

WHAT IS PSYCHOLOGY ABOUT? TOWARD AN EXPLICIT ONTOLOGY



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Summary

Commentators have criticized psychology's overemphasis on method and its simultaneous neglect of questions regarding the subject matter and purpose of psychology. This article summarizes four problems that have resulted from the privileging of method, and in each case illustrates how an explicit ontology provides at least partial solutions to these problems. This article also suggests three metatheoretical assumptions based on the thinking of William James that would allow for the establishment of an explicit ontology and that would allow for psychological entities per se to be studied without the threat of biological or other kinds of reductionism.

Finally, concerns that may arise in the formation of an explicit ontology are briefly addressed.

One important lesson of 20th-century philosophy of science was that any scientific endeavor, including psychology, will emerge from, and be informed by, philosophical axioms regarding the nature of the universe and content within it (see, e.g., classic works by Feyerabend, 1975; Hanson, 1958; Kuhn, 1970; Lakatos, 1970; Popper, 1963; Quine, 1953). These axioms dictate what entities and processes are taken by scientists to be real—that is, a science’s *ontology*¹—and how we can generate dependable knowledge regarding those entities and processes—that is, a science’s *epistemology*. These philosophical axioms are crucial to any scientific project, even if they are not made explicit, because what is assumed to be real (and not real) will necessarily dictate the type of research and theories generated. For instance, if we as psychologists assume at the outset that only central nervous system activity is real, and that minds are not, then we have predetermined the kinds of theories and research programs that can be generated (e.g., reductive materialistic ones); indeed, we have predetermined the kind of science we can become and the kind of conclusions we can draw.

In this article we are concerned with the question of what is real regarding human nature, that is, with the ontology of human existence, and with our discipline’s reluctance to address this important issue. Common definitions of psychology such as “the science of behavior and the mind” (Gray, 1991, p. 3), “the science of behavior and mental processes” (Sdorow, 1998, p. 4), or “the scientific study of human and animal behavior, experience, and mental processes” (Fernald, 1997, p. 5) appropriately demarcate psychology as a broad study of human beings but are sufficiently vague that they fail to explicate the ontological status of what might be considered obvious (though more specific) psychological phenomena, such as intentionality, agency, morality, spirituality, the phenomenological essence of experience, the propositional attitudes, and other related phenomena.

This neglect of more specific ontological concerns, by design or otherwise, has left much of the discipline with only a default ontology that, we argue, requires serious critical examination. Although some critics have called for an explicit examination of the ontology of our discipline (e.g., Giorgi, 1985; Koch, 1981; Rychlak, 1993;

Sass, 1988), few have thematized the problems associated with the lack of a clear ontological commitment or explored the benefits of an explicit ontology. It is our purpose to summarize what we take to be four principal problems resulting from our neglect of ontology and suggest how an explicit ontology can be helpful in this regard. We then make a preliminary statement regarding the nature of a suitable ontology for psychological research and respond to six possible concerns about the position we have presented.

HISTORICAL LACK OF AN EXPLICIT ONTOLOGY

The reluctance of contemporary psychology to establish an explicit statement regarding what it assumes to be legitimate subject matter would seem to be an extension of the difficulty experienced by early psychologists in coming to agreement over this same topic. In her revealing exposition of early 20th-century psychology, Heidbreder (1933) illustrated the many contradictions and few agreements to be found among the early schools. The pioneers of psychology, such as Freud, Titchener, Watson, Wertheimer, and James, advocated their own definition of the field, their own ontology, and often their own method.

Interestingly, Heidbreder (1933) also suggested that although the early theorists of psychology adopted different, often contradictory, subject matter, they did not necessarily deny the ontological status of other phenomena; they only asserted that their own ontology was the appropriate one for the discipline of psychology *per se*. The result was a discipline populated by various, often contradictory, theoretical and methodological positions—a state of affairs, according to Heidbreder, that was actually advantageous because it set different groups of psychologists to work on very real, yet very different, questions and problems. On Heidbreder's account, this theoretical pluralism placed the discipline in a position to cover a substantial amount of theoretical and practical territory.

