Attending to Mind Itself

Mind Regained by Edward Pols.
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With the publication of Edward Pols's recent books on the nature of free will (*The Acts of Our Being*,1982, Univ. of Mass. Press) and knowledge (*Radical Realism*,1992, Cornell Univ. Press), the components were in place for a comprehensive assay of the mind-body problem. It is no surprise, then, that Pols's newest book, *Mind Regained* (1998, Cornell Univ. Press), undertakes just such a study, continuing and intensifying his defense of the mind as being able to know reality directly and as being as real as the things it is able to directly know. Like Pols's previous works, *Mind Regained* is so rich in interrelated content that it defies brief, simple summarizing, so this review will do the next best thing and provide a lengthy, complex summary. As the barest of synopses, however: in the first chapter, Pols makes it clear that, whatever its limitations, the tradition based on Plato and Aristotle was basically right on the issues of knowing, causality, mind, and soul. In three succeeding chapters, he shows how modern philosophy, in its union with science, oversimplified and distorted these issues. Finally, in the last two chapters, he gives us the perspectives and techniques for setting everything right again.

There is a point to the hyperbole of the title chosen for this book: although the power of mind's functions has accomplished great things in science and technology during this century, Pols says, "something profoundly important to mind's well-being has indeed been lost, and lost by the very persons who should have been most zealous to preserve it —I mean the most influential workers in academic philosophy, cognitive science, and neurophysiology." These people have failed to see that mind "operates as a real cause within and upon the material world, and that this causality is the source of all the theoretical and physical devices" that allowed the revolutionary advances we have witnessed in our time; they have "lost an adequate understanding of the very functions by virtue of which [mind] accomplishes both its everyday and its more exalted tasks" (vii). Since the intellectual leaders have so egregiously dropped the ball, Pols aims his book not at them, but instead at the wider intellectual community. While finding the mind-body problem interesting and important, mainstream intellectuals have been so negatively influenced by the writings of talented establishment thinkers that they are "unwilling or unable to look at their own minds in action and find there what has been left out of that establishment account." Pols hopes to convince this wider intellectual public to engage in what he calls "attending to mind itself," in order to gain "a new self-

consciousness on the part of mind as it manifests itself in their persons." He concedes that while attending to mind itself is not easy, it is "essential to regaining what has been lost, and . . . it is by no means a matter that must be left to professional philosophers and professional students of the mind" (viii-ix).

But why, specifically, has there been such a widespread loss of an adequate understanding of the mental functions by which we accomplish both our everyday and our more exalted tasks? In seeking an explanation, Pols focuses in the first part (fully two-thirds) of his book, "Attending to Doctrines," on what he sees as the two most important factors: the predisposition of most contemporary philosophers to what he calls the "negative philosophical judgment about the powers of the human mind" and the prevalence among philosophers and scientists of the "received scientific doctrine of causality" (viii). The former factor, based on "the myth of the self-enclosure of the mind" (19), a perspective on human knowledge established by Descartes's representationalism, and transmitted from Kant on down to the present, presents mind as having "no direct reality-attaining function [and having to] make do instead with a groping and always-frustrated approach to the real that begins in ideas and then makes its way by constructing theories about that which is not directly accessible." The latter factor is the attempt, characteristic of 20th century reductionist philosophers and scientists, to portray mind as being less real than the physical infrastructure that supports it, to explain mind as "an *effect* of the physical entities that science investigates so superbly," and to reject any theory that does not explain "any *apparent* causality on the part of mind . . . in terms of the doctrine of causality that prevails in science" (viii).

Notwithstanding the brilliance and usefulness of many recent achievements in the study of mind, Pols says, they were developed within a framework unnecessarily constricted by, and serving to perpetuate, the failure to grasp what was long ago acknowledged by the great philosophical doctrines of the ancient Greeks and medieval Scholastics: that "mind itself is the deepest ordering principle of nature or at least the most important expression of that ordering principle" and that "causality is hierarchical and that mind is central to that hierarchy" (1, 19). In guiding us back to such an understanding, albeit updated in content and method, Pols in the second part of his book, "Attending to Mind Itself," employs ideas and technique that are both simple and profound. He invites us, in the spirit of Plato and Aristotle, to use the "reality-attaining powers" of mind and "approach the study of mind by way of mind itself rather than by way of its infrastructure," and he shows us how to do so in a manner that avoids the disastrous errors engendered by Descartes in his own heroic efforts. In choosing to focus on the powers and functions of the mind itself, however, Pols in no way means to deny or dismiss the importance and massiveness of the contribution of the infrastructure in all the things that mind does, he merely intends to establish that "the physical basis of mind is not the only causal factor in mind," that something causally significant, "some truly *causal* factor is missing when the study of mind is approached only by way of the central nervous system." He further readily concedes that he is entitled to refer to the brain as belonging to "the infrastructure of mind" only if he is also

entitled to also refer to "the mind itself," i.e., only if he is also able to make his case that there is more of causal significance in the mind's functioning than is found by studying the nervous system (10-1).

If he is correct, Pols says, the implication is clear: human beings and their acts are irreducible "causal hierarchies." He is thus also inviting us to consider and apply a model of causality which, though explicitly designed to be able to incorporate the advances made by modern science in understanding the infrastructure that supports the functions of mind, is more similar to that of Aristotle and Plato than that of Hume and Laplace. He seeks to convince us that rational action, which he calls a "master function within which we can discern other functions brought together under the telos [end, purpose] that defines the action itself," cannot be completely analyzed and understood, from either a functional/temporal or a structural/spatial perspective, "as entirely an effect of causes other than itself."

(1) Functionally, any attempt at linear-event analysis of an action into a series of mental or physical events is futile, in that it cannot account fully for the holistic unity, the wholeness, of the action. The reason, Pols says, is that an action is not "temporally linear," instead requiring a non-discrete, "global" amount of time to be the action it is: "[T]he earlier 'parts' anticipate the later 'parts'; the later 'parts' retain the earlier 'parts' in order to complete what was begun there." The very nature of a rational act, with its "telic drive," thus requires that its causality be not linear and one-directional, but (in a sense) circular and bi-directional. On the level of conscious purpose, anticipation and remembering are the functions that allow a writer, speaker, or performer to construct sentences or musical phrases in which an earlier word or note does not *cause* a later word or note, yet is selected in anticipation of its being an appropriate predecessor, with the latter being selected as an appropriate successor by the guidance of remembrance of what it is succeeding. Something like anticipation and remembering, though often not on the conscious level, are essential features of any purposeful act, the purpose of the overall act itself being a vital and central facet, if not the totality, of the cause that guides the quasi-anticipatory and recollective functions by which the various events characterizing the act are carried out (15-6, 19).

(2) Structurally, any attempt at analysis of an action into a series of infrastructure events again leaves the action as a whole incompletely accounted for: "The causal contributions of discrete infrastructure elements are no doubt real enough, but they do not appear as such in the act. They seem rather to be *used* by the act [and] absorbed into its temporal unity." Though these elements are "accessible for study, . . . they are not accessible *as supporting mind.* It is only by deploying mind itself in the theoretical activity we call science that we can learn about that support . . . [W]e know well how to use neurons and so also electrons, even though we can give no account of that "how": we need only deploy mind itself in whatever task or problem happens to interest us. If the infrastructure is healthy, it will support that activity of mind itself . . . . [I]n the doing of the activity only mind itself is manifest to us" (14). Rather than being

caused by what goes on within its infrastructure, then, a rational act is *self-caused*, in the sense that "it makes use of the units of the infrastructure by incorporating them into its own actuality." This is the key Pols offers for understanding how knowledge, values, and motives have causal significance in human action. Much of the "actuality" of a rational act consists of:

> what mind comes to know in the course of the development of the act—the reasons it understands and assents to, the things it understands to be good and therefore to be pursued, the things it takes to be bad and therefore to be avoided. Things thus known are causes of the action in the limited sense that knowing is part of the action and these are things known. (16)

Pols begins in chapter 1, "Plato and Aristotle on Mind, Soul, and Causality," with a survey of the relevant thought of these two "most influential representatives [of] the ancient hierarchical view of causality." He first discusses the central feature of Plato's philosophy, his doctrine of the Forms, which are "*what* mind knows *when* it knows, but . . . transcend the mind as well as all particular things . . . not abstracted from particular things: they simply *are* in their own right, and . . . provide . . . the being in which physical things merely participate" (23). Plato held that the soul's purpose is to "bring life to the body . . . to rule or master the body and by doing so produce a complex of soul and body that is virtuous—in short, a good person" and, as a "theoretic mind," to know the Forms (31). In explaining how the soul was to master the body, Plato proposed the idea that the soul was in three parts, the appetitive, the spirited, and the rational. The soul is a self-mover, being "moved by desire, or love, of the Forms and in particular the Form of the Good; and as a self-mover it brings life to the body (or the many bodies) with which it is joined for a time" (39). Plato further viewed "mind, or reason, [as] the highest functional level of the soul," and as something that needs no causal explanation, for it instead is a powerful cause "that must be invoked in any adequate explanation of other things" (32-4).

Aristotle radically shifted the focus of the study of being. He regarded primary being not as eternal, unchanging forms considered in themselves, but rather human beings and other "particular, individual, changing, and developing being[s]," which he called "*ousia*." What makes an "individual being a *being*, i.e., real or actual, Aristotle said, is form, which Pols redubs "immanent form/essence" and, equivalently, "informing form or essence." Form operates concretely as informing form to make something an individual concrete being; form is "less than fully real—less than *actual* [i.e., immanent] . . . when it is not operating in that concrete way." Informing form can be defined (e.g., man is 'rational animal'), is not particular (i.e., is not the form 'Socrates'), and it is an ideal (individuals can fall short of it, in the course of their lives); it also has "causal significance, for it is the reason why the individual being develops into a man by a long process of change—change that does not affect the form itself, which . . . merely is . . . " Aristotle distinguished form in this primary sense

from that same form as "abstracted by a knower and thought about, in which case it is no longer the causally vital form . . . of some particular being but rather a universal form . . . " As Pols points out, "when Aristotle wishes to single out the abstract form, he often calls it a universal." Bearing this in mind will help us avoid the confusion that often results because "essence" is "sometimes applied both to the informing form in its concrete actuality and to the same form as entertained and defined by our intelligence (the abstracted form)" (35-8)

As known, i.e., in abstraction from the individual being that it informs, a form is not fully actual. For this reason, Aristotle refers to an individual as a "primary *ousia*" and the abstract (universal) form as a "secondary *ousia*." (The medievals referred to them as "real beings" and "beings of reason," respectively.) Moreover, since it is the informing form that makes something "a real primary being . . . Aristotle calls this informing form the actual *ousia*," which is, however, "itself fully real (actual) only when it is [making] concrete things real." Form as abstract/universal, on the other hand, "does not do or accomplish anything, and so it is secondary." The secondary *ousia* is what we consider when we want to "define or otherwise consider rationally this vital source of the being of a primary *ousia*, and if we wish to take account of the fact that although it is the vital source of individuality, it is not itself an individual [and we therefore] must perform an act of abstraction." By abstracting the form of something, we are considering that thing "in general," i.e., as a universal, as opposed to considering that same thing in its concrete actuality, i.e., as a particular, made fully real by being informed by its form (37-8). Pols summarizes:

> [T]he very actuality of a being is *form*; the active informing principle which makes it a concrete and functioning being worthy of the expression *ousia energeia* is also that which makes the being intelligible and thus capable of being defined . . . . [T]he form that informs a primary ousia and indeed makes it actual and thus primary also endows it with intelligibility and so makes it capable of providing to the inquiring reason that secondary *ousia* we call a universal or abstract form. (38)

Aristotle applied these insights first and foremost in his view of the soul, which he regarded as the actual, informing form/essence of a living organism, giving it both its *being*, i.e., its life, its movement and activity, on the one hand, and its intelligibility and definability on the other. In contrast to Plato, Aristotle considered the soul to be an "unmoved mover . . . of the body, providing the source of, and the goal for, the body's movement and development." In this respect, Aristotle considers the soul to be the formal, final, and efficient causes of the body (though not its material cause). Pols notes that Aristotle's own tripartite model of the soul differs from Plato's in that its first two parts (rational and sensitive/appetitive) correspond approximately to the three parts of the Platonic soul, adding a third part (nutritive/vegetative) not present in Plato's

model. Choice, which Aristotle calls "reason that desires or desire that reasons," is similar to Plato's "spirited" part of the soul, in that it can perfect itself by allying with reason or corrupt itself by allying with appetite/desire. It is moderation of one's appetites/desires that provides the conditions for the ideal, the rational, contemplative life. As in Plato's model, each of the parts of the soul is, for Aristotle, a vital functional level of the whole rational animal, which has to function together with the others in an appropriate manner in order for one to live well, the lower levels serving as infrastructure for the mind on the top level of the hierarchy (39-42).

In chapter 2, "Descartes' Dualism and Its Disastrous Consequences," Pols highlights the main points and rationale of Descartes's extreme mind-body dualism, with special attention to the aspects of it that led to the negative view of mind's power to know reality and to the state-event model of causality. Descartes saw mind as so radically different from body that by the very extreme difference in their constituents (soul or "thinking substance" and matter or "extended substance") neither could have a causal effect on the other. Despite his attempts to argue that the mind/soul and a machine-like physical body interacted via the pineal gland (!), neither the rationalist nor the empiricist philosophers who followed Descartes would accept the idea of mind-body interaction, instead opting for some form of parallelism or preestablished harmony, on the one hand, or materialistic monism, on the other. The empiricists leaned toward materialism because they uncritically adopted Descartes's idea that "the reality of the physical world is different from what common sense takes it to be," that the physical world is real while our common sense experience of it is not—or that the physical world is more real than our experience of it. Like Descartes, the empiricists believed that "knowledge does not consist in a relation between our mind and things but rather in the relation between the mind and its ideas . . . " Unlike Descartes, whose rationalist view that innate representative ideas gave the mind the ability to access the reality behind the veil of appearance, the empiricists held that the real source of knowledge was specifically the *impressions* in the stream of experience, which are not representative in a way that allows us to infer a reality beyond them, although prudence leads us to anticipate in their future course as much as possible. This effectively blocked empiricists from using experience as the basis for demonstrating that scientists are describing a real material world behind the appearances of the impressions of experience (54-5). They and the rest of modern philosophy remain trapped in what Pols calls "the central predicament of all post-Cartesian epistemology," an unreal one to be sure, else (despite Descartes's intricate and ingenious efforts) there would be no way out of it:

> [I]deas purport to represent real things or features of real things, but we have access only to the representations and not to their originals, if indeed there are originals . . . . Thus if subjects called bodies really exist—both the bodies that seem to make up the commonsense world and our own particular bodies, considered as parts

> of that world—we can know what bodies are (their true natures) and *whether* bodies really exist independently of mind only by undertaking a demonstration that begins with the representative reality of our own ideas. (50)

Pols points out a further way in which Descartes's dualism has, more indirectly, undermined or distorted the empirical study of mind, which often adopts the assumption that "mind and body may be understood in terms of two distinct streams of states/events, one mental and the other physical." The idea of a succession of mental states/events is implicit in Descartes' idea that mind is a radically different substance from body, but it is developed in explicit detail in Spinoza's parallelism and, more important, in Hume's phenomenalism. Hume held that we cannot demonstrate the existence of the external world from the sequence of impressions in our experience. Yet, since he held that our knowledge of the mental stream is more certain than that of the physical stream, a dilemma arises. Hume wants to argue that the latter stream of events is more basic and that it is ruled by cause-and-effect; however, he also wants to argue that the existence of the physical world is a postulation based on the mental stream, and that causality is not based on necessities in the (inaccessible) external world but merely on the observed regularities of sequences of events in the mental stream. Strictly speaking, then, Hume's view limits empiricists to viewing causality in either stream of events as being mere "constant correlation: x is the cause of y if and only if when x occurs y follows and when x does not occur y does not occur." Nor is there any apparent solution to the problem of which stream is more real or basic. The hard-nosed realism of the causal views of mainstream empiricist materialism are at sixes and nines with the watered-down causality of Hume's phenomenalism (56-7).

Pols follows up on this problem at the end of chapter 4 by briefly pointing out that the difficulties with conceiving of causality exclusively in terms of the succession of physical states and events have a parallel in the error of arguing that the powers of the mind are exercised only by means of a stream of mental states and events. The attempt of some contemporary analytic-empiricist philosophers to thus "assimilate a supposed mental causality to the received scientific doctrine of causality" is not an adequate correction to the materialist emphasis on the physical. Such mental states and events are, in fact, "abstractions from the lives of persons. In all plausible cases of what at least purports to be causally significant mental activity, it is only after someone has acted rationally that you can pick out with any confidence a series of states/events (of whatever kind) and consider their causal role in certain purposive achievements" (91). What this abstract state/event model, in both its physical and mental variants, leaves out of an explanation of rational action and purposive achievement is the "telic unity" of their temporal structure, i.e., "the directed unity of [their] several stages." (92). A comment in the following chapter puts an appropriate cap on this point:

> Given the profusion of acts of the mind that are intricately and ineluctably embodied, the notion that mind can be adequately described in terms of sequences of purely mental events set in contrast with sequences of purely physical events taking place in the brain seems an unreal contrivance. The contrivance is based on the obsessive notion that any physical event singled out from a physical system is wholly caused by prior physical events. Take that notion and apply it to supposed mental events and you have a straw-man dualism that can then be easily discredited in favor of one of the many forms of physicalist monism that are current today. (100)

Most of Pols's concern in chapters 3 and 4 is to reveal the problems with conceiving of causality exclusively in terms of the succession of physical states and events. One of the chief problems is that the very prestige of this viewpoint inhibits many who study the mind from trying to see whether the physical world in general and human beings in particular exhibit hierarchical causality. In chapter 3, "The Received Scientific Doctrine of Causality," Pols traces the historical process by which Aristotle's "four causes" were gradually replaced. The scientific efforts of Kepler and Galileo led to the modern view of causality that strips away formal causality in the full sense and thus telic or final causality as well. The received scientific doctrine also reduces material causality from the idea that "the hierarchical principle by virtue of which what was a formal cause at one ontological level could serve as a material cause for a higher (formal) ontological level" to the idea that inferred microentities are "more truly real than the entities to whose macroscopic structure they contribute, . . . the observed forms of macroscopic entities [being] dependent on the observer in a way analogous to such secondary qualities as colors;" reduces formal causality from the idea that a visible, intelligible structure emerges from a process of change to the idea that a law of nature (e.g., the laws of Newtonian mechanics) displays the mathematical form by which atoms and larger entities move; and treats efficient causality as interaction between observed entities, which move the way they do because they are composed of atoms (64-5). Following Newton's acceptance of atomism, Laplace assumes that nature is really a concrete physical system composed of "microscopic particles moving inexorably form one state to another and giving rise to all the macroscopic realities to which human beings respond." Laplace's view of causality thus sees the universe as a whole as being "a physical system that passes through successive *states*, any given state being the *cause* of the state that follows;" and "the transition from state to state is governed by laws of nature . . . . [T]he laws of nature are causal factors no less than the physical states are" (69).

Since most research and applied science focuses on physical systems smaller than the universe as a whole, the "working model," the physical sys-

tems model, for Laplace's view of causality regards a physical system at some particular time as the cause and that same system at a later time as the effect. Further, while this kind of mathematical analysis of two sequential states of the same physical system is sometimes most appropriate, at other times all that is necessary is a simpler model of causality that links two particular entities/events as the cause and effect of some transaction, the first event, condition, or entity being the cause of the second only if it is "necessary and sufficient" for the second (74). In an effort to precisely define "sufficiency," philosophers tend to argue in terms of a given transaction being governed by law. There is, however, a deep split among scientists and philosophers about the ontological status of the laws of nature. The Laplacean optimists because of their confidence in the realism of laws and their own ability to know things as they are, view the laws of nature as "prescriptive in a causally determinative sense . . . rather than merely descriptive . . . . [W]hat is thus explained could in principle have been predicted" (76). The Humean pessimists on the other hand argue that "there is no justification for the claim that we as knowers can find in nature either necessary production or the lawful necessity of a succession of events . . . . [I]f necessity does indeed exist in a nature understood to be independent of any formative/constitutive power the knower may conceivably possess, then the knower cannot observe, intuit, or otherwise confront it." The best we can hope for in formulating laws of nature is to use them descriptively, detailing how "transitions from one state to another of a physical system — large or small—do in fact take place" (78).

Since the Humean pessimists think that necessity cannot be found in an independent external reality, they attempt to re-interpret the Laplacean model in linguistic-logical terms: "*statements* about the state of a physical science that is regarded as the cause *logically necessitate* statements about the state regarded as the effect" (78). This is currently the dominant view in philosophy of science, and the result is that philosophy is trapped within "a linguistic prison," viewing physical entities not as real things belonging to a real external world but as linguistic postulations belonging to the "ontology" of whatever language the theories about them are expressed in. Despite this major difference in perspective, both factions pursue the traditional "reductionist goal for the unity of science," which requires that all laws aimed at explaining an upper level in a complex hierarchical system be deducible from the laws covering the base level, and that all concepts applying to the upper level be defined in terms of base-level concepts. Even though many of the Humean strain profess to view models of reality as being linguistic constructions, they no less than the others are "dominated by the image of a total (concrete) physical system in continuous progression from state to state under eternal laws that mandate just that progress and no other" (80).

The problems with the scientific doctrine of causality only get worse when you try to apply it to complex physical systems such as human beings, as Pols illustrates in chapter 4, "Mind and the Scientific Doctrine of Causality." Everything that exists and might be studied by science is part of an unimaginably complex universe of nested physical systems, so the Laplacean ideal of

state-to-state research and analysis is in practice supplanted by treating a given entity in relative isolation from the rest of the universe and as a relatively stable structure and attendant substructures, within which some specific thing is happening that we want to understand. However, we don't know how or what to add to the currently understood laws of nature to allow a causal analysis of any relatively complex part of the brain; nor do we know how to establish the initial conditions of such a part of the brain. Thus, rather than treating the whole brain, for instance, as a physical system moving from total state to total state, in practice, scientists instead adopt the more practical cause-effect model which treats one brain event as resulting in another brain event. The problem with this approach, however, is that although we know with certainty that, for instance, a complex pattern of guided electrochemical impulses is essential to vision, we don't know just how those impulses contribute to vision, let alone how they contribute to our rational awareness that we are seeing something.

Beyond this, there is the problem of how complex biological structures arise, both phylogenetically and ontogenetically. Pols points out the inadequacies of the current neo-Darwinist paradigm in evolutionary theory, which follows standard scientific doctrine in seeking to discredit and eliminate the idea of final causation. Although teleology appears to be the case, neo-Darwinists argue, given enough time all of the plants and animals and all of their characteristics could have arisen by chance operating through natural selection. If there were such a thing as *absolute* chance, their argument would succeed; but the consensus is that there is only *relative* (Laplacean) chance, the kind that "can be eliminated by better knowledge, although such knowledge is sometimes difficult to come by and hardly worth the trouble" (85). Neo-Darwinists indeed do adopt this viewpoint, holding as well the standard view of a smooth, continuous, necessitated movement from state to state. What they do not acknowledge is that relative chance does not have the same teleology-banning implications that absolute chance does, hence they persist in their opposition to purpose and final causation.

Another problem facing the accepted model of causality is the appearance-reality clash that shows up between common sense and the contemporary tendency to try to explain away the causality governing larger structures such as living organisms or the human brain in favor of that operating on the microentities that make them up. While scientists have basically abandoned the attempt to reduce higher-level laws and concepts to lower-level ones, many still try to argue that causality only actually *works* in the entities at the lowest, base level of nature. We should, they say, take microentities more seriously, i.e., as being more real and causally significant, than the organisms they constitute, and we should regard organisms as aggregates rather than integrated wholes. On the other hand, the mind tends to regard at least some macroentities as capable of rather serious things such as responsible action for which there is some causal and explanatory significance. Philosophers who deny the power of the mind to know an independent reality, however, claim that the commonsense idea that large systems and, in particular, the minds that belong

to such systems as ourselves have a causal significance is based on some kind of deception: " . . . *the antireductive disposition of common sense is nothing more than a disposition to take an appearance for a reality*" (89). They blame mind for generating the appearance and then taking it as reality; mind by its very nature reacts to what it wants to know by making something else and then taking that for what it wanted to know in the first place. We take complexes of electrons to be physical objects, we take lights waves to be colors, we take linguistic constructs to be reality. This creates a deep problem for materialism, which views mind as being causally generated by the physical operations of microentities—and also as itself generating the appearance that materialism's view is not complete—and also that mind too is an appearance. Despite this, the mind must also break free from its being a causally dependent appearance-generating appearance and somehow identify how things really are. Materialism and its view of mind can hardly be defended, when their very premises and conclusions seem to destroy the possibility of any such defense.

To depict starkly the difference between the standard scientific model of causality and the view that living beings are causal hierarchies, Pols proposes a thought experiment that illustrates the pitfall of any attempt to resolve the mind-body question via neurophysiology. First, he says, assume that an omniscient scientist could, at the start of a complex rational act, establish all the relevant conditions operating in the person carrying out the action, without interfering with that action in any way. Second, assume that the scientist knows all of the relevant laws of physics and chemistry and physiology. Third, assume that the scientist doesn't know anything about what the person being studied is thinking about or intends to do. If, in fact, we are causal hierarchies, the omniscient scientist will be unable, despite all of his knowledge, to predict even the *physical* conditions in the nervous system at the end of the action, because the nervous system's physical behavior is affected by the apex being's mental functions. Although the person could not have carried out the action without the causal support of the nervous system, the events involving the neurons are not the entire cause of the person's mental functions. Hence, the scientist will be unable to offer an adequate *physical* explanation of the state of the person's nervous system at the end of the action (90-1).

Pols opens the second part of his book with some prefatory remarks relating the laws of nature to the findings of science. He notes that there is no conflict between the view of causality as primarily hierarchical and the actual way in which science has progressed historically. Pols suggests that the laws of nature are "an abstraction from, and a codification of, the ordering power of entities whose ontological status is perhaps more fundamental," the laws of nature being "derivative from the ontic power of primary beings" in general (88). In other words, Pols says, the laws of nature are "regularities extrapolated to a universality that ranges far beyond their empirical base" and thus are "descriptive rather than ontologically determinative," detailing the recurrent aspects of entities "whose causal structure is more concretely and more adequately understood in terms of a hierarchy of causes." The closer the phenomena one examines are to the base of such a hierarchy, the more precise and

deterministic in character are the laws describing such phenomena. On the other hand, without assuming the existence of indeterminism or absolute chance in the universe, the use of statistical laws (rather than deterministic laws) may be unavoidable in describing more complex entities. Pols thus assumes that the reason determinism does not play a major role in human action is not because any kind of acausal "Epicurean swerve" is in operation, but because the apex entity in any given hierarchy (human or otherwise) "can determine what is determinable in the pyramid in which it expresses its self-identity, and that the more complex that self-identity is, the less predictable the outcome." He adds, in the final chapter, that "what is open to determination need not be pervaded by some absolute indeterminacy or chance in order to thus be open." It merely needs to be distinct in some sense from what determines it, in the sense that we at the apex of our pyramids "are in some sense distinguishable" from the biochemical processes occurring in our brains" (95-6, 127). While this does not establish free will in the indeterminist sense many claim is necessary to avoid the hegemony of determinism, it goes a long way toward establishing the relative autonomy of living organisms in general, and human beings in particular.

In chapters 5 and 6, Pols presents his positive thesis: "a rational agent is the apex being of a hierarchy of causes and so a primary being." Here he guides us in "deploying the causality intrinsic to the beings we are in order to remove a doctrinal obstacle to the acknowledgment of that causality"—in other words, in focusing on what mind actually, concretely is—first on "the functions of the minds of the apex beings (primary beings) we are," then on "the unity that expresses itself in these several functions, namely, the causality of the apex being that is refracted in these many functions" (95-6). By "the mind itself," Pols means nothing mysterious or obscure, but rather "the *full concreteness*, the *full actuality*, the *wholeness* of mind, the *lived reality* of mind"—in other words, the embodied mind, "the human being who speaks, argues, chooses, feels, and all the rest . . . " Pols steadfastly refuses to consider the mind as less real and concrete than the central nervous system, and he points out that when the central nervous system is studied "just as a biological entity," it is no less "being considered in abstraction from the full concreteness of mind itself" than is mind when we focus on its functions. Moreover, we are familiar with mind "in a way we cannot be familiar with items of the infrastructure [e.g., electrons, neurons, tissues, etc.] that support its deployment." The method by which Pols proposes to "attend to mind itself and . . . discriminate its functions" is the persistent, unswerving application of something that we all use to some degree or another, what many would call "introspection," and what Pols himself calls "the reflexive turn." This approach, he says, is somewhat like common sense, in that "to bring mind itself into view, you need only . . . focus on rational action, either your own or someone else's." In other words, "our familiarity with mind itself is by way of mind's doings: we must perform one of mind's typical functions in order to be familiar with that function. Our familiarity with mind itself, in short, is reflexive" (11-2, 14).

In the first of three applications of reflexivity in chapter 5, "Mind on Its Own

Functions," Pols lists and describes the functions of the mind, a task clearly similar to the one Descartes undertook in his *Meditations*, which had "disastrous consequences for our understanding of the human mind." Thus, Pols says, we must "redo the enterprise of Descartes" (97). Even listing mind's functions requires reflexive use of at least some of them; and if Pols is right about the functions of the mind being causally structured, then using those functions in making this list is an instance of such causality, both depending on and commanding the infrastructure of the causal hierarchy, without however needing to understand how the infrastructure contributes to either the function or our reflexive awareness of it. Pols replicates and adds to Descartes's list of mental functions. He adds "knowing," which Descartes apparently took for granted and so did not notice. Pols omits "consciousness" or "awareness," as did Descartes, because it is such a pervasive feature of mind that it qualifies all of the other functions; it is not strictly synonymous with "mind," however, since mind sometimes functions unconsciously. Pols also, with Descartes, omits "action" from the list; while one of the functions on the list may sometimes also qualify as an action, it is because it is in that instance serving as "a function of the whole entity/being—perhaps the most comprehensive of its functions." Thus, Pols conceives of action as being "expressive of the very unity of a rational animal," a unity that spreads throughout all the distinct functions that are involved in that action. It is such overlapping of the various functions of mind that reveal unequivocally that mind is involved in a particular situation; see Pols's discussion of knowing for an excellent illustration of this principle. Pols concludes that the union of functions in human action with the "billionfold multiplicity" of the elements in the infrastructure is so intimate that the standard conception of a mind-body *relation* does not fully capture the embodiment of mind (98-100).

Pols's second application of reflexivity—at once the most complex, difficult part of his positive thesis and the most crucial to its success—is to the two most vital mental functions, namely knowing and making, which he also refers to as "direct knowing" and "the formative function." He emphasizes, however, that the primary function under reflexive examination here is direct knowing, and he notes in passing that reflexiveness is so natural and familiar "precisely because it is a capacity of direct knowing." (This is an important insight, as I will explain in one of my critical comments.) Direct knowing, when applied in everyday contexts, is usually accurate, most errors being correctable by closer attention to the object of concern. Reflexive use of direct knowing, however, is anything but an everyday application of it, and moreover it is important because only by "making direct knowing the object of our attention and at the same time *using* that function" can we nail down what direct knowing can and cannot do; only thus can we "make mind itself aware of its own prerogatives" and shed light on the formative function and the other functions of mind (100-1, 112).

Pols makes an important distinction between primary direct knowing and secondary direct knowing (which he also refers to as primary and secondary "rational awareness"). It is here that Pols most rigorously expounds and

defends his position that reality is independent of, while knowable by, the mind. He says that in both its primary and secondary forms, "direct knowing is a realistic function and does not inevitably form, make, produce, or constitute what it knows." The former is "the knowing of concrete things that are available to us by way of the senses," the process by which "we attend to temporospatial beings (natural or artificial) that fall within our size range." The latter is the direct knowing of such artifacts as doctrines, theories, concepts, propositions, words, and language in general," as well as mathematical objects, "narratives, poems, and the other imaginative structures produced by the nonliterary arts." Such artifacts are not temporospatial, "although most of them are associated with temporospatial entities that are symbols for them," and they are all dependent upon the formative function. Once they are made, however, our awareness by means of secondary direct awareness of such "*entia rationis*" as propositions and theories "is just as direct, immediate, and vivid as primary awareness." Further, the term "secondary" refers not to the degree of reality of what is so known, but to the fact that we focus on such things "against a background that is always available by virtue of primary awareness" (101-2, 112). Pols further points out that the most important cognitive use of secondary rational awareness is in the direct awareness of the theoretical objects that the mind has formed, by means of its formative function, in order to know things like black holes and electrons "that cannot be known directly, usually because they do not fall within the temporal and spatial size range of our sensory modalities." Such things can be known even indirectly, however, only because our rational awareness is able to know directly many concrete temporospatial things. Pols is unabashedly bullish on this matter:

> Indirect knowing is one of the glories of human nature, if only because science depends on it: it is the outcome of a complex interplay of secondary rational awareness of theory with the primary rational awareness of commonsense things in which theory begins and in which it is later tentatively confirmed or decisively disconfirmed. (113)

Nonetheless, Pols says, we should not be lured by the vast proliferation of *entia rationis* (conceptual products) into thinking that all knowing is indirect, and that we cannot know reality directly. This is the error into which Descartes led several centuries of philosophers, the "negative philosophical judgment about the powers of the mind"— that radical distortion of the function of mind which Pols is at pains to correct in the second reflexive turn. The key is to realize that the formative function, while essential to both secondary direct knowing and indirect knowing, is a distinct function from direct knowing and does not in any way compromise or negate the mind's ability to engage directly with reality. Pols uses the distinction between primary and secondary awareness to account for the way that the mind moves back and forth between theory/language (the rational) and empirical testing (the experiential) in direct knowing:

> [W]e deploy the seamless unity of rational awareness in coping with each of those "poles" of knowledge: we know proposition or theory directly, and we know directly (and do not merely experience) that which is empirically relevant to proposition or theory. (113)

Philosophers typically try to split knowing in two, assigning reason to the conceptual-linguistic sphere and experience to the perceptual-feeling sphere, thus failing to realize that primary direct knowing is not a problematic re-combining of reason and experience, but fundamentally instead "an intimate union of rationality on the one hand and experience/awareness on the other . . . [a union] that both takes place in the knower and completes itself in the thing known." When philosophers try to break up the integrated function of direct knowing into discrete rational and empirical components (e.g., ideas or impressions, concepts or perceptions), they make the mistake of claiming that these in-the-mind things are what we directly know and that they function as cognitive intermediaries by which we indirectly know, believe in, postulate, or construct concrete things in the real world. Not only does this line of thinking lead to skepticism about the reality-attaining power of mind, but it is also self-defeating in two other ways: (1) you cannot even carry out such an analysis "without immediately reinstating the seamless unity of the function . . . [Y]ou would be drawing on the unity of the function of direct knowing to know both a 'rational' item and an 'empirical' item . . . [I]n short, you would be depending on the unity of the function to deny its unity," something Aristotle referred to as Reaffirmation through Denial; and (2) even if you could split knowing into discrete parts, you would then be faced with an infinite regress, i.e., of having to analyze both the 'rational' and 'empirical' parts into "yet other pairs of rational and empirical components," and so on (101-4).

Against such pitfalls, Pols urges us to recognize that when we engage in direct knowing, we also actualize a plethora of other functions, including (to name a few) conceiving and perceiving, attention and intention, remembrance and anticipation, which "are real enough yet do not exist in a 'pure' form," because of their necessarily being actualized together, "as part of the integrity of (primary) direct knowing" (101-4, 114). With stern eloquence, he reminds us:

> Experiencing (in the restricted sense of perceiving) does not vanish when (in secondary direct knowing) we attend to rational items like ideas and concepts. Rationality (in the restricted sense of conceiving) does not vanish when (in primary direct knowing) we attend to experiential items like patches of color . . . No activity of the mind, no matter how formal, no matter how designed to exclude any reliance whatever on any experiential factor, is without some reliance on all the bodily particularity of some

> here-and-now. Conversely, any effort to so isolate the here-and-now as to come upon an experience from which all participation of rationality has been excluded turns out to be merely a misguided exercise in direct knowing . . . The experiential always suffuses the rational and the rational always suffuses the experiential . . . When mind *knows directly* . . . rationality and awareness exist in mutual support: . . . reason *experiences* [and] our experience of what we thus attend to is pervaded by *rationality* . . . You cannot suspend the seamless unity of the act of direct knowing when you undertake analysis, anymore than you can suspend the embodiment of mind when you engage in abstract logical reasoning. You can only do what is so often done in theory of knowledge: fail to notice what you are actually doing. (104, 111)

In his third application of reflexivity, Pols seeks to justify and extend the claims he makes with and for direct knowing. By the very nature of knowing, we cannot step outside of direct knowing in order to provide justification of the conclusions of direct knowing. When direct knowing/rational awareness "completes or actualizes itself in something whose being is independent of the knower," a "satisfaction . . . takes place within the knower," which, however, "is wholly taken up with the thing known . . . so much so that the only way to bring out its peculiar character is to call it a satisfaction in knowing the other—a satisfaction in acknowledging the known as what it is" (115-6). The satisfaction, being internal to the knower, is "subjective," but only in the sense of "of the knowing subject," not in the sense of "self-enclosure [or] isolation [of the knowing subject] from everything that is not a product of the mind"; and being rational, the satisfaction is impersonal and universal. This fulfillment of the "rational awareness, rational subjectivity, or rational consciousness" of a particular knower is correlated with "objectivity, reality, actuality, or being," all of which are understood to mean that the things that are directly known are independent "of the function that is satisfied in them." The function of direct knowing is justified if and when it completes itself in that which is other than itself by acknowledging the other to be what it is. In other words, direct knowing "is a self-justifying function," not in the sense that it is infallible or "exempt from error in any particular instance," but that error can exist only because of the possibility of avoiding error. The universal character of one's rational awareness

> transcends each instance it is integral with, and so possesses a general authority that is not touched by its failure in a particular instance. Knowing yourself mistaken about just *what* is before you in some particular instance, you nevertheless know that the misidentified thing is

> other than yourself and so independent of your cognitive act. Confident that your failure can only be defined within the framework of a general competence, you find that you are in a position to try again. (116)

In both primary and secondary rational awareness, Pols says, "you cognitively attain the object and enjoy its otherness, but in doing so you allow the object to take possession of your subjectivity/consciousness." In primary rational awareness, where the object is a temporospatial item, the distinctness of the two entities involved—the knower and the known—includes the fact that there are two distinct temporospatial locations; that distinctness is overcome insofar as "something *over there* is cognitively possessed *right here* in the subjectivity of the knower." In secondary rational awareness, even though "beings of reason" (products of cognition and imagination) are not always temporospatially distinct from the knower, due to their often having been formed *by* the knower, they are still essentially distinct from the knower due to their being "*formed to be distinct* from the knower." Each concept, theory, poem, or novel "has an inner integrity that must be respected." For instance, "as your mind moves through the parts of a theoretical structure to determine their consistency, coherence, and relevance to the matter at hand, their place in the structure has an otherness from yourself as knower that demands rational respect in a way analogous to the demand made by temporospatial objects." Pols defines the essence of the relation between knower and known as:

> the attainment and enjoyment by the knowing subject of the particularity of the known object—that is, a satisfaction on the part of the knower in just *this* known . . . [T]he otherness of the known object is overcome by you as knower, even while the discrete self-identity of the two beings thus brought together is preserved and acknowledged . . . [O]ne component of your satisfaction as knower is your acknowledging, in the very act of taking cognitive possession of the thing known, the utter independence of that object from the function that attains it. But your satisfaction as knower also includes your celebration of the integrity of your own achievement: as knower you have reached out and brought into yourself an awareness of something other than yourself with which you nevertheless acknowledge an underlying affinity. In short, the complex satisfaction is a satisfaction in both the particular being of the object and the successful deployment of the function that attains the object. (117, 118)

By thus having explicated the cognitive relation between knower and known, Pols says we are now in position to reject the modern view that universals originate in the mind, which uses them to project an *apparent* entity; that what our mind (using universals) presents as being unified, stable entities are actually just "a multiplicity of particular stimuli." The mind is only able to attribute universals to particulars because "the formative function of mind is also engaged in the transaction," breaking up the entity's unity or universality into a number of "particular" universals. While rationally aware of a particular, "we are also aware that it shares in a unity that all particulars share in": it does not participate in some particular Platonic form, but "in a unity/universality to which the formative function of the mind has responded by producing multiple (particular) Platonic forms" (118-9).

The *coup de grace* to "the negative philosophical judgment about the powers of the human mind" and the "received scientific doctrine of causality" is administered in chapter 6, "Mind at the Apex of a Hierarchy of Causes." Pols takes us through the fourth and final movement of the reflexive turn by considering the rational actions that utilize mental functions and the agent of those actions, "a human being that acts—the being in which the action originates, out of which the action comes . . . [which] may properly be said to cause the action and so provide an explanation for the existence of the action" (120). Human beings do not, however, cause their acts in the same sense in which the prior movement of one physical object causes the subsequent movement of another; if causality is understood strictly in terms of temporal sequence, the relation between human beings and their acts cannot be instances of causality. We continue to shape and guide our acts, rather than simply initiating them and then having no further causal influence; we have the complex effect we are aiming for in mind, and having it in mind has an influence on the effect coming about: "[T]he telos is effective throughout the sequence of which it is the completion" (122). From this, it is clear that the causality of human action cannot be made intelligible without a considerably broader and more multifaceted model of causality than the one proffered by mainstream science.

The way Pols proposes to transcend the overly narrow scientific model is to consider the causality that the mind of a human being both knows and exercises as it gains direct knowledge of the world in which it lives. He has already shown that direct knowing is capable of grasping the reality of something—whether concrete, perceivable things in the world or things ideas and theories—distinct from and independent of the knower. The things so grasped are both particular and possessed of a kind of ordered unity that is present in everything that exists, however simple or complex, including the mind itself. Pols calls this the "U-factor" ("U" for "universal"). When the formative function produces ideas, theories, etc., those products are then *formed* realities that secondary direct knowing can grasp. By attending to mind itself, we thus find that the cognitive achievements of direct knowing and the creative achievements of the formative function are *causal* achievements as well—and that it is the *mind itself* (as embodied in the infrastructure of the human body) that achieved them. In so doing, we realize that "to be capable of knowing an inde-

pendent reality is to be capable of *being a cause* in a sense that illuminates that achievement." When we cognitively grasp real things that are other than our particular selves, we are causally responsible for that grasp, as well as for our cognitive grasp of the causality of those other real things, some of whom have the same kind of causality we used in our cognitively grasping them. This is not a mere inference or postulation based on evidence, but the result of our using, as rational agents, a function whose power to grasp reality includes the reflexive grasp of the status of ourselves and others as real entities.

Now that we have established the power of the mind to know the components of its infrastructure, to understand how we rational beings have causal power, and to understand how components of our mind's infrastructure have causal power, we can see how our minds are situated at the apex of a causal hierarchy. Having used our mental functions in determining their own nature and validity, we can further confidently and validly use them to grasp the fact that those functions are causally dependent on our being the apex of "a causal hierarchy . . . an infrastructure that defines the embodied state of the human mind" (125). Pols uses the metaphor of a pyramid to illustrate how each of us is the apex of a multilevel structure "of causes made up of untold myriads of entities/beings, each of which is the apex of a smaller pyramid of causality. As you deploy your various functions in an act, . . . you also deploy your causality—your power of determining something—down through the multiplicity of the pyramid" (126). Each of us is only *one*, while each level below us is composed of *many* items. While each of these items, by virtue of its own determining power, contributes that power "upwards" to the causality we exercise in rational action, we in turn exercise our own determining power "downwards" over each of those items. The effects we thus produce in the items lower in our pyramids are not the result of a physical process operating in a cause-effect sequence. We cannot activate a mental function without the simultaneous, nonsequential pattern of firing that allows the function to take place. This same pattern pervades the way in which smaller causal pyramids within us determine "downwards" the activities and outcomes of their components that contribute to the pyramids being just those particular pyramids, while their components contribute causally "upwards" to the pyramid's exercise of determining power. In the same way that our self-identities are dependent on the particularity of our own pyramids, so in general are the items within our own pyramids related to the items within their pyramids.

Further, in referring to living organisms as entities or beings that are pyramids of entities or beings, Pols is signaling his disagreement with the current fashion of regarding "functional levels" as being more respectable than the things that possess those levels of functioning and whose carrying out those functions raise the issue of what a function is. His ontology regards entities as the fundamental kinds of things in the world; and although we commonly refer to "anything that we can single out by its apparent unity from the rest of the environing world" as an entity, the kinds of entities that carry out actions, he says, are the *primary* entities (127). For this reason, he refers to primary entities as exercising "ontic causality" or "ontic power;" and he adds that, to the

extent that the entities at lower levels of our organismic pyramids carry out act-like functions, they too can be said to exercise ontic causality over their own components and to function, in a more limited sense, as primary beings. Ontic causality is universal, existing in and transcending every individual, unified thing that exists; it is the U-factor mentioned earlier. This is Pols's ultimate reply to microentity reductionism:

> [W]e have dismissed the claim that the (transcendent) nature of things has its *locus operandi* only in the microentities of the base level. For that we have substituted the claim that its *locus operandi* is in the apex of each primary being from the most evanescent particle to such highly complex beings as Newton and Mozart. (132)

Here, at last, Pols reveals the full structure of his model of causality. The power we exercise, on any given level of our organismic pyramids, in any of our functions or actions is *temporal,* taking time to occur or be carried out, and in a sense *"horizontal"*, happening between distinguishable entities in a cause-effect manner: "a temporal sequence in which two distinct items can be discriminated— one in which the power originates (you or me), the other on which the power is exercised (some item in the world around us)" (131). We affect other entities in the world and cause things to happen in the world; parts of our bodies affect other parts of our bodies and cause things to happen inside us. This physical mode of causation (which many think is the only kind there is) Pols refers to as "transeunt" causality, in contrast with what the medievals called "immanent" causality, and which Pols refers to as "ontic" causality: the "*vertical*" and *atemporal* causal relationship *between levels of an entity.* The upward and downward causality that we and our body parts exercise is nontemporal, in the sense that in exercising it, we do not do anything somewhere else "whose impact or influence in the multiplicity of the level below [us] *only* appears there *after* [we] deploy it" (129).

> You do not think and afterwards produce electrical patterns to which your thinking contributes. So also with the support given your act by the neuronal level: each neuron does not do something whose impact or influence only appears afterwards in your thought. (129)

In contrast with the distinct entities involved in transeunt causality, the relationship between interacting levels of a hierarchy is ambiguous. In one sense, each of us at the apex of our pyramid is "identical with the multiplicity of functioning items" in our pyramid; in another respect, that self-identity is asymmetrical, in that the apex is a One and its functional items are a Many:

> The self-identical actuality of each being that possesses immanent, or ontic, causality thus consists in an asymmetrical union of a universal One with the particularity of a Many on which it confers unity. Any being that is the apex being of a pyramid of many beings is a *particular* being by virtue of that pyramid, but it is *one being* by virtue of a One that is not unqualifiedly particular to it . . . [W]e are not considering a radical plurality of Ones but a plurality of Ones that share in a universal (thus transcendent) One . . . It is the Many intrinsic to any such being which makes it particular; it is the One intrinsic to it which makes it not merely a particular. We are such beings in all our occasions but most vividly so in the exercise of our mental functions. (133)

Further, says Pols, the union of the apex and lower levels of the pyramid is so intimate that the term "relation" is not adequate to describe how they are . . . related! The pitfall comes in regarding mind and body in a Cartesian dualistic manner as being two functional levels—consciousness and neuronal—each of which is "ontologically complete in itself [and] capable of acting on the other" (129, 130). Consciousness is not something that has ontic causal power that it exercises over neurons, and vice versa. It is we as unified entities that *achieve* consciousness of things in the world by exercising our ontic causality over neurons and receiving support from neurons. Consciousness, that is, is not a *source* of causal power, but an *outcome* of it; it results when we take action in the world. It is not consciousness per se, but we, *as conscious beings* that cause things to happen.

The hierarchical model of causality also allows a clearer understanding of the nature of the relation between knower and known. Here Pols is careful to draw the vital distinction between the causal relation between the known and the knower and the cognitive relation between the knower and the known. If rational awareness really does reach out and actualize itself in something other than itself, then the temporal, sequential, cause-effect, transeunt causal relations of the scientific doctrine of causality are only part of the explanation of the relation between an act of direct knowing and an entity or situation toward which it is directed. This basic cognitive achievement also essentially consists in the nontemporal, immanent, ontic causality exercised both by the apex being (knower) and by all parts of its pyramid. Rational awareness begins with an act of attention by the knower. The apex and infrastructure are nontemporally, onticly united, as the knower engages in the temporal, transeunt act of rational awareness of the known, and is otherwise temporally, transeuntly linked to the thing or situation known. In particular, the known has a causal affect on the knower's nervous system, which in turn affects the ontic support given by the nervous system to the knower. The result of this complicated causal pattern is that the apex being cognitively responds not to its own infra-

structure as affected by the known, but to the known itself. This is how "*the knower achieves rational awareness of the known*" (134). The knower cannot extract an independent reality out of the knower's own infrastructure, however; at most, what the knower possesses in its infrastructure is some sort of neural *representation*, mapping, or coding, as against the known, which is the *original*. It may be that the knower uses its internal representation of the known in reacting to the known, but it is the *known* that is *known*, not its representations in the knower. Rational awareness thus requires more than just the transeunt causal relation between the known and the knower's nervous system and the immanent causal relation between the knower's nervous system and the knower. Pols says that the additional necessary factor is the "affinity" between knower and known that derives from a universal factor, i.e., "an ordering power they share in," though he does not think we are capable of know exactly how it works, just that it *does*.

> [O]nly mind itself, in each of us, can determine what the functions of our mind can and cannot do. And since even those of us who are materialists constantly make determinations that this or that is *truly the case*, it seems that all of us acknowledge, at some level of discourse, a reality-attaining competence that belongs to mind itself. (135)

Thus does Pols sweep aside once and for all the negative philosophical judgment about the power of mind, which "led to the dismal conviction that we can know neither other beings nor ourselves directly and so cannot know any causal significance they have" (137). And he does so with such elegant consideration for the reader. He graciously concedes that his own positive thesis is not exempt from the fact that "doctrines can stand in the way of actuality," and he generously invites the reader to apply what is seen by a "focus on what our minds actually do" in correcting "what is inadequate in what [he has] written" (20). No double standard here! Although hard pressed to find major fault with anything Pols has said, I will, however, offer these observations on what are some relatively minor points.

Although Pols studiously avoids the term "introspection," in favor of phrases such as "mind attending to itself" or "the inwardness of mind" or "the reflexive turn," it is clear that he regards such familiarity with mind, however labeled, as a real process, giving direct awareness of another real process. Yet, he makes one statement that I regard as incorrect, followed closely by another that I regard as uncharacteristically and unduly pessimistic. The latter first: "We may be unable to give an adequate account of what reflexiveness is, and probably we shall never be in a position to say how it is possible—how, for instance, some infrastructure items might subserve reflexiveness" (14). Surely we already know, in a general sort of way, how the direct awareness of reflexivity or introspection most likely takes place. In regard to two forms of direct sensory awareness—externally directed perception (sometimes called "exteroception") and internally directed perception of bodily conditions ("sensation"

or "enteroception")—it has long been known that the brain receives and interprets signals transmitted from receptor organs (i.e., certain tissues sensitive to patterned energy associated with the object of awareness). There is no apparent reason why mind in its reflexive mode is any the less in need of a physical infrastructure than is sensory awareness, or mind otherwise for that matter. It is thus theoretically parsimonious and hardly a stretch of the imagination to suppose that, in various parts of the brain, numerous groups of tissue, however presently obscure and difficult to detect in their functioning, are similarly capable of responding to patterned energy associated with the brain's own mental functions—those groups of tissue thus serving opportunistically as an itinerant receptor organ attuned to mental processes carried out in neighboring tissue regions, and thereby functioning as the infrastructure of introspection. This seemingly reasonable speculation is, I submit, more in the overall optimistic spirit of Pols's approach to the mind-body problem and philosophy in general—and in no way negates his important point that reflexiveness, like all mind's operations, is only *incompletely* explained by a temporally causal, infrastructure explanation.

As for the first statement, "We do not experience mind itself as we experience (by virtue of mind itself) a color, a smell, or an ordinary physical object like a chair," there is a respect in which Pols is correct: we experience colors, smells, etc. by using the senses to attend to physical reality, not to the senses themselves, whereas we experience mind by using mind to attend to itself. However, the general kind of awareness is the same in each case; both sense perception and introspection are forms of direct awareness—moreover (if I am correct), using tissues (whether peripheral or internal to the brain itself) that function as the infrastructure of *direct* awareness (viz., as receptor organs for collecting patterned energy and relaying the collected data to some region of the brain for further processing). Furthermore, just as the mind as we are reflexively aware of it is no less real than its physical infrastructure of which we are not (and need not be) directly aware but which supports and enables its functioning, so too are the colors, odors, etc. of physical entities as we are perceptually aware of them no less real than the physical infrastructure of those entities (viz., the atomic and molecular structures) that support and enable the interaction of their colors and odors (via streams of patterned light and airborne chemicals) with our sensory organs.

Another salient virtue of Pols's thinking and writing is the clarity that results from his conscientious and careful analysis and use of terminology. Whenever there is the least chance for misunderstanding, due to conflicting historical usages of a term, Pols guides the reader through the maze of terminology shifts and follows through when appropriate by joining with a forward slash two or more terms taken as synonymous or necessarily related in that instance. Due to the degree of complexity and amount of potential confusion in the topics linked to the mind-body problem, there is thus a proliferation of items such as "states/events," "form/nature/essence," "ideas/concepts," "Forms/Ideas," "entity/being," "subject/substance." Far from seeing this as a flaw, I regard it as a methodological or stylistic virtue. What I would like to have

seen, however, is an even more exhaustive application of the technique. With all the care Pols took to clarify the concept of an entity's essence or nature, for instance, it struck me as odd that he did not also incorporate the oft-encountered synonym "identity" into that discussion. Similarly, although Pols clearly distinguished between "a being" in the sense of an individual entity and "being" in the sense of existence, there was no conjoining of the latter terms into "existence/being" that I could detect. Another example, perhaps more helpful, would be the acknowledgment of the term "introspection" and, for reasons noted in the previous paragraph, its conjoining into "reflexivity/introspection." As I said, however, these are relative minor quibbles, far outweighed by the considerable good that Pols accomplishes with his illuminating treatment of "essence," "substance," and the "object(ive)," "subject(ive)" pair. The latter discussion, revealing the flip-flop in meanings perpetrated by the Cartesian-Kantian paradigm, ranks in insightfulness and clarity with that in John Deely's *Basics of Semiotics* (Bloomington, Indiana: Indiana University Press, 1990).

The one other comment I must make is that, despite the laudably clear-headed way in which Pols approaches his subject, some of the related issues he covers—especially the historical development of the "received doctrine of causality"—are very *difficult.* In recent years, for instance, I have witnessed the foundering of numerous mind-body and free will debates by thinkers otherwise very Aristotelian, because they were not able to sufficiently break out of the Humean model of event-causation to realize that causality characterizing mind is not fundamentally a matter of antecedent conditions. For this reason, I am not confident that Pols's negative case will have the impact that it needs to have, if the narrow, inaccurate Humean perspective is to be supplanted by the Aristotelian entity-action concept of causality, and its corollary, the Platonic-Aristotelian apex-infrastructure model of the causality of primary entities.

On the other hand, that is all the more reason to appreciate the skill with which Pols marshals his positive arguments. He has crafted a major advance in philosophical methodology—a carefully formulated way of thinking (reflexivity/introspection) that is as challenging and revelatory as the Socratic method—and has applied it in a way that establishes the reality and potency of the mind, while lifting up the dedicated reader's ability to exercise that very potency. He has also formulated a multifaceted model of causality that does full justice to the subject, allowing thinkers to grasp not only the nature of the physical world but also the nature of the living beings that inhabit it and, (some of them) try to understand it. Had a thinker of Pols's caliber been active 400 years ago, we might have been spared the long detour of modern post-Cartesian philosophy, and all of its dreadful consequences, intellectual and social. Even now, however, for the world to enjoy the full salutary benefits of Pols's way of thinking, it will take more than just a book review here or there by an enthused reader to do the trick. His ideas and methods must be taught and spread in university philosophy departments where, if all goes well, they will eventually trickle down to the theorists in the sciences and humanities. If any of the readers of this review are inspired to help begin such a trickle-down process, it will have achieved its purpose.