimplify the Middle Ages here. Thinkers of the Middle Ages tried to combine reason, experience, tradition, and revelation. The principle difference between this period and the Enlightenment is that Enlightenment thinkers wanted to exclude tradition and revelation. I ask the reader's indulgence here, because I intend only a brief description of the historical context.

[2]The seeds of these philosophical movements--Rationalism and Empiricism--were, of course, planted well before the Middle Ages.

[3]I do not intend here to pose an artificial polemic between Enlightenment and religious figures. Many Enlightenment thinkers, for example, viewed their proposals as harmonious with their faith (e.g., Isaac Newton). Indeed, some scholars now trace part of the development of science to Judeo-Christian ideas about the regularity of created order and the ability of the created human mind to grasp this order (cf. Tjeltveit, 1989). Still, the preponderance of Enlightenment figures favored separating religious and spiritual knowledge from scientific and secular knowledge.

[4]I place this term in quotations, because I tend to follow several scholars who question not only the "objective" but also the "subjective" (Faulconer & Williams, 1990; Slife, 1993, 1995). Indeed, if objectivity is impossible--at least in the sense of "independent of consciousness or values"--then subjectivity has no meaningful contrast, and thus no meaning.

[5]Universalism is also referred to as "atemporality," because universalism postulates that laws are "without time" (cf. Faulconer & Williams, 1985; Slife, 1993, 1997).

[6]Systems conceptions are often considered to be exceptions to this atomism. However, as I show elsewhere, many mainstream conceptions of systems are essentially atomistic (cf. Slife, 1993, Ch. 8).

[7]By this criteria, Mt. Vesuvius's volcanic destruction of Pompeii could not have occurred, because it only happened once.

[8]I recognize that many separate postmodernism from hermeneutics and phenomenology. However, even Derrida points to his Heideggerian (and hence hermeneutical) influences. My interest here is engaging an alternative that is not modernism.

[9]Postmodernism has at least two discernible branches in my view (Slife, 1997). Both react negatively to the foundationalism of modernism and both support a more contextual understanding of knowledge. However, one branch follows this contextualism to relativism and ultimately denies the unity of truth (e.g., Gergen & Davis, 1985), while the other branch (e.g., hermeneutics) follows this contextualism to temporality and ultimately affirms the unity of truth (e.g., Gadamer, 1982; Heidegger, 1962).

[10]Many postmodernists dissolve the subjective/objective distinction altogether. I use it here in quotes, so that I can make contact with the prior discussion.

[11]The inclusion of not only spatial but also temporal experiences is the reason I call this assumption "radical holism." Many postmodernists in the Heideggerian tradition include the past, present, and future in the lived experience of the now--i.e., temporal context as well as the usual spatial parameters of experience (Slife, 1993).

[12]This is my rather awkward way of characterizing Husserlian intentionality.

[13]This assertion may raise the specter of relativism for many readers. Does this contextuality prohibit truth? The answer of many postmodernists is clearly in the negative. This question assumes that truth is identified with modernist universalism. If, however, one assumes--as many postmodernists do--that truth is itself contextual, even religious truth, then it can only be found in contexts. For example, some Christians consider Christ (as manifested through the Holy Spirit) to be part and parcel of particular

contexts, rather than a universalized, abstract truth (cf. Slife, 1997). See Widdershoven (1992) for a broader discussion of postmodernism and relativity.