Subsequent analyses have shown that the most lasting and influential theoretical schools of psychology, particularly in the United States, were (and are) loosely united by implicit philosophical commitments to mechanistic explanations (Sarbin, 1986) and inchoate forms of positivism (Robinson, 1985b; Slife & Williams,

1997). Indeed, the pervasive nature of logical positivism around the turn of the century is commonly identified as a formative influence in the development of psychology as an empirical science, inspiring experimental psychology in general and specific movements such as behaviorism and neobehaviorism, and cognitivism (e.g., Leahey, 1992a; Robinson, 1985b; Taylor, 1998). Despite this underlying commonality among some approaches, however, many theorists resisted the pull toward positivism and advocated theories of schools of thought that did not (or do not) share these commitments (e.g., Giorgi, 1970; Kohler, 1947, pp. 100-135; May, 1958; Rogers, 1964; Stephenson, 1953; van Kaam, 1966). They introduced subject matter and methods that ran counter to positivistic trends within psychology, thereby adding to the discipline's topical and ontological breadth.

Following Heidebreder, many contemporary psychologists view this wide breadth of perspectives as one of psychology's principal strengths, arguing in one form or another that it offers many useful standpoints from which to understand and improve the human condition (e.g., Bower, 1993; Sternberg, 1992; Toulmin, 1987; Weiten, 1998, p. 23). In a similar vein, some commentators have argued that competing theoretical systems are crucial to the advancement of science in general (Feyerabend, 1975; McNally, 1992; Rychlak, 1988; Viney, 1996). They have claimed that psychological science can remain dynamic and progressive only with competing or complementary systems to push the limits of our understanding. For these psychologists there is little reason to criticize a field that actively seeks to explore and explain the manifold nature of human existence from a variety of theoretical and ontological positions.

We agree that many important issues can be addressed by a progressing, dynamic, scientific enterprise, and that genuine advance will be facilitated by a type of theoretical pluralism. Indeed, the history of science suggests the critical importance of variety and flexibility on the way to scientific knowledge. One wonders, however, whether psychology's attempt to understand human existence, through the construction of any number of rival theoretical-philosophical systems (each with its own set of questions and ontology), has, in fact, slowed our ability to render a mature and coherent (though always evolving) understanding. Many commentators have argued that our theoretical and philosophical disconnectedness as a discipline seems to hamper our ability to

accomplish our aims in a cogent way (see, e.g., analyses by Gibson, 1994, Giorgi, 1985, Koch, 1981; Miller, 1985; Slife & Williams, 1997; Staats, 1996; Wertz, 1999; Yanchar & Slife, 1997; Zechmeister & Zechmeister, 2000). The consensus among these and other commentators is that psychology faces a “crisis of disunity” (Staats, 1983)—a situation in which unrestricted diversity and specialization, coupled with sparse theoretical organization and integration, has impeded our ability to make sense of the vast array of reported empirical findings. This state of affairs has suggested to many that our desire for scientific freedom and theoretical diversity can work at cross-purposes with the basic need for scholarly coherence and unity.

PSYCHOLOGY'S PRIVILEGING OF METHOD

To be sure, the need for scientific freedom and theoretical diversity has been a deep source of psychology's reluctance to formalize a set of explicit ontological commitments. We suggest that there is a second reason why no clear and systematic statement regarding the fundamental subject matter of psychology has been formulated: Psychologists have historically focused their attention almost exclusively on the topic of epistemology and its methodological extensions, to the virtual exclusion of other theoretical and philosophical concerns (e.g., the fundamental purpose and subject matter of the discipline). In the history of psychology, method has been exalted nearly to the point of being an end in itself (e.g., Stanovich, 1998, pp. 6-8). Borrowing from philosopher Calvin Schrag (1983), this practice constitutes a species of *methodological pretension* wherein we view the received empiricist method as the only legitimate approach to any reasonable investigation.

Having been encumbered with this methodological pretension, and in deriving its scientific credentials solely by virtue of adopting natural science methodology (Stanovich, 1998, pp. 3-8; cf. Robinson, 1986, pp. 395-397), much of psychology seems to have implicitly adopted the customary ontology of this methodological position—material substances. It has thus been assumed that for any phenomenon or substance to actually exist, and to be a legitimate topic of psychological science, it must be susceptible to the traditional empiricistic method, if not on *prima facie* grounds then through operationism, reductionism, or behaviorialism.

Many commentators within our discipline have recognized the inordinate emphasis historically placed on the knowledge-gathering process, rather than on discussion over the fundamental purpose and subject matter of psychology (see Bakan, 1967, 1972, 1987; Danziger, 1990; Giorgi, 1970, 1985; Hyland, 1985; Kimble, 1994; Koch, 1981; Manicas & Secord, 1983; Robinson, 1985a, 1995; Sass, 1988; Slife & Williams, 1995, 1997; Yanchar, 1997b). Sigmund Koch (1981) coined the term *epistemopathic* to describe this proclivity toward ignoring ontology in favor of epistemologically oriented concerns such as method. And David Bakan (1967), whose writings clearly describe the discipline's attempt to define and justify itself in terms of method, rather than subject matter or research questions, has termed this practice *methodolatry* (p. 158).

The strength of these criticisms has been to identify a crucial, yet unresolved, issue in the history of psychology. They have correctly detected the jeopardy in which we place our discipline when we pattern it after a positivistic model of science, and they have argued that the very existence of a discipline of psychology must be to interrogate some subject matter—such as mental life and agentive action—that is not already the province of a material science such as biology or chemistry. From our perspective, the full promise of scientific psychology as a way to understand and improve human lives hinges on our ability to move beyond this methodological pretension and the facile acceptance of a default ontology. Although many interrelated problems resulting from this methodological pretension can be identified, we will discuss four that are, in our estimation, the most vexing and therefore the most deserving of our attention. In each case, we will suggest how an explicit ontology can provide at least part of the solution.

FOUR PROBLEMS

The most fundamental problem created by psychology's lack of an explicit ontology is an identity crisis wherein we seem to possess no genuinely indigenous content. That is, we have no idea of what psychology is actually about, because, as stated above, our historical privileging of epistemology has resulted in a disciplinary focus on method rather than on shared purpose or content. As a result, psychological investigations vacillate between various kinds of subject matter (e.g., overt behavior, cognition, the uncon-

scious) and levels of explanation (biology, sociology, computer science, psychoanalysis), often implicitly adopting those from other disciplines that seem to fit the 19th-century model of science (positivism, materialism) we have so completely and uncritically embraced. This is often the case, even if it replaces psychological phenomena with nonpsychological entities or levels of explanation. We are thus faced with the peculiar situation in which we cannot be sure whether our discipline is, in actuality, a special case of biology, chemistry, ethology, zoology, sociology, all of these, some of these, or others.

Although it is clear that most sciences have tended to borrow from or build on other fields of inquiry, psychology is unique in that it may be the only scientific discipline that has actively sought ways of securing its identity and status among the sciences by reducing itself to other levels of explanation—most notably the levels of biology, chemistry, and sociology. Surely these levels of explanation provide an increased understanding of important aspects of human existence. Nonetheless, we are compelled by philosophical argumentation and common experience that suggest that there may be more to human existence than biology and chemistry on the one hand (e.g., Eccles & Robinson, 1984; James, 1907/1978, pp. 45-62; Robinson, 1995; Rychlak, 1994, pp. 224-251; Slife & Williams, 1995, pp. 149-157) and social constructs or categories on the other (e.g., Danziger, 1990, pp. 195-197; Halling & Lawrence, 1999; Martin & Sugarman, 1999). If there is not, then we need not proceed with the work of a psychology *per se* (Robinson, 1995).

In response to this identity crisis, we contend that an explicit ontology would provide a subject matter, an overarching set of questions, and a rationale for the existence of psychology, and thus provide at least a partial response to our lack of shared purpose. In the past it has been easy to accept a pragmatic definition of psychology and therefore to assume that psychology *is* what psychologists *do*. Having conceptualized our discipline in this manner, no shared purpose or ontology is necessary so long as we all use the same method and stay within the vaguely defined boundaries of “mind and behavior,” both animal and human (Stanovich, 1998, p. 6). But there is nothing in this conceptualization that sets psychology apart from the disciplines mentioned above (biology, chemistry, ethology, zoology, sociology) as well as others. Indeed, the multifaceted nature of human existence has suggested that all of these top-

ics are important in their own right. Nonetheless, one may legitimately ask the question What does psychology add that these other disciplines do not? Why should there be psychologists in the first place? There must be some reason why certain women and men of science come together as psychologists rather than as neurologists, psychiatrists, biologists, chemists, sociologists, or members of other scholarly disciplines. It is our thesis that this reason should be made explicit, in part by the establishment of fundamental subject matter to be interrogated.

The identity crisis of psychology is closely tied to a second problem with privileging method: that although a stated method provides no explicit ontological guidelines, it will, ipso facto, bring with it an implied ontology that can have problematic, yet often unexamined and overlooked, consequences for human beings. In the case of psychology, our explicit epistemology—one variant of empiricism—has led to an implicit ontology: materialism. This implicit ontology is problematic because it tends to predetermine what we take human nature to be (indeed, what we assume is *real* about people) without careful consideration of the consequences that this ontological commitment has for a variety of important issues. As others have argued (e.g., Fisher, 1997; Slife, Hope, & Nebeker, 1999; Slife & Williams, 1995, pp. 149-157), this implicit commitment to materialism renders the original and meaningful aspects of psychology—intentionality, agency, morality, spirituality, the phenomenological essence of experience, the propositional attitudes, and so forth—nonexistent or meaningless. For example, there can be no mind or consciousness, in the meaningful sense described by James or Husserl, if materialism is true; there is only physical matter and its epiphenomena. We are thus left in a position where materialist psychology is unable to deal with meaningful human action and mental life in a meaningful way.

It seems accurate to say that these aspects of our experience have not always been taken seriously in more positivist-minded theory and research; but that state of affairs is itself an artifact of a scientific tradition and is therefore deserving of the same careful scrutiny that should be applied to any other tradition. We suggest a scientific tradition that we think would be espoused by William James, who asserted that aspects of our lived experience, such as freedom, agency, and moral action, cannot be disproven on traditional scientific grounds (James, 1890/1950, p. 572; 1897/1956) and so must be evaluated in other ways, not the least of which could be

evaluation in terms of pragmatic value and moral permissibility (in a Jamesian sense). This is a tradition that would have psychology's ontological boundaries demarcated at least in part by our response to the resonating moral question, What difference would it make in the lives of human beings to grant these phenomena genuine ontological status (see also James, 1907/1978, p. 97)?

A third problem with privileging epistemology, closely related to the first and second, concerns our privileging of positivist-style empiricism as a default epistemology without careful consideration of our subject matter. This practice has obscured and ignored the need for methods that are specifically formulated to interrogate the dynamics of a preestablished, explicit, and carefully thought-out ontology. In fact, some of the current debates concerning methods in psychology (e.g., quantitative vs. qualitative, positivist vs. postmodernist) may, in part, revolve around implicit disagreements and confusions regarding ontological commitments. We should not accept methods merely on the basis that they have been successful in the investigation of inert or inhuman matter in motion (Danziger, 1990, pp. 1-16; Hoshmand & Polkinghorne, 1992; Koch, 1981; Slife & Williams, 1995, pp. 179-180). As Sigmund Koch (1981) argued, a clear understanding and circumscription of psychology's content should precede the development of its methodology.

A fourth and final problem with privileging epistemology concerns the discipline's longstanding problem of disunity and fragmentation (see Yanchar & Slife, 1997, for a review). As stated above, psychologists debated the proper content of the discipline around the time of the early schools; but because this debate has been largely shelved since that time, we have continued to be plagued by a lack of shared content and purpose. As psychologists diffuse into small research communities with idiosyncratic subject matter and research agendas, some have tended to seek a scientific identity by bonding with other disciplines (e.g., pharmacology, neurology). The discipline has thus become threatened by disharmony, incoherence, and the possibility of dissolution or outright subsumption by other fields of endeavor (Spence, 1987). Although the vast boundaries of psychology have traditionally accommodated many diverse research topics and study areas, it would seem that the absence of an explicit ontology has worked to our disadvantage by compromising our ability to remain a coherent, independent discipline.

We suggest that an explicit ontology would help curtail trends toward increased disciplinary fragmentation and possibly dissolution. With an explicit ontology in place, we are provided a common core around which the majority of our work may cohere. This does not mean that psychologists would necessarily focus their efforts on a narrow, rigid, and irrevocably predetermined research program. Unity of the sort we envision is similar to a form of coherence, wherein the manifold aspects of the discipline fit theoretically and consistently into a larger ontological picture (Yanchar, 1997b). Such a picture may entail multiple levels of causation (e.g., Manicas & Secord, 1983) or organization (e.g., Rychlak, 1993), but it would also entail a common ontological framework for making sense of the variegated claims of research and theory. Although an explicit ontology could not guarantee disciplinary unity—indeed, it is doubtful that any proposal or strategy could guarantee unity—a shared ontological commitment would reduce the likelihood of further dissolution while providing some common ground within psychology.

A FRAMEWORK FOR ONTOLOGY

The four above-stated problems are serious enough that they require considerable disciplinary attention. Whether an explicit ontology can be agreed upon, however, is a difficult issue. We recognize that the idea of establishing such an ontology is ambitious—perhaps overly so. Can psychologists agree on what an appropriate ontology would entail? We do not presume to have complete, clear, and universally compelling answers to this question. However, we view it as our responsibility to renew, or to at least contribute to, the conversation over these questions by suggesting three tentative assumptions that may underwrite the establishment of an explicit ontology.

As is the case with most sciences, we first and principally assume that research and theory must begin with the givens of our experience—that is, with those aspects of our lived experience that seem, at least on the surface, to be undeniable. In the case of psychology we assume that the givens of our experience are those that appear to human beings in a (perhaps radical) first-person perspective, even if the existence of such givens defies the criterion of

public observability. This does not mean that we uncritically accept all self-report information nor does it mean that we advocate some type of solipsism. It is merely our suggestion that we take seriously the obvious experience that gives rise to the idea of a rigorous and systematic psychology in the first place.

Given this starting point, mental life *per se* would most certainly become a candidate for having real existence, at least as a working assumption. To be clear, we are here referring to mental life *as mental life* and not necessarily mental life as transformed and marginalized—via operationism, reductionism, and behavioralism—in such a way that it loses its original character or richness of meaning. In the tradition of William James’s radical empiricism (1902/1929, 1912/1996; see also Robinson, 1993; Taylor, 1992, 1998), our first assumption implicates all forms of lived experience, self-interpretation, and mental life as principal contenders for genuine ontological status.

Can we be confident at the outset that mental life as we have described it here exists and should be granted the status of real? For example, should we ignore Churchland’s (1995) assertion that “our common-sense conception of psychological phenomena constitutes a radically false theory, a theory so fundamentally defective that both the principles and ontology of that theory will eventually be displaced, rather than smoothly reduced, by completed neuroscience” (p. 214)? Our response to the question of whether mental life is real is an emphatic *yes*. A sophisticated defense of mental life, in light of reductive materialist arguments, goes beyond the scope of this article. However, detailed arguments opposed to various kinds of biological reductionism have been proposed by thinkers such as Davidson (1980), Eccles & Robinson (1984), Fodor (1995), Penfield (1975), Robinson (1986, pp. 435-445, 1995), and Slife and Williams (1995, pp. 149-157). We suggest that these sources provide a respectable examination of the philosophical issues and problems related to reductive arguments.

Second, we suggest, as a tentative rule of thumb, that any ontological commitment that *a priori* contradicts the givens of our experience, including mental life, be rejected (or at least critically examined and discussed) on the basis that it violates the first, principal assumption identified above. This is so, for compelling reasons that Daniel Robinson (1995) has clearly stated:

Let me say only that reductive strategies of the materialistic stripe have *always* been either declared or undeclared wars on psychology, for such strategies have as their principal objective the elimination of all psychological entities from the domain of the actually existing. This is why it is so ironic, if not pathetic, to witness contemporary psychology lusting after them. (p. 6)

A third assumption that may underwrite the establishment of an ontology for our discipline is that our ontology must be open to continual clarification, reexamination, and reinterpretation. We do not assume that an ontology, as we view it, exists independent of us and is therefore infallible and immutable in a classical metaphysical sense. We view an explicit ontology as an expedient in our thinking, yet one which we cannot assume will satisfactorily account for all experience yet to come. As James (1907/1978, p. 106) stated, “experience, as we know, has ways of boiling over, and making us correct our present formulas.” In this sense, we advocate the framing of ontological commitments as starting assumptions because we must have some logical starting point in our theorizing and research. Even so, our continued scholarly labors should clarify, if not uncover, hitherto unknown and potentially fruitful horizons of understanding regarding the basic phenomena with which we start. If, on the other hand, this third assumption results in the undermining of the above-stated second assumption (e.g., changes our ontology so that lived experience and mental life are banished as genuine subject matter), then the existence of psychology will surely have been short lived indeed. However, we are not confident that such a turn of events could or should transpire (see also Yanchar, 1997a).

Our three assumptions implicate a scientific perspective similar to hermeneutics (Gadamer, 1976; Taylor, 1985, 1989), phenomenology (Giorgi, 1970), and some forms of pragmatism (James, 1907/1978; see also Taylor, 1992, 1998). We believe these traditions provide essential philosophical perspectives on the task of establishing an ontology. Among other things, they suggest that we begin with an admittedly tentative and vague understanding of our subject matter and continue to reexamine and reinterpret it in light of our progressively new understandings. As we do this, we are continually cognizant and critical of the assumptions we are making. In some cases, we may find ourselves radically revising what we had originally taken our target subject matter to be, but that is a matter to which future research and theorizing would be devoted.

This perspective would also recommend that we interrogate the question of what constitutes real psychological content by moving back and forth between the interlocking questions of ontology and epistemology, and back and forth between these important issues and the larger discipline—including the discipline's current and past research practices, its pedagogical and training standards, and its publication policies. This continual movement back and forth, and continual movement from part to whole to part and so forth, seems particularly suited to the situation with which we are faced in psychology—coming to terms with, and ameliorating, a problem already underway.

Hence, we are arguing that we must begin our explication of ontology at the level of mental life *per se* (not allowing it to be reduced to biology, overt behavior, or social categories) and that we should pursue this explication as a self-founding discipline (Giorgi, 1985). This is not to reject the undeniably biological, behavioral, and social correlates of mental life, but it is to allow the multifaceted nature of mind to be studied in its own right, without being subsumed by nonpsychological levels of description or explanation. What a good theory of mind would look like—within the ontology we have herein adumbrated—goes beyond the scope of this article and involves many other moral, philosophical, and practical considerations.

On the face of it, however, the obvious contender for ontological priority at this juncture of the discipline's history might appear to be some variation on the contents of cybernetic, information processing, or connectionist theory (see Robins, Gosling, & Craik, 1999, for a report on the ascendancy of cognitive theory in psychology). This theoretical-ontological foundation for psychology would seem to permit mental events (of a sort) to be taken seriously. As we ponder this contender for ontological priority, however, doubts begin to arise and penetrating criticisms emerge, including the following: Cognitive and connectionist movements are themselves inconsistent and disunified (Staats, 1996, p. 9; cf. Newell, 1990); they fail to do justice to the flexibility of human mental abilities (Neisser, 1976; Rychlak, 1991), they have not worked out important logical problems (Reisberg, 1997, pp. 285-303; Slife, 1987, 1995; Watkins, 1990; Williams, 1987), they do not provide an accurate or realistic paradigm for understanding human mentation (Neisser, 1976; Searle, 1980), they have provided only questionable accounts of nonverbal cognitive phenomena such as imagery

(Varela, Thompson, & Rosch, 1991, pp. 45-47) and emotion (Taylor, 1985), and they are either based on an underlying philosophy that amounts to a mere variation of behaviorism (see arguments by Hishinuma, 1998; Leahey, 1992b; Rychlak, 1996; Williams, 1987) or are based on a reductionistic philosophy that claims nervous system activity is the fundamental reality of psychological processes (Bechtel, 1988; Churchland, 1995; Notterman, 2000). For these reasons, we suggest that neither connectionism nor more traditional cognitivism provides a suitable ontology for the discipline.

CONCLUSION: CONCERNS ABOUT AN EXPLICIT ONTOLOGY

The above analysis and recommendations undoubtedly generate many questions pertaining to the feasibility and perhaps the desirability of an explicit ontology. In this section, we briefly address six concerns that are likely to emerge in a discussion about these issues. Although we cannot anticipate all questions that may be asked in regard to our position, we hope that answers to these questions provide a clear sense of why an explicit ontology may be an important result of our scholarly efforts.

First, some psychologists may suggest that the question of ontology is an extremely complex and difficult issue best left to the philosophers; so why should psychologists be worried about it? Aside from referring to the four problems discussed earlier, we contend that science is never divorced from philosophy, and that it would be a paramount mistake to ignore, no matter how complex, the crucial philosophical assumptions that underwrite our scientific practices. As has been argued elsewhere, such assumptions have much to do with the concrete manner in which a science operates and with the knowledge claims finally generated (Slife & Williams, 1995, pp. 175-180; Yanchar & Kristensen, 1996). We do not expect that all psychologists would engage in substantial and extended philosophical discourse over these matters, but we do view this issue as important enough to warrant concerned discussion in the leading research journals, in addition to graduate and undergraduate training (see Slife & Williams, 1997, for a discussion of the role of theoretical and philosophical psychology).

Second, it might be argued that the discipline of psychology is already underway and thus extremely difficult to modify, shape, or retool at this juncture. In response to this concern, we believe that science is in a constant state of change and evolution. There is no reason why our call for psychology to examine its ontological roots cannot be part of these evolutionary changes. We suspect that an explicit ontology would simply shift the emphasis and focus of the discipline rather than necessitate a complete reorganization.

Third, some may argue that the study of human behavior and mental life is made unnecessarily complex and ambiguous when nonmaterial substances such as mental phenomena are taken to be fundamental. Material entities are in many ways simpler to study, particularly under the model of science that prevails in psychology. This leaning toward simpler material explanations can be seen in the current state of clinical psychology practice, where prescription privileges are actively sought and, more specifically, where one state (i.e., California) requires pharmacology training for clinical licensure. From our perspective, complexity and ambiguity are an essential part of lived human experience and thus must be included in any coherent account of human action and mental life. If current methodological resources for studying human existence are unable to effectively deal with its inescapable complexity and ambiguity, then alternative methods are required. As several commentators have suggested (e.g., Koch, 1981; Robinson, 2000; Slife & Williams, 1995, p. 179), the method should be made to fit the subject matter, not the reverse.

Fourth, readers may wonder if freedom and scientific diversity would be compromised if a single ontology were explicitly recognized. We respond to this question by suggesting that a variety of theories could and would emerge with a single ontological commitment in place. A single ontological commitment would not narrowly constrain the kinds of theories to be generated; rather it would provide general guidelines for how important aspects of human action and mental life could be treated—for example, it might suggest that we need not assume a biological reductionism merely because some other fairly successful sciences deal with physical processes (e.g., biology, chemistry). The only constraint placed on scientific psychology, from the perspective we endorse, is that certain kinds of entities and processes would be taken to exist as a matter of course. However, as stated above, the ontological

position from which we start would need to be open to criticism and modifiable on a continuing basis.

Fifth, some psychologists may be interested in the effects of multiple levels of causation. For example, some researchers may be studying how physiological stress affects psychological performance. In these cases, it is our bias that such research is often valuable and should continue to be performed. However, we argue that this research should not be formulated in such a way that the psychological phenomena under investigation are marginalized or theoretically reduced to a physical substrate as a consequence. In these cases, the psychological content of the study should be recognized as an irreducible aspect of the research question. Of course, the more vexing work of explaining how multiple levels of organization interact, without the threat of reduction, constitutes a genuine theoretical frontier for psychological science to explore (e.g., Manicas & Secord, 1983; Sperry, 1995).

Sixth, some readers may wonder if our position actually privileges ontology and ignores important methodological considerations. That is, are we placing too much emphasis on the issue of ontology? Are we suggesting that methodological, and indeed epistemological, issues be neglected or forgotten? We answer this question “no.” We find it advisable to organize and prioritize the deep philosophical questions facing psychology (e.g., What are the real and fundamental aspects of human experience? How can we be unified without being totalized? What methods should we use?), and then to proceed with our work in a way that properly addresses the needs of the discipline. From our perspective, and given the current state of psychology, we view the establishment of an explicit ontology as its most exigent task.

However, in calling for an explicit ontology, we do not wish to draw a hard distinction between ontological and epistemological questions. We recognize the philosophical axiom that epistemology and ontology are interrelated questions—that the way we answer one will largely determine the way we answer the other (see Robinson, 1985a, p. 10). This means that careful consideration of epistemology cannot be abandoned as we strive toward the establishment of an explicit ontology. Our primary concern, however, is that we *not* lose sight of the ontological side of the coin altogether as we proceed with the tasks of data collection and analysis. For to do so is to sacrifice the formation of a coherent psychology

that enjoys the advantages of purpose, coherence, awareness, and an appropriate methodology.

Thus, we contend that it is time to look at the fundamental philosophical questions facing our discipline from the perspective of ontology (what is real?), rather than method and epistemology, to see what insight and possibilities this perspective may yield. Because the methodological side of the coin has been so long discussed and examined—but without philosophical coherence and in a manner that has often irresponsibly belied and neglected the question of what is real—we feel it is now ontology's turn.

NOTE

1. The term *ontology* has been used variously by philosophers and scientists. We are using it in the manner that Robinson (1985a), Dennet (1969), and others have used it. As Robinson (1985a, p. 10) stated, "Thus, whether or not there are bona fide mental events is an ontological question."

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