

Panpsychism in the West



DAVID SKRBINA



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David Skrbina

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dedicated to all those who seek alternatives to the mechanistic worldview

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Panpsychism in the West

1 Panpsychism and the Ontology of Mind

1.1 The Importance of Panpsychism

The nature of mind has been an enigma since the beginning of recorded history. In many ways it is as much a mystery today as it was to the ancient Greeks. We now know much more than the Greeks did about the brain and human physiology, and we have intricate and detailed philosophical concepts, and yet we seem unable to reach any kind of consensus on what mind is or how it is related to the body or to matter in general. The enigmatic nature of mind is so pervasive and compelling that some current philosophers have given up on the problem, calling it intractable or unsolvable *in principle*.

The difficulties surrounding mind seem, at the very least, to call for a deep reexamination of the problem. Most current theorists carry with them two basic assumptions: (1) that mind is limited to humans and perhaps the “higher animals” and (2) that mind is somehow dependent on or reducible to the physical substrate of the human brain. (Others go to the opposite extreme and hold that mind is really a soul, something distinct from the body and fundamentally nonphysical; I will put this view aside for the moment.) Point 1 is usually taken for granted and rarely argued for. Point 2 implies a belief that there is something fundamentally unique about human and animal brains, and that they alone among all the physical structures of the universe can support mental processes. This second point is conceivably true, but no one has given a plausible account of why this might be so. Certainly there are unique physical characteristics of the human brain (the number and density of neural cells, the modes of input for sensory information, and so on) that most likely account for our uniquely human mental capabilities: our abilities to reason, to experience rich emotions and feelings, and to hold beliefs. But we have found nothing so unique as to alone account for the presence of a mind. What is at issue

is *not* the nature of the uniquely human mental capabilities, but rather a *general understanding* of the phenomenon of mind in its largest sense.

Many thinkers, past and present, have seen fit to challenge the above two assumptions. On the basis of their investigations of the natural world, they have viewed such assumptions as largely unfounded. For such thinkers there is no reason to limit mind to humans and (perhaps) higher animals; in fact, they have reasons—both intuitive and rational—to claim that mind is best conceived as a general phenomenon of nature. As such, mind would exist, in some form, in all things. This concept is called panpsychism.

Panpsychism, roughly speaking, is the view that all things have mind or a mind-like quality.¹ It is an ancient concept, dating back to the earliest days of both Eastern and Western civilizations. The term ‘panpsychism’, introduced by the Italian philosopher Patrizi in the sixteenth century, derives from the Greek ‘*pan*’ (all) and ‘*psyche*’ (mind or soul). The theological implications of soul are largely set aside in the present work; at issue is the notion of mind as a naturalistic aspect of reality.

Panpsychist theories generally attempt to address the nature and classes of things that possess mind and, perhaps more important, to address what precisely one means by ‘mind’. These two issues—the nature of things and the nature of mind—are, of course, central to many aspects of philosophy. Panpsychism, however, lies at a unique intersection of the two concepts, where mind is seen as fundamental to the nature of existence and being. If all things have mind, then any theory of mind is necessarily a theory about ontology, about the nature of extant things.

Panpsychism is distinctive in two further ways.

First, it is a unique kind of theory of mind. More correctly, it is a meta-theory of mind. It is a statement *about* theories, not a theory in itself. As a meta-theory, it simply holds that, however one conceives of mind, such mind applies to all things. For example, one could be a “panpsychist dualist,” holding that some Supreme Being has granted a soul or a mind to all things. One could be a “panpsychist functionalist,” interpreting the functional role of every object as mind, even if such a role is only to gravitate or to resist pressure. One could argue for a “panpsychist identism” in which mind is identical to matter, or a “panpsychist reductive materialism” in which the mind of each thing is reducible to its physical states. In fact panpsychism can parallel almost every current theory of mind. Nearly every concept of mind can be extended to apply to all things, whether living or nonliving. The only theories not applicable are those that deny mind altogether and those that argue explicitly that, because of some unique physiology, only biological organisms, or only *Homo sapiens*, can possess mind.

Such theories, though, are rare and unconvincing. In order to qualify as a complete theory, a panpsychist outlook must be complemented by a positive theory of mind that explicitly describes how mind is to be conceived and how it is connected to physical objects. Some philosophers have expressed an intuitive belief that all things have minds, or that all are animate, but then neglected to specify in detail a conception of mind that fits within this broad framework. (Not that intuitions are unimportant; in fact, one objective of this book is to show that intuitions are important and that even if expressed vaguely they can serve as useful pointers to those seeking a more complete account of mind.) This neglect is unfortunate, as it often leads to unjustified criticism of the meta-theory of panpsychism itself.

Second, panpsychism has played a unique part in the history of philosophy. To begin with, it is almost certainly the most ancient conception of the psyche. In the forms of animism and polytheism, it was probably the dominant view for most if not all of the pre-historical era. Eastern cultures have a nearly continuous record of panpsychist writings, right through the modern era. It was also widely accepted, though not often explicitly argued for, in the early years of Western thought. Aristotelian philosophy and Christian theology emerged and subverted it for a number of centuries, but it made a comeback with the naturalist philosophers of the sixteenth century. Panpsychism was then still a minority view, but support for it grew steadily in the seventeenth and eighteenth centuries, reaching a zenith in the late 1800s and the early 1900s. With the advent of logical positivism and analytic philosophy, panpsychism was once again driven down, along with most metaphysical theories, to a relatively low standing. In the past few years there has been a resurgence of sorts, and in certain circles panpsychism has once more become a topic of serious philosophical inquiry. The present work intends to add some impetus to that resurgence.



For most of humanity, for most of history, panpsychism has been an accepted and respected view of the world. Thus, it would seem to reflect, if nothing else, a universal human impulse. An appreciation of this may serve to mitigate criticisms by certain contemporary thinkers who find panpsychism outrageous or absurd, as if to imply that no reasonable person could hold such a view. More to the point, it is a matter of fact that many of the greatest Western thinkers advocated some form of panpsychism, as the present work will clearly demonstrate. For this reason alone it is deserving of serious consideration.

Hence, both an investigation of panpsychism's historical background and a comparative study of panpsychism are important for present-day philosophical discussion. Among the central reasons for this importance are the following:

Panpsychism occupies a unique position in philosophy. As mentioned, it is at once an ontology and a meta-theory of mind. It intimately links being and mind in a way no other system does.

Panpsychism is philosophically valuable because it offers resolutions to mind-body problems that dualism and materialism find intractable. Present philosophy of mind is dominated by materialist theories that cannot adequately address issues of consciousness, qualia, or the role of mind in the universe. Dualism is the traditional alternative, but it too suffers from long-standing weaknesses and unanswered questions. Panpsychism offers a third way.

Panpsychism has important ethical consequences. It argues that the human mind is not an anomaly in the universe, but that the human and the non-human share an important quality: that of being enminded. By virtue of this shared quality, we may come to know the universe more intimately and find ourselves at home in it. This in turn can serve as a source for more compassionate and ecological values, and therefore new ways of acting in the world.

Panpsychism brings into sharp relief the nature of mechanistic philosophy. Present thinking and present social structures are largely rooted in a mechanistic view of the universe that was inherited from Hobbes, Descartes, and Newton: the view of the universe as a place of dead, insensate matter driven by mechanical forces. Human mind is an unexplainable mystery, a "great exception" in the cosmic scheme. Throughout history, panpsychism has, at almost every point, served as an antipode to this mechanistic theory of mind and reality. Usually in opposition, occasionally in agreement, panpsychism marks important developments in the modern worldview.

Panpsychism is perhaps the most underanalyzed philosophical position in Western philosophy, and it is long overdue for a detailed treatment. The last systematic study was performed more than 100 years ago, just as materialist philosophy was coming to the fore. Some recent works have addressed the topic, but always to a limited degree and from a particular philosophical perspective (such as process philosophy). An objective and thorough treatment has been lacking, which is a grievous oversight in view of the major role panpsychism has played in Western philosophy. Just as a point of reference: Since 1500 CE, nearly three dozen major philosophers have

advocated variations of panpsychism. These, as well as many others, are addressed in the present work.

The remainder of this chapter will explore some general issues surrounding philosophy of mind and how they relate to the relevant ontological and psychological concepts. Subsequent chapters will address the specific writings of various thinkers in detail, establishing that they held panpsychist views and indicating something of their rationale. The final chapter will summarize the arguments for panpsychism, compare these with opposing arguments, and attempt to place the panpsychist movement in a larger perspective.

1.2 Basic Concepts in Ontology and Mind

The world appears to be made of many things. Yet we know from observation that nature often displays the ability to create “variations on a theme.” Thus, it is reasonable to inquire whether the apparent diversity of things around us reflects an underlying theme, or themes, that are fewer, simpler, more universal, and more fundamental. Once this approach is accepted, the obvious questions are the following: How many such themes are suggested to exist? What is the nature of the underlying themes? How do they relate to each other and to the apparent diversity of the ordinary world? Such an inquiry is often regarded as a primary aim of metaphysics (more specifically, ontology).

Since the time of the ancient Greeks, “How many?” has been a fundamental ontological question. Philosophers, for the most part, have sought theories in which the plurality of things is reducible to variations on one or a few fundamental themes, principles, or entities (the Greek word was *arche*). Often an early Greek *arche* was a “substance” (or substances) of some kind, so a frequently asked question was “How many substances constitute the whole of reality?” The answers to this question typically fall into two general groups: those proposing one fundamental substance (monism) and those proposing two or more substances (pluralism).

Monist theories date from the earliest days of philosophy, when Thales held the view that everything (presumably including mind and soul) was a form of water. The Eleatic philosophers Anaximenes and Anaximander were monists, as were Parmenides and Heraclitus. After the time of the early Greeks, monist ontology became quite rare (with perhaps the exception of certain versions of Neo-Platonism). For several centuries after the rise of Christianity, the soul was regarded as real and as distinct from the body, and dualist and pluralist philosophies dominated. Not until the Renaissance,

when Girolamo Cardano, Giordano Bruno, and Benedictus Spinoza articulated their systems, did the monist view again become prominent. In the 1700s, the theories of dynamism and energeticism began to establish a scientific basis for monism, paving the way for the “mass/energy monism” that came to dominate the Western worldview, particularly in the past 100 years.

Pluralist cosmologies began with Anaxagoras’ view of the world as made up of myriad substances, “infinite in number.” Empedocles, another early pluralist, conceived of all things as composed of four elements (fire, air, water, and earth) working in conjunction with two overarching forces: *Philotes* (Love) and *Neikos* (Strife or Hate). In the Middle Ages, Paracelsus argued that all things were composed of mercury, sulfur, and salt. Later, Leibniz and James advocated pluralistic views of the universe.

More commonly, though, philosophers opposed to monism conceived of simpler pluralist schemes, with only two fundamental substances or entities. Such metaphysical or ontological dualism began with Plato, for whom the true reality was the realm of the Forms and the secondary reality was the ordinary “realm of phenomena” (the realm of things as they appear to us). The Christian worldview divided reality between earthly and heavenly realms, the former the domain of the body and the latter of the soul or mind. This division was reinforced by Descartes’ distinction between the *res extensa* (matter) and the *res cogitans* (mind). It was further supported by theories, advocated by Newton and others, that the universe was a law-driven, mechanistic system; according to these theories, mind or soul was undeniable and yet clearly not material and thus was a separate (second) aspect of reality. The theory of evolution and the secularism of the twentieth century tended to undermine this duality, driving many contemporary thinkers to a materialist monism according to which mind is a reducible or derivative entity. Yet the absence of a convincing theory of monism, combined in many cases with religious beliefs and/or intuitive feelings, has kept the concept of ontological dualism alive.

The contrast between monism and dualism, important to a proper understanding of the phenomenon of panpsychism, will be addressed in further detail in the following two sections.



Another basic question is that of the historical nature of mind: Over the course of universal evolution, how and when did mind come to be? It seems clear that either mind in the most general sense has always been present in

the universe or else it came into being (suddenly or gradually). The first view is panpsychism; the second is emergentism.²

Nearly all present-day philosophers of mind are emergentists, who assume that mind emerged at some point in evolution. Usually, however, they do not address the question of how such emergence is conceivable, and they do not acknowledge that *one need not assume this*.

Yet the question of emergentism is central to any adequate theory of mind. Every theory should explicitly acknowledge its standpoint on this question. If it is an emergentist theory, it should detail how and under what conditions mind has emerged; if it is not emergentist, it should explicitly accept the panpsychist extension. Some theories of mind—for example, Searle's requirement that mind be limited to biological organisms—incorporate emergence in the larger theory (at least implicitly), but such approaches have yet to win much acceptance. Most commonly one finds a mushy middle ground in which philosophers fail to clearly articulate their views one way or the other. They seem to know that a clear and comprehensible theory of emergence is extremely problematic, but they cannot bring themselves to adopt the only viable alternative.

The above does not imply that panpsychism is somehow fundamentally anti-emergentist. Panpsychism can, and in fact nearly always does, admit the existence of a vast range of mental complexities or "degrees of animation," each new level of complexity explicitly emerging under some condition. Mind is often correlated to structural or evolved complexity; as new physical forms of being emerge, so do new forms of mind. Clearly, for example, *Homo sapiens* came into being over some period in history; 10 million years ago there were none of these creatures, and 10,000 years ago there were many. Thus, the peculiarly human form of mind undoubtedly emerged. Yet mind as a general phenomenon may have always existed.

Compare mind and another fundamental entity: gravity. Gravity is "everywhere," and it has always existed (at least, under most interpretations). Yet new gravitational fields emerge every time there is a new configuration of matter. The gravitational field of the Earth is a function of the planet's total mass and its distribution. Clearly a cubic Earth would produce a different gravitational field than a spherical one. Furthermore, technically speaking, even the present actual field of the Earth is continuously changing as the molten core circulates, continental plates shift, and human activity moves matter around. Thus, one could reasonably claim that the Earth's field, even now, is continuously emerging, continuously becoming in a sense new, while staying within certain rough bounds.

There are different forms of emergence, just as there are different forms of panpsychism; the two concepts are not mutually exclusive.

1.3 Background on Monism

Monist theories posit that all of reality is in essence either a single entity or a single kind of entity. With standard concepts of mind and matter, there are at least three versions of monism: theories in which only matter (i.e. mass/energy) ultimately exists, theories in which only mind ultimately exists, and theories in which some third type of substance—neither mind nor matter—exists. A quick elaboration of these views is in order.

First let us consider materialist (more properly, metaphysical) monism. Within the sub-discipline of philosophy of mind this is often called *physicalism*; in the context of panpsychism the two terms are typically treated as synonymous. Materialism is the standard, default view of the scientific community. In its mechanistic form it sees the universe as composed of lifeless, inert matter that organizes itself into the complex objects of our world and somehow gives rise to mind and consciousness. Mind, to the extent that it is taken as real, is viewed as a function of underlying matter and energy.

There are many variations of materialist or physicalist theories in the current philosophical literature. Three such general classes are worth mentioning in the context of the present discussion: the identity theory, functionalism, and eliminativism.

Adherents of the identity theory claim that mental states are real but that these states are identical with brain states. Someone's mind, experiencing a red sensory impression, is in the "red mental state" because his brain, physically, is in the "red physical brain state." There is thus a one-to-one correspondence between the physical states of a brain and the mental states experienced; they are one and the same, only appearing to us as different. Mental states are not anything in themselves and do not have a unique ontological standing. Spinoza may be said to have originated this approach, but it was not fully articulated until the middle of the twentieth century. J. J. C. Smart (1959) is perhaps the best-known identity theorist; other advocates include Herbert Feigl (1958), David Lewis (1966), and D. M. Armstrong (1968). At issue for the identity theory is the underlying nature of the identity. If it is claimed that mind is identical with brain (state), then this implies that mind coexists with certain physical processes, namely those occurring in the neural network that makes up the human brain. Typically

unaddressed are the issues of “animal mind,” “plant mind,” or mind in general. A proper identity theory should describe what exact physical processes are “identical with mind” and why. Spinoza viewed all things as being identical with mind, and he was thus both an identity theorist and a panpsychist. Feigl likewise drifted close to panpsychism. Bernhard Rensch (1971) identified his position as “panpsychist identism.” More commonly, identity theorists seem to not address the larger issue.

A second class of materialist monism, in a similar vein as the identity theory, is functionalism, which argues that mental states are real and that they are identical with a particular “process state,” or state of information. The process state is determined entirely by the causal role played by the system. Anything that instantiates the appropriate information state (e.g. a computer) will, *eo ipso*, adopt the corresponding mental state. In other words, the mental property can be thought of as a second-order effect, the functional role of the physical system being primary. Thus, functionalism can be seen as a kind of generalization of the identity theory: not just a brain, not just a nervous system, but any physical system is capable of giving rise to a mental state. Recent advances in computer science and artificial intelligence have bolstered the case for functionalism, especially with such high-profile examples as the defeat of the chess champion Garry Kasparov by the computer program Deep Blue. Certain identity theorists, including D. M. Armstrong and Hilary Putnam, are sometimes viewed as functionalists, and William Lycan and Daniel Dennett (in his early writings) have put forth functionalist theories. And again, functionalism can be seen to shade into panpsychism; even if it is allowed that only certain complex functional states can instantiate, say, human consciousness, this is not to say that less complex systems cannot instantiate lower orders of mind.

Eliminativism—the view that mind is somehow imaginary or unreal—is a truly radical materialism and a logical extension of behaviorism. Eliminativist philosophers point to advances in science that seem to explain everything about the world in physical terms, avoiding any need for reference to consciousness, sentience, or experience. They see this as a further step in filtering out unnecessary and confusing ideas about reality, a process that began with the elimination of the pantheon of Greek and Roman gods, continued through the elimination of the Christian God in the time of Laplace and Nietzsche, and continues still. W. V. O. Quine and Paul and Patricia Churchland are typically, though not uncontroversially, associated with this view.

As one may suspect, there are certain philosophical weaknesses associated with the principle of materialist monism. Consider two of these. First, it can

be argued that the present system of physical monism, or physicalism, is not very monistic. Even though physicists view matter as “one type of thing,” they have been unable to create a unified theory of matter. On the standard view, mass/energy consists of mass particles (leptons and quarks), which come in a total of 12 variations, and of four distinct force particles (photons, gravitons, gluons, and intermediate vector bosons). As of yet there is no unified theory. Furthermore, subatomic particles behave in very peculiar and non-mechanistic ways, which differ radically from the behavior of objects in the everyday world. Such a system, some would say, can hardly be called monist. A second weakness, already mentioned, is the problem of accounting for the presence of the human mind. All theories other than eliminativism must explain why humans alone (or “all mammals,” or humans and “higher animals,” etc.) possess mind and how mind came to emerge over the course of evolution. Presumably, materialists hold that there is something ontologically unique about the brain of *Homo sapiens*, or the brains of other sufficiently evolved organisms, that permits the presence of mind and consciousness. What precisely this is has not yet been answered to anyone’s satisfaction.

A second kind of monism comprises those theories in which mind is the ultimate reality. This is the position known as *metaphysical idealism* (or, more simply, *idealism*). Matter, to the extent that it is viewed as real, is seen as a feature or an aspect of mind. Following this definition, we can observe that Parmenides was perhaps the first idealist; he identified Being as the ultimate reality, and he equated it with mind.³ Anaxagoras also held a position close to idealism. Even though there were an infinity of substances, they were all brought into being and articulated by the power of mind: “. . . whatever things were to be, and whatever things were, as many as are now, and whatever things shall be, all these mind arranged in order” (Smith 1934: 34). Plato’s system, in which the Forms or Ideas are the ultimate reality, can also be seen as a variant of idealism.

Of the more modern forms of idealism, we generally distinguish four: metaphysical or ontological idealism, transcendental idealism, absolute idealism, and personal or pluralistic idealism. Metaphysical idealism is a claim about the true nature of things. Bishop Berkeley, a renowned metaphysical idealist, held the view that *esse est percipi* (to be is to be perceived). For Berkeley, only minds and ideas exist; physical objects are really just collections of sensory impressions. Transcendental idealism was formulated by Immanuel Kant as he sought to transcend empiricism. Kant’s is more of a rationalist and epistemological claim: that all knowledge of reality is

mental or phenomenal. Furthermore, Kant believed that the mind plays an active role in shaping the objects of knowledge, thus injecting something of the character of our mind into everything we perceive. Absolute idealism argues for the existence of a universal or absolute mind, something like a world-soul, that “realizes itself” in all things, including ourselves. Such a worldview was developed by Fichte, Schelling, Bradley, and Royce, among others. Finally, the so-called personal idealism of Howison and McTaggart rejected the idea of a single overarching Mind but retained the notion that all things were realizations of mind. In their view, each thing is the self-realization of its *own, individual* mind.

There is perhaps less distinction between these forms than may appear. Absolute and personal idealism are as much ontological theories as Berkeley’s view. Berkeley’s God perceives all, just as the Absolute Mind does—though the absolute is realized in all things in a way that God, perhaps, is not. And the individual minds of personal idealism would seem to be linked by some common, unifying spiritual realm, which may take on characteristics of an “absolute.” Of the four, only personal idealism implies a form of panpsychism. Conversely, it should be clear that there are many variations of panpsychism that do not presume any of the above systems of idealism.

To elaborate briefly on the last point: Panpsychism is sometimes described as a version of idealism, but such is not necessarily the case. Idealism posits mind as the essential reality of all things; panpsychism argues, roughly, that all things “have minds.” The former is from an external perspective, the latter from an internal one. One can be an idealist without being a panpsychist (consider Berkeley, Kant, and Hegel). As a matter of fact, most panpsychists in history were *not* idealists in the sense of “mind as the ultimate reality.” Certainly there were idealist philosophers who were also panpsychists (Schopenhauer, Royce, Bradley, Sprigge), but their idealism was supplemental to, not entailed by, their panpsychism. Thus, the identification of panpsychism with idealism is inappropriate and unjustified.

Neutral monism posits a neutral third entity, neither mind nor matter, as the ultimate reality. Mind and matter are then two aspects of, or two reducible features of, this more fundamental substance. The formal concept of neutral monism is generally regarded as having originated in the late 1800s with Ernst Mach, who held that “sensations” were the basis of all reality—a view that is also a form of panpsychism.

Neutral monism goes back in spirit to the Greeks. Parmenides (by way of a non-idealist interpretation) and his notion of being can be described as

such. Anaximander, whose *arche* was “the infinite,” was a neutral monist. In the Renaissance, Spinoza articulated a philosophy in which God was identified with all of Nature. For Spinoza, mind and matter were only two of the infinitely many attributes of God. Hume is usually considered a neutral monist. In modern times, Whitehead and Russell were famous neutral monists; William James held a related view,⁴ seeing “pure experience” as fundamental (another panpsychist variant). More recently, the physicist-philosopher David Bohm has argued that the “implicate order” is the underlying basis for mind and matter.

To the degree that neutral monism conceives of a common ground to both mind and matter, it strongly tends toward panpsychism; of the individuals just mentioned, all but Hume are arguably panpsychists. To avoid panpsychism, the neutral ground of reality would have to distinguish between animated forms of matter and inanimate ones. This would require a complex metaphysical system, something difficult to achieve in purely naturalistic terms.

1.4 Dualism and Interaction

As has been noted, modern pluralist theories have been almost exclusively dualist, offering up two fundamental entities—usually, mind and matter—which are taken as two independently existing aspects of reality and which, as such, may stand in varying degrees of relation to each other. The type of relation and the level of interaction determine the nature of the various dualist theories.

A basic distinction between “natural” and “supernatural” dualism is commonly made. Supernatural dualism includes the traditional religious view that there exists an otherworldly realm of God, angels, and spirits, a realm not affected by such natural physical processes as evolution and entropy. It originated in the religious (primarily Christian) worldview that dominated much of Western civilization from roughly 500 to 1700 CE. The corresponding dualist theories of mind and soul are typically theological theories and tend to focus on the immortality and redemption of the soul. For the most part, the present work will bypass such theological approaches.

Of late, though, there has been something of a resurgence in so-called naturalistic dualism, which holds that mind is an integral and evolved aspect of reality yet is beyond the empirical physical realm we see around us. Naturalistic dualism sees mind as a real but non-physical entity that interacts with the physical body. This non-physical mind is not a supernatural entity and belongs to no conventional religious hierarchy. It is a

natural, rational, law-based aspect of reality, yet it cannot be found within the domain of the physical universe.

There is ongoing debate over the meaning of 'naturalism'. Some see naturalism as continuous with the process of science, as effectively advocating a materialist view. Others see it as ontologically neutral with respect to materialism. It can be difficult to make the argument that something not a part of physical nature should be called "natural" at all. Some philosophers who struggle with the limitations of materialist monism yet want to avoid supernatural dualism are finding a way out of this dilemma in naturalistic dualism.



Any philosopher who holds that mind and matter are in some sense real and distinct must account for the relationship between the two. This is the problem of mind-matter interaction. Taking the word 'body' in the general sense (as a physical body or material object, not just the human body), there are logically four possible modes of interaction:

- (1) Mind affects body, and body affects mind.
- (2) Body affects mind, but mind does not affect body.
- (3) Mind affects body, but body does not affect mind.
- (4) There is no interaction.

These will be discussed in order below.

First: Descartes elaborated the view that mind and matter, though completely independent substances, must somehow interact. It was clear to him that mind could affect matter, and likewise matter could affect mind; this, of course, is the common intuitive feeling. For Descartes, the point of interaction was the pineal gland of the brain, a small organ that was presumed uniquely capable of acting as the point of bi-directional interaction. Though the pineal-gland theory has been proved decidedly false, the general contention that mind and body are somehow capable of interacting has persisted—if only in the naive intuitive argument that "mind clearly exists," "(human) body clearly exists," and "I know that my mind affects my body and vice versa." Unfortunately, in the 400 years since Descartes no one has produced a satisfactory explanation as to exactly how this would work. Basic physical laws, such as the conservation of mass/energy and the requirements of thermodynamics, seem to prohibit any possible interaction outside of the physical universe. Interactionist dualism is, therefore, currently held more as a matter of faith than of philosophical reasoning.

Second: A number of philosophers have concluded that mind somehow “results from” or “arises from” the physical action of the brain and body, but that, not being a physical entity, it has no causal power in the material world. This is *epiphenomenalism*. Mind, on this view, is somewhat like a shadow cast upon a wall—the shadow takes the form and character of the object casting it.⁵ Philosophers can be led to this conclusion when they attempt to reconcile the views that (a) the physical world is causally closed (as most all physicists believe) and (b) mind is something real. Mind thus becomes a secondary and subordinate phenomenon, caused by the brain but having no causal power back on it. Epiphenomenalism is a common theory of mind at present, though few seem satisfied with it.

Third: Logically there exists the converse of epiphenomenalism—the idealist position that mind is the fundamental substance of reality, and that what appears to us as body or as matter is a secondary or illusory phenomenon without real causal effect on the underlying mind. Plato’s ontology can perhaps be placed in this category. His allegory of the cave argued that what we take as physical reality is only the shadow of the true Forms that constitute essential Reality. Phenomenal reality—the realm of the senses—exists through a particular kind of interaction with the Forms that Plato called “participation”; he wrote that everyday reality participates in the various Forms and “is modeled on them.” How this occurs is not entirely clear. Further, the Forms, though eternal, are not static and fixed but have the capability for change and motion (*Sophist*, 248–249). The process of participation would imply a change of some kind in the Form, but whether this constitutes causality in the ideal realm is not clear. Apart from (perhaps) Plato, few have argued for such a “converse epiphenomenalist” view.

Fourth: There is the dualist view that both mind and matter exist but never interact. This counter-intuitive position (sometimes called parallelism) is attributable primarily to Gottfried Leibniz, although was also held by Nicolas Malebranche. Leibniz formulated the concept of “pre-established harmony”: In the beginning of the universe, God created the “monads” (atom-like particles that were the basis of reality), which possessed both mental and physical characteristics. The physical and the mental were then set off on parallel but non-interacting paths for all eternity. Like two perfectly synchronized clocks, each monad’s mental side keeps perfect alignment with its physical side. This, Leibniz believed, accounted for the apparent connection between the body and the soul.

Spinoza also held a view that some call parallelism. On this view, each real thing, as a mode of God/Nature, has both physical and mental attributes. These two attributes are perfectly aligned for any given object, and as

the physical mode undergoes change so too does the mental mode. “The order and connection of ideas [mental modes] is the same as the order and connection of things [physical modes].” (*Ethics*, II, proposition 7) However, Spinoza also says that “ideas” and “things” are “one and the same,” as they are really only *one thing* in God/Nature. To this extent, the two paths of idea/mind and body/matter are merely appearances, not real. Thus, there is no real parallelism, only (as with Leibniz) an apparent one.

All four forms of interaction are problematic. Epiphenomenalism is the most widely held today, only because all other options are utterly untenable. Historical philosophers seem to have had less of a concern with this issue, but they nonetheless failed to develop any widely accepted theory of such interaction. If nothing else, such a situation would seem to suggest the need to reconceive the nature of mind-matter causality.

1.5 Panpsychism Defined

Philosophical arguments often turn on interpretations of definitions. This is particularly so with issues of mind and consciousness. In addition to the obvious lack of agreement on the basic definition of ‘panpsychism’, there is the added complication that the words used in the definitions—‘sentience,’ ‘consciousness,’ ‘soul,’ etc.—are ambiguous. To add to the confusion, the definitions of these sub-terms often use other, equally ill-defined terms. A review of the literature finds a mass of self-referential definitions, which ultimately rely on some ground-level understanding of our common-sense notions of these terms. This is to some extent unavoidable, but it does not preclude attempting a somewhat more rigorous use of terminology.

To minimize this concern, it is necessary to explain some of the various terms associated with panpsychism. First, however, it is necessary to attempt to define ‘panpsychism’ itself. The philosophical literature cites a number of definitions. The formal definition, if one can speak of such a thing, presumably is that in the authoritative *Routledge Encyclopedia of Philosophy*:

Physical nature is composed of individuals, each of which is to some degree sentient. . . . [They may be said to have] sentience, experience, or, in a broad sense, consciousness. (Sprigge 1998a: 195)

However, one rarely finds the same definition twice. Here are some other definitions:

All objects in the universe . . . have an “inner” or “psychological” being. (Edwards 1967: 22)

Everything has a soul, or . . . a rudiment of a soul. (Popper and Eccles 1977: 15)

Mind is a fundamental feature of the world which exists throughout the universe. (Seager 2001)

There are some inconsistent and potentially contradictory definitions. Chalmers (1996) defines it in one place as “everything is conscious” (216) and elsewhere as “everything has a mind” (298), apparently regarding the two as equivalent. Such wide variability often serves to obfuscate rather than clarify. Clearly any definition turns on (ambiguous) sub-definitions, employing terms such as ‘sentience’, ‘consciousness’, and ‘experience’. In spite of these confusions, we may perhaps agree that the general meaning is understood, and may be captured—at the highest level—as “all things have a mind, or a mind-like quality.”

Ideally we should be able to step forward in the formulation of a more articulated definition, approaching something that we may begin to call a consensus view. Panpsychism as a concept, it may be proposed, has three essential characteristics: (1) Objects have experiences *for themselves*; that is, the mind-like quality is something internal to or inherent in the object. (2) There is a sense in which this experience is *singular*; to the extent that a structure of matter and energy that we call an object is one thing, this oneness is reflected in a kind of unitary mental experience. (3) An object is a particular configuration of mass/energy, and therefore any configuration or system of mass/energy should qualify in the same sense.⁶ Thus, a functional definition of panpsychism might be “All objects, or systems of objects, possess a singular inner experience of the world around them.” Such a definition is useful while avoiding some of the more contentious (and ambiguous) words that one finds in other definitions.

There are many words that relate to noetic qualities and abilities, and a brief survey of the literature will unearth an array of such terms: ‘mind’ (or ‘mentality’, or ‘mental states’), ‘consciousness’, ‘self-consciousness’, ‘thought’ (or ‘thinking’, or ‘cognition’), ‘intelligence’, ‘feelings’, ‘experience’, ‘inner life’, ‘what-it-is-like-to-be-something’, ‘qualitative feel’ (or ‘qualia’), ‘will’, ‘phenomenal feel’, ‘awareness’, ‘perception’, ‘sense’, ‘sentience’, ‘subjectivity’. All these terms obviously evolved in a human context, and the meanings of all are rooted in our collective human experiences. This makes any textual definition problematic. With respect to a definition of panpsychism, certain terms seem particularly troublesome, especially ‘consciousness’, ‘soul’, and ‘thought’.

‘Consciousness’ is highly anthropocentric, and its meaning is too closely associated with specifically human mental states to serve as a general attrib-

ute of reality. 'Consciousness' means, to most people, the aware and alert mental states that human beings normally experience in their waking hours. This meaning is firmly entrenched, even for philosophers, and to fight it is an unnecessary uphill battle. This is not, of course, to suggest that consciousness is an invalid topic of philosophical discussion. One may still accept that consciousness is a real and meaningful concept, and that it poses substantial philosophical problems related to the nature of knowledge, introspection, and phenomenal experience. One may ascribe it, not unreasonably, to animals, even (perhaps) the "lower" ones. It would be more contentious to refer to plants as conscious, even more to systems of organisms (e.g. a forest or the Earth). Very few would allow the term for inanimate objects, and any attempt to do so likely poses insurmountable conceptual barriers.

Panpsychists are highly sensitive to the use of 'consciousness', and for good reason. Upon laying out a panpsychist position, one is immediately faced with the charge that he believes that "rocks are conscious"—a statement taken as so obviously ludicrous that panpsychism can be dismissed out of hand. Even when philosophers apply it to plants or inanimate objects, they do so primarily as extrapolations from our own internal feelings. We may see strong analogies with the human mind in certain animals, and so we apply the concept to them with varying degrees of confidence. We may see no such analogies to plants or inanimate objects, and so to attribute consciousness to them seems ridiculous. This is our human bias. To overcome this anthropocentric perspective, the panpsychist asks us to see the "mentality" of other objects not in terms of *human* consciousness but as a subset of a certain *universal quality* of physical things, in which both inanimate mentality and human consciousness are taken as particular manifestations. But this can be achieved without needlessly anthropocentric terminology.

Soul, in addition to being anthropocentric, is a supernaturally and theologically loaded concept that rarely occurs in contemporary philosophical literature. We find the term 'soul' in certain translations of the ancient Greeks, but this particular reading of 'psyche' is less relevant than the more general 'mind'. ('Spirit' is somewhat preferable to 'soul', although it still has an air of supernaturalism). Soul is perhaps best left to theologians, or to philosophers speaking poetically.

References to the concept of thought (or thinking), or to its close relative cognition, typically involve purposeful planning, considering of alternatives, and holding of beliefs; most would attribute these qualities only to animals, in various degrees. 'Cognition' refers to an especially deep and

insightful thinking, a reasoning power through the use of inference or deduction—primarily the rational thought process of humans. There is perhaps a very loose sense in which “to think” could mean *to process information*, wherein we might attribute this quality to all objects, but this adds little to the discussion. Thus, along with ‘consciousness’ and ‘soul’, it is best to avoid such terms when speaking of properties of mind in general.

The central point here is that discussions of the meaning of panpsychism should avoid the most heavily anthropocentric terms, which cloud the discussion more often than they provide clarity. And the use of such loaded terms is in any event unnecessary, as is demonstrated in the working definition above. Certain terms seem to be most general and least biased; these might include ‘mind’, ‘mentality’, ‘experience’, and even ‘qualia’.⁷ Even ‘psyche’, left untranslated, may be suitable as a universal noetic quality. Hence, these concepts are perhaps more appropriately used in connection with panpsychist descriptions of reality.

A number of philosophers have recognized the definitional problem and made efforts to alleviate the situation. The best attempts to date at overcoming the general human bias are typically those that put a qualifier in front of the reference to mind: “proto-mentality,” “low-grade awareness,” “occasions of experience,” and so on. But even these ultimately refer back to our own sense of mentality or awareness and so are inherently limited in their ability to express a broader conception of mind.

It may be useful to propose a sort of panpsychist hierarchy of terminology, ranging from the most human-like to the most universal. This is by no means the commonly accepted order, and certainly every philosopher would construct a different arrangement,⁸ but it may serve as a framework for furthering the general discussion of panpsychism.

humans: self-consciousness, cognition

all animals: thought, consciousness

animals and plants: sense, awareness, sentience, emotion

all animate and inanimate: experience, mind, mental state, what-it-is-like, qualia, nous, psyche.

Of course, there is considerable overlap at the boundaries of these four categories. The higher primates probably have all attributes of humans, including some level of self-consciousness and certain aspects of cognition. The more complex plants’ ability to “solve” problems of their environment (insufficient light, lack of water, difficulty in attracting pollinators, etc.) might reasonably be called a kind of thinking or intelligence. Inanimate objects are “sensitive” to physical changes in their surround-

ings. Details of the various panpsychist theories may also serve to support some such framework, and may help eliminate unnecessary and avoidable obfuscations.



Definitions of panpsychism are one source of confusion; synonyms are another. The philosophical literature contains a number of terms that are related to panpsychism. These terms, in no particular order, are ‘animism’, ‘hylozoism’, ‘panbiotism’, ‘pansensism’, ‘pantheism’, ‘panentheism’, and ‘panexperientialism’.

Animism (the term derives from the Latin ‘anima’, soul) is the belief that everything in the universe has a soul or a spirit, and in this sense it is superficially related to panpsychism. Typically connected to pre-Christian or tribal religions, animism has a strong air of superstition and mystery. It is most commonly used in a primitive, pre-scientific sense in which objects have “spirits”—e.g., the “spirit of the tree” inhabiting an oak or the “water-spirit” inhabiting a lake. These spirits typically have a human-like nature or personality that exhibit all the properties of a rational person, perhaps including intelligence, belief, memory, and agency. Furthermore, such spirits usually are not bound to the physical realm; they are immaterial and supernatural beings. This dualistic and highly anthropocentric nature characterizes animism and distinguishes it from philosophical panpsychism, which generally does not attribute high-level capabilities to non-human entities. Animism thus is taken as having little if any philosophical standing.

Hylozoism (from the Greek *hyle*, matter, and *zoe*, life) is the doctrine that all matter is intrinsically alive. (It is sometimes used, incorrectly, as a synonym of vitalism.) Under hylozoism, every object is claimed to have some degree or sense of life. Introduced as a philosophical term in the seventeenth century, ‘hylozoism’ has more recently been used in reference to the early Greek philosophers. Having this pedigree of philosophy, it is more highly regarded and discussed, though always in a historical sense. This term is not restricted to ancient Greece, however. Even into the late 1800s, the philosophers Ernst Haeckel and Friedrich Paulsen openly described themselves as hylozoists. Paulsen called hylozoism “a conception which almost irresistibly forces itself upon modern biology” (1892/1895: 100). This view continued into the early twentieth century as certain prominent scientist/philosophers—including Agar and Haldane—argued for a hylozoist worldview.⁹ Things had begun to change by the

middle of the twentieth century. In 1944, Tallmadge asserted that “to call a contemporary scientist hylozoist would be simply to utter an anachronism” (187). Yet in 1982 the physicist Bohm posited that “in a way, nature is alive . . . all the way to the depths” (39).

Of all the synonyms for ‘panpsychism’, ‘hylozoism’ is perhaps the one most commonly and closely associated with it. But ‘panpsychism’ is now the more viable term, largely because we have a better understanding of what constitutes life. Except for such borderline cases as viruses, we generally understand what it means to be alive, and it is clear that tables, rocks, stars, and atoms are not living things. (It is debatable, however, whether *systems* of living things, e.g. an ecosystem or the Earth, can be considered alive. This gets to the issue of whether, for example, the Earth qualifies as an organism in some sense.) As with the various concepts of mentality, the notion of life can become an unnecessary point of disagreement and confusion. It is perhaps best to take it in the ordinary scientific sense and apply it only to living organisms as commonly understood.

Panbiotism is essentially identical to hylozoism. It was apparently introduced by the philosopher Paul Carus, editor of the journal *The Monist*. Carus (1892) defined panbiotism as the view that “everything is fraught with life; it contains life; it has the ability to live.” He used it in the ancient Greek sense, defining life as exhibiting “spontaneity or self-motion.” Why Carus did not use ‘hylozoism’ is not clear. Regardless, that term is now rarely used, as is also true of the variation ‘panzoism’.

‘Pansensism’, meaning *everything senses*, is typically associated with the panpsychist views of Telesio, Campanella, and Mach. It is synonymous with the rarely used ‘hylopathism’. Pansensism is a concept, like panpsychism itself, that deserves to be discussed more widely. The word ‘sense’ generally takes on an anthropocentric meaning: a product of one of the five sense organs, or our human mental faculty. However, it can take on a wider definition: an awareness, a recognition, or a reaction to an external stimulus. All things react to external stimuli, of course, but the implication here is that there is a mental phenomenon of sorts associated with the object, and that something akin to a mental state or a subjective feeling is affected by external stimuli—and therefore that all things can be said to be sentient.

‘Pantheism’ means literally that all (*pan*) is God (*theos*)—that God is identical with everything that exists, i.e. the universe. What this means is not entirely clear, and precise definition is not easy. At a minimum it means that the Cosmos has a divine quality, that all material objects (including humans) are part of that divinity, and that the divine is a unity. It also typ-

ically implies that God is a non-personal being, that there is no Creator or Providence, and that there is no transcendent realm of the Divine.

The Greek Stoics were the first panpsychists. Diogenes Laertius recorded the observation “Zeno says that the entire cosmos and the heaven are the substance of god, and so does Chrysippus.” (*Lives of the Philosophers*, 7.147) Spinoza is the philosopher most typically associated with pantheism, as he equated God with Nature. But, like the Stoics, he was also a panpsychist, as he claimed that “all things are animate in various degrees.” Generally speaking, though, there is no logical connection between the two terms.

Panentheism is related to pantheism and is often confused with it. The etymological meaning is *pan-en-theos* (all in God, or more simply God is in all things). The term ‘panentheism’ seems to have originated in the writings of Karl Christian Friedrich Krause, ca. 1828. The common analogy is to a sponge: Just as water can saturate a sponge without being the sponge, so too God is said to saturate all things while being transcendent and unchanging. An alternative explanation is that God is the soul of the cosmos, a world-soul, and the physical universe is his body.

Panentheism can be confused with panpsychism. On the traditional view, God is omnipresent. If God represents spirit or mind, then all things can be said to contain mind—the mind of God. The central issue here is whether we speak of such mind as “mind of single universal being” (God, the Absolute, the World Soul, and so on) or of mind as attributable to each thing in itself (of each object’s possessing its own unique, individual mind). The former view would be a monist concept of mind, the latter a pluralist concept. The monist view is relatively close to a traditional theistic viewpoint, though perhaps not acknowledged as such, and thus has less bearing on the philosophical issues discussed here. The pluralist view is comparable to panpsychism. The only remaining issue is whether such universal, pluralist mind is a deity; if it is, panpsychism can be seen as a variation of panentheism.

Finally, we have panexperientialism, the doctrine that “everything experiences.” The term was coined by the process philosopher David Ray Griffin (1977: 98) to define a particular version of panpsychism deriving from Alfred North Whitehead and from Charles Hartshorne. Whitehead took events (in his terminology, ‘occasions’) to be the fundamental metaphysical reality, and this was linked to the concept of experience (undoubtedly influenced by James’ theory of “pure experience” as the basis of all reality). Panexperientialism is at present the most fully articulated form of panpsychism. Hartshorne, Griffin, De Quincey, and other process philosophers

may be credited with keeping alive the debate over panpsychism in general, and they have marshaled a large amount of evidence, both to support their position and to criticize the dominant materialist and dualist ontologies. For an early account, see Hartshorne 1937; for more recent articulations, see Hartshorne 1977, Griffin 1998, De Quincey 2002, and Clarke 2003.



With this background in place, we can now begin to examine in detail the evolution of panpsychist thought from the time of the pre-Socratics through the present.

2 Ancient Origins

Modern theories of panpsychism have their roots in the mythology and spiritualism of the pre-classical world. This aboriginal worldview permeated the thinking of nearly every major Greek philosopher. Even as they transformed the mythological, pre-historic animist worldview into rational and logical theories of the cosmos, the ancient Greeks retained fundamentally panpsychist notions of mind and soul. Residual panpsychist ideas even found their way, via Stoicism, into early Christian theology.

2.1 Ancient Greece and the “Hylozoist” Tradition—The Pre-Socratics

In the context of the present discussion, pre-Christian-era Greece may be divided into three periods: that of the pre-Socratics, that of Plato and Aristotle, and that of the Hellenists. These groups of thinkers had unique and increasingly sophisticated perspectives on panpsychism.

Pre-Socratic philosophy covered a range of roughly 200 years, from the emergence of Thales’ philosophy (circa 600 BCE) to the death of Socrates (399 BCE). There were a dozen or so major philosophers¹ from the Greek world in these two centuries, and we traditionally group them into these roughly chronological subdivisions.

Milesians: Thales (625–545 BCE), Anaximander (610–540 BCE), Anaximenes (585–525 BCE)

Mystic: Pythagoras (570–495 BCE)

Eleatics: Parmenides (545–460 BCE), Zeno of Elea (505–450 BCE), Heraclitus (505–450 BCE)

Pluralists: Anaxagoras (500–428 BCE), Empedocles (495–435 BCE)

Atomists: Leucippus (485–425 BCE), Democritus (460–370 BCE)²

Perhaps with the exception of Anaximander and Zeno, all these men advanced ideas relevant to an inquiry into panpsychism. All were, to some degree, panpsychists.

What must be examined, though, is precisely what quality these ancient Greeks attributed to the basic substances of the world. The term 'hylozoism' indicates that this quality is life (*zoe*), but it is not such a straightforward matter. In fact, to call them hylozoist is misleading; none of them actually used the word '*zoe*' to describe this mysterious quality of all matter.³ Thus, any reference to this notion of life or to the Greek conception of hylozoism must be qualified. As is elaborated below, the Greeks were more careful and precise in their attribution of a spiritual or mental quality to all matter, or to all substance.

The Milesians viewed the natural world as having three fundamental qualities: (1) as a *rational order*, governed by a *logos*, a system of coherence and comprehensibility, (2) as *evolutionary*, in the sense that things moved through the world and developed or changed over time, toward some kind of *telos*, or end, and (3) as *inherently animated*.⁴ The rationality of their philosophy was manifest as materialist monism—they each sought to reduce the plurality of things to a single underlying substance or entity. This single underlying substance had certain characteristics, foremost of which was its capability of producing the movement, life, and soul that were apparent in the everyday world. If everything is one, and if that one yields spontaneity and life, then a reasonable conclusion is that everything possesses these qualities to some degree. For the Milesians this was the most compelling and intuitive alternative. If one were to disagree, one would assume the burden of proof to show, at least, (a) why some things have life and other do not and (b) how such a phenomenon as life might plausibly emerge over the course of time. Apparently no one in ancient Greece argued for such a position. Hylozoism was simply accepted as a brute condition of reality. As Guthrie pointed out (1962–1981, volume 1: 145), “the union of matter and spirit in a material substance . . . is [for the Milesians] an assumption that raises no doubts and calls for no argument or defense.”

Consider Thales, who was widely known for his panpsychist views. That he is also regarded as the first true Western philosopher demonstrates something of the degree to which panpsychism was an integral part of the early Western worldview. Thales is best known for his theory of water as the cosmic *arche*, the fundamental principle underlying all material things. But there are two significant fragments on Thales, and they give some idea of his panpsychist leanings. Both fragments are found in Aristotle's *De anima*. First, we have the famous passage on the lodestone (magnet):

. . . Thales, according to what is related of him, seems to have regarded the soul as something endowed with the power of motion, if indeed he said that the lodestone has a soul because it moves iron. (405a19)

Here we have two distinct ideas: that the thing called 'soul' is defined as that which moves or produces motion, and that the lodestone itself has a soul because it can attract iron. In the original Greek, Aristotle (and presumably Thales) used the word 'psyche', commonly translated as soul. 'Psyche' has other meanings, though, including spirit, life, breath, and mind. The psyche was associated with the life energy of living things, with the divine animating spirit that produced motion in physical objects, and with the activity of the mind. At this early stage in philosophy there was not yet the distinction between "having a soul," "being alive," and "possessing a mind"; all these were treated more or less as equivalent.⁵ To the pre-Socratics, psyche was virtually as much mind-like as it was soul-like. In the first book of *De anima* Aristotle takes pains to note that most everyone before him, through and including Plato, did not clearly distinguish between soul and mind (nous). For example, we find the following passage on Democritus: "Soul and mind are, he says, one and the same thing." (405a10) And Anaxagoras only "seems to distinguish between soul and mind, but in practice he treats them as a single substance" (405a13). From this perspective we can propose a more complete definition of 'psyche': the energy that animates and produces movement in all things, including the movement of thoughts and ideas.

Humans and animals possessed psyche, and in a monist universe anything else that demonstrated the qualities of "aliveness" (e.g. self-moving, or causing motion) possessed it too. The lodestone clearly showed that it had the power to move other metal objects, something that must have been a rather miraculous event to the ancients. And yet the lodestone was obviously in many ways just a rock like any other. That some rocks exhibited greater powers of psyche than others was comparable to the notion that humans were just animals of a certain type that exhibited distinctive noetic powers. Apparently Thales concluded that all things possessed psyche, to a greater or lesser degree. We see this clearly in the second major fragment:

Certain thinkers say that soul is intermingled in the whole universe, and it is perhaps for that reason that Thales came to the opinion that all things are full of gods. (*De anima*, 411a7)

Aristotle (again presumably following Thales) used the word *theon*, which is translated as gods. The power of psyche was seen as a god-like, divine power, or perhaps as the power of the gods themselves. There are two possible explanations of Thales' choice of this word: (1) It may have been a throwback to the mythological and pantheistic tradition of Homer and Hesiod. (2) It may have been merely a linguistic convention; perhaps it

made more sense to him to say that “things are full of gods (*theon*)” than that “things are full of souls (*psychein*).”⁶ And even from the use of ‘psyche’ in Aristotle’s sentence (“soul is intermingled . . .”) one can see that “gods” and “souls” were seen as roughly equivalent, or at least intimately linked.

Furthermore, an essential quality of a god is that it is a single being, a unitary presence, with a singular sense of identity and personality. Contrasted with a relatively amorphous, diffused power like psyche, one may conclude that Thales believed that all things possessed a singular sense of identity, which was simultaneously of a mind-like nature.

The essence of Thales’ argument for panpsychism is this: Material objects (humans, animals, wind, sea, magnets, heavenly bodies) have the power of motion, either of themselves or with respect to surrounding things. The material objects we know most intimately—our own bodies—possess an energy, called ‘psyche’, that accounts for our power. Under the assumption that the world is rational and that humans are not ontologically unique, a reasonable conclusion is that all things possess some degree of motive power⁷ and hence some degree of the god-like psyche. This argument makes the case for panpsychism by appealing to powers of a particular kind that are inherent in material objects, then relies on analogy with human experience. This *Argument by Indwelling Powers* is the first of several arguments for panpsychism that we find throughout history.

Like Thales, Anaximenes argued for a monist worldview, but with an underlying principle of air (*pneuma*). The word ‘pneuma’ has an interesting array of meanings that are strikingly close to those of ‘psyche’: Besides air, it also can mean breath, soul, spirit, or mind. Whereas the primary meaning of ‘psyche’ is mind/soul, the primary meaning of ‘pneuma’ seems to be breath, as in “breath of life.” For Anaximenes, the breath of life was the living, animating principle of all things. This again was a logical conclusion. In every animal, breath equals life: no air, no life; no life, no breath. And air seems to be everywhere, as does motion, so it is not unreasonable to argue that *pneuma* is the underlying principle of the cosmos.

Anaximenes offered a different kind of argument for panpsychism than Thales. He saw in air a principle of continuity throughout all things. If this principle can be argued to account for our soul/mind, then a similar manifestation is likely present everywhere. Let us call this the *Argument by Continuity*. Panpsychism is a natural and logical position to hold in a monistic worldview; in fact, to be a monist and dispute the Continuity argument demands either an explanation of the unique emergence of mind (no small matter) or a denial of mind altogether. That the Continuity argument differs from the Indwelling Powers argument of Thales is clear: Thales makes

no connection between panpsychism and his *arche* of water, nor does water account for the existence of soul; Anaximenes fundamentally links his *arche* of air to mind/psyche. Both arguments, however, appeal to an analogy with basic human experiences of our own minds and selves.

Anaximenes also makes a kind of appeal to the concept of indwelling power. Air, in the form of soul, has a cohesive power in the world. It holds things together, animates them, and maintains their existence as discrete objects enduring over time. "As our soul . . . being air, holds us together and controls us, so does [breath] and air enclose the whole world." (Aetius I, 3, 4; in Kirk et al. 1983: 158–159)

The meaning of 'pneuma' evolved over the years. By the time of the Stoics, some 300 years later, it had taken on a precise philosophical meaning. It retained connotations of *animating principle of the cosmos* and *cohesive force*, but it was now seen as a specific combination of elements, and as having particular qualities and characteristics.

Chronologically, the next major philosopher after the Milesians was the enigmatic Pythagoras. No other philosopher had as much influence on Greek society in general. He lectured on mathematics, ethics, health, and metaphysics. Yet, like Socrates, he apparently wrote nothing. His closest followers formed a secretive cult, so we have few directs on him; most of what is known is indirect and anecdotal. Cicero (ca. 50 BCE) recounts that Pythagoras "held that mind was present and active throughout the whole universe, and that our minds were a part of it" (*On the Nature of the Gods*, I, 26–28). This "divine mind," or "pure spirit," was seen as "infused and imprisoned in the world" (ibid.). Other reports attribute to Pythagoras the view that everything is intelligent, but this is difficult to confirm with much certainty. It seems clear that he held to a mystic, pan-spiritual view of the universe, so it is likely that he held some variation of panpsychist philosophy.

Parmenides argued ingeniously that only Being is possible and therefore only Being exists. Furthermore, since change represents the coming into being of some thing or state that did not previously exist, and this is impossible (because "only Being exists"), change is impossible. Rather, what appears to be change is an illusion. This was a radical view; it contradicted the widely held belief that motion was a central characteristic of the world.

Also, since "thought" was acknowledged by Parmenides to be an undeniable aspect of reality, it followed that thought, or mind, must be an essential aspect of Being. The otherwise homogeneous and unchanging Being has this unique, positive property, which apparently is unlike any

other conceivable property of existence (since no others are held in the same standing as “thought”). Parmenides concludes, then, not only that Being “has” thought but that Being *is* thought. There are two central fragments that explicitly make this claim, and both are subject to an unusually wide range of interpretations and translations. The first is fragment 3, transliterated from the Greek as “*To gar auto noein estin te kai einai.*” Among many translations, one finds the following:

For it is the same thing to think and to be. (Freeman 1948: 42)

For thought and being are the same thing. (Smith 1934: 15)

What is . . . is identical with the thought that recognizes it. (Lloyd 1959: 327)

For thinking and being is the same. (Cleve 1969: 528)

For the same things can be thought of and can be. (Barnes 1987: 132)

At issue, clearly, is the meaning of the idea that “thought is identical with being.” This concept potentially has a double implication: that all thoughts constitute being and that all things that can be said to think. The latter meaning has an implicit panpsychist interpretation. Yet it is not clear that things in themselves are “thinking things,” if for no other reason than that in Parmenides’ worldview there are not really distinct individual objects but only a monistic one Being. If all things, as a whole, think, then such a view would constitute a kind of pan-noetic ontology—something like a pantheism, or world-soul, but without personality, just pure thought. This is arguably not panpsychism, which, as defined in chapter 1, requires things individually to possess mind. Parmenides’ intentions on this point are vague.

The second fragment continues the same line of thinking, though with equally ambiguous results: “*Tauton d’ esti noein te kai ounechen esti noema.*” (fragment 8, line 34) Here we find no direct mention of ‘being’ (*einai*) but instead a focus on *noein* (thinking) and *noema* (thought or consciousness). The identification is made between thinking and the object of thought:

To think is the same as the thought that It Is. (Freeman 1948: 44)

Therefore thinking, and that by reason of which thought exists, are one and the same thing. (Smith 1934: 16–17)

Thinking and the object of thought are the same. (Cleve 1969: 537)

The same thing are thinking and a thought that it is. (Barnes 1987: 135)

Cleve is sensitive to the panpsychist implications in these two fragments. He observes that Being, though technically unextended and incorporeal, is

yet permeated by thought: “. . . being itself . . . is *inextensive incorporeal thinking that is present whole and undivided in each and every part of seeming space*” (1969: 536). He adds that “the only being is consciousness, noema, that, however, must not be split into act of thinking and content of thinking” (ibid.: 537). Thus, it seems clear that thought permeates Being, that anything that exists must also be said to be identical with thought. Since the metaphysical status of distinct things is not clear, we cannot determine the degree to which Parmenides’ view is true panpsychism. Yet, in view of the “hylozoist” milieu into which he was born, one certainly cannot rule out a panpsychist interpretation.

Parmenides’ notion that thought is identical to being anticipates the discussion in *Sophist* in which Plato puts forth a similar view: that (the Form of) Being possesses the qualities of “life, mind, and soul.” Plato, as we know, held Parmenides in high regard, and thus it is not surprising to find elements of his ontology.

In opposition to Parmenides’ static world of pure Being, Heraclitus conceived a worldview in which change and motion were the essential reality. In a fitting manner, fire became his *arche*. To the ancient Greeks fire was a form of pure energy, and it is interesting that Heraclitus developed an energeticist worldview 2,300 years before it became the fashion in physics.

Fire, like the *pneuma* of Anaximenes, was associated with life-energy. Significantly, Heraclitus referred to this fire not merely as *pyr* but as *pyr aeizoon*—ever-living fire. Consequently, this spiritual life-energy was seen as responsible for creating and sustaining everything. Diogenes Laertius reported in his *Lives of the Philosophers* (ca. third century CE) that Heraclitus held to the view that “all things are full of souls and spirits” (IX: 5–12). Again, ensoulment is universal and equated with motion and change.

More specifically, the *pyr aeizoon* possessed a kind of intelligence or cognitive ability. In the only directly relevant fragment, Heraclitus says that thinking is “common to all” (fragment 113; Barnes 1987: 109). Heraclitus evidently followed the logic of his predecessors in believing that in a monist cosmos intelligent spirit or life must exist in all things. Here we have a combination of the Indwelling Powers argument (in the energy of the *pyr aeizoon*) and the Continuity argument (*pyr* in all things).

Heraclitus and Parmenides lived at about the same time, and their two opposing philosophies must have created something of a crisis in Greek intellectual circles. Each seemed plausible, yet they were profoundly incompatible. “The mediators,” Empedocles and Anaxagoras, sought in

different ways to resolve this conflict. They concluded that the problem lay in the assumption of monism. Thus, each articulated a pluralist worldview with more than one fundamental substance. For Empedocles, it was the four elements, Earth, Water, Air, and Fire. For Anaxagoras, it was an infinity of substances.

However, Anaxagoras evidently was not content with postulating infinitely many substances of the world, so he concluded that a single overarching principle was needed to provide unity to the whole system. This principle was *nous*, or mind. This introduction of the term '*nous*' into philosophy is evidence of a deepening distinction among the various meanings associated with '*psyche*' and '*pneuma*'. '*Nous*' is more related to the concept of mind in the sense of the human mind or reason (though distinct from '*logos*', which is also sometimes translated as reason). It represents, furthermore, a kind of unity of thought—a "thinking thing" in some sense.

Clearly mind, for Anaxagoras, is ubiquitous, omnipresent, and even god-like: ". . . whatever things were to be, and whatever things were, as many as are now, and whatever things shall be, all these mind arranged in order." (fragment 12; Smith 1934: 34) The action of mind is analogous to rotation: ". . . mind ruled the rotation of the whole, so that it set it in rotation in the beginning." And "rotation itself caused the separation." So mind acts by a rotation of the infinite elements, which causes the diversity of things to come into being. Thus we see that mind causes motion, as it had for the earlier thinkers. But this motion is of a specific kind, namely circular. Furthermore, it is a creative force, bringing concrete things into existence.

Anaxagoras determined that mind, as a universal quality, existed in varying degrees: "All mind is of like character, both the greater and the smaller." (ibid.) Here we see a form of pluralism that is tempered by a fundamental unity of the nature of the diverse minds. Mind is present in "greater" and "lesser" forms, yet they all share some common basis in *nous*. The lesser minds are not ontologically different from the greater.

One other citation suggests panpsychist inclinations in Anaxagoras. In Aristotle's *Metaphysics* we find the following statement attributed to him: ". . . just as in animals so in nature mind is present and responsible for the world. . . ." (984b15) The mind that is ubiquitous is not just some amorphous, abstract mind; it is essentially like that of animals, i.e. an animated soul or spirit. Mind is present both in the whole of the cosmos and in the specific objects, such as animals. This implies a multi-level system of mind, occurring distinctly in different levels of structured matter.

Cleve (1969) addressed this issue of individual minds in detail. Other interpreters see Anaxagoras' nous as only a single cosmic Nous—the only distinct personality in the universe. In Cleve's reading, the plural elements (*moiras*) never exist without some conjoining nous: "Anaxagoras, too, is a *panzoist*, i.e. one to whom *body and consciousness are still a unity*. . . . The notion of a 'matter without consciousness' . . . [does] not exist for [him]." (ibid.: 321) Cleve also notes that "*every molecule is surrounded by Nous on all sides*" (207). As to the question of *distinct individual* minds, Cleve suggests that "a piece of Nous [could] be *in a molecule*—in the same sense as a fellow locked in a prison 'is in'" (269).

So we see that Nous surrounds *all* matter, and individual nous resides "in" at least *some* molecular elements. The critical issue is whether nous is in *every* molecule or only in those (as some fragments suggest) of "living organisms"—however defined. There seems to be no clear indication either way, and thus the status of Anaxagoras' panpsychism remains in question.

Empedocles' pluralism was more modest. He argued that a small set of elements was sufficient to explain the material substance of the world. He took the water of Thales, the air of Anaximenes, and the fire of Heraclitus, added a fourth element (earth), and created a material universe based on these four elements. Furthermore, there was a hierarchy to these elements. Fire (the most rarefied, active, and energetic) came first; next was air; then the more passive water; finally there was earth (the coldest, densest, and most inactive).

Like Anaxagoras, Empedocles believed that an organizing principle was required to bring order to the elements. Rather than the single principle of Anaxagoras (mind), Empedocles offered up two principles, which are rather poetically referred to as *Philotes* (Love) and *Neikos* (Strife). *Philotes* was the power of attraction and cohesion, the force that drew the elements together to create the natural world. Logically, however, attraction could not be the only force in the world; otherwise all things would be drawn together into a formless mass. Obviously there had to be an opposing force, something that held things apart and caused them to remain distinct. This was the power of repulsion and separation, of *Neikos* (also sometimes translated as Hate). The four elements and these two principles formed the basis of Empedocles' world system—a striking anticipation of the modern physicalist worldview, with its duality of matter and energy.⁸

Yet Empedocles was clearly no materialist. Perhaps more than any other pre-Socratic, he made panpsychism central to his worldview. Guthrie states that "it was in fact fundamental to Empedocles' whole system that there is

no distinction between animate and inanimate, and everything has some degree of awareness and power of discrimination" (1962–1981, volume 2: 233). The mere fact that Empedocles chose Love and Strife as his two central forces indicates his belief that animate powers were at work in the cosmos.

Further evidence of Empedocles' panpsychism is found primarily in three fragments.

Fragment 103, in transliterated Greek, reads "*tede men oun ioteti tyches pephroneken apanta.*" Smith (1934: 31) translates this as "In this way, by the good favour of Tyche, all things have power of thought." Barnes (1987: 178) translates it more literally: "Thus by the will of chance all things think." This is an advance in philosophical reasoning; earlier philosophers' references to gods, souls, or spirit are replaced by an ability, a *power*, in all things: the power to think. This power is granted by *tyches*, interpreted either as the god Tyche or (more likely) as simply the process of chance, or rather luck. Empedocles is saying, in effect, "By good fortune, all things are able to think."

The second important passage is from Aristotle: "Empedocles [says that the soul] is composed of all the elements and that each of them actually is a soul." (*De anima* 404b11) The two ideas here are (1) that souls (*psychein*) are material and composite and (2) that each element, in itself, is ensouled. Clearly, if each element is a soul, and if these elements constitute the whole world, then all things are souls or soul-like. Empedocles thus seems to use 'psyche' as a synonym of 'mind', but not as involved with the power of motion. Movement comes from the forces of Love and Strife, which, although animate, apparently are not *psychein*.⁹

Third, we have this striking fragment, recorded in Hippolytus' *Refutation of All Heresies* (ca. 210 CE):

If thou shouldst plant these things in thy firm understanding and contemplate them with good will and unclouded attention, they will stand by thee for ever every one, and thou shalt gain many other things from them; . . . for know that all things have wisdom and a portion of thought. (fragment 110; Guthrie, volume 2, p. 230)

The final phrase—"panta gar isthi phronesin echein kai nomatos aisan"—is, as usual, subject to varying translations. For example: "For know that they all have thought and a share of mind." (Barnes 1987: 163) "Do not forget, all things have mind and a share in cognition." (Cleve 1969: 369) Freeman (1948: 64) translates *phronesin* as intelligence. In any case, we find here a poetic passage that is at once beautiful and insightful. Empedocles is indicating that a particular method of thinking, a way of approaching the world

in a sympathetic fashion (“with good will”), will yield abundant fruit. He is clearly advocating a way of thinking about things with clarity and compassion, centered on the idea that, like ourselves, “all things have wisdom.” Panpsychism is seen as the path to true and lasting insight.

Empedocles thus relies on two variations of earlier arguments for panpsychism, and introduces a new, third argument. First he employs the Indwelling Powers argument by claiming that everything has the power of thought. This of course is a different power than motion, but it is taken as equally real and equally demanding of explanation. Second, he uses the Continuity argument in a pluralistic fashion, appealing to inherent soul-nature of the four elements that constitute all things. Third, and perhaps most fundamentally, mind is clearly an inherent part of his cosmic system, and as such it constitutes a kind of “first principle” (metaphysically speaking). Thus, we may designate this as the First Principles argument for panpsychism. Mind is not derivative or incidental, but central and primary. This was also the case for Anaxagoras, but because the status of his panpsychism is in doubt we may better attribute it directly to Empedocles.

Finally, consider the atomist theory of Leucippus and Democritus. On their view, all things in the world consist of imperceptibly small, indivisible atoms (*atomos*) that move through otherwise empty space and interact via mechanical means to create the large-scale objects of matter. Democritus claimed that not all atoms are alike, but that there are many different sizes and shapes, and that these differences account for the different physical properties.

It is sometimes believed that there is no place for mind or soul in the atomist universe. And in fact these philosophers did take the first steps away from a “hylozoist” interpretation. Cleve (1969: 421) has noted this:

For the very first time, we have here the notion of “matter without consciousness.” Democritus (or Leucippus) forms the notion of *atomoi apatheis*, of “unfeeling atoms,” being the first to drop [in part] the idea of panzoism.

However, these philosophers did not eliminate soul from the cosmos. Even though most kinds of atoms were completely without feeling, one certain type of atom—namely, that of spherical shape—was unique in that it possessed psyche and sensitiveness. Aristotle explains that “those [atoms] which are spherical [Democritus] calls fire and soul” (*De anima* 404a2). The implied connection between soul and fire was evidently quite common in ancient Greece; both were seen as the most rarefied of substances, and often soul was considered to be made from the element fire. The Democritean psyche was thus atomistic and material, like all things.¹⁰

The crucial question is this: Which objects, in addition to humans, contain the spherical soul atoms? Aristotle continues:

Spherical atoms are identified with soul because atoms of that shape are most adapted to permeate everywhere, and to set all the other [atoms] moving by being themselves in movement. (404a5)

If soul atoms are everywhere (and not just “everywhere in the human/animal body”), the apparent conclusion is that all things have souls (argument by Continuity). Consistent with earlier theories of soul, there are clear implications here that soul-atoms are omnipresent and are the ultimate cause of motion. Perhaps they are not *always* everywhere, and perhaps they are not the *only* source of motion—this we cannot tell. Consequently, it is difficult to clearly determine the extent of panpsychism in atomism. But the concept of a soul-atom had a great deal of influence, both on ancient atomists (including Epicurus and Lucretius) and on panpsychist philosophers, even through the late 1800s. William Clifford (ca. 1870) and others put forth panpsychist theories of “mind-stuff” that recall the ideas of Democritus.

It bears repeating that, apart from Heraclitus, the so-called hylozoist tradition of the pre-Socratics is misnamed. Nothing in the above citations indicates specifically that anyone viewed all things as alive (except through the indirect association of life with psyche). ‘Hylopsychism’ would be more appropriate, or even ‘hylotheism’. (‘Pantheism’ is not really correct, since that term implies that a singular god is identical with all things; the intent was clearly that multiple gods exist, and that they dwell in things as an inherent aspect of being.) ‘Hylozoism’ carries a negative connotation in modern literature and is frequently used as a vague disparagement of aspects of Greek philosophy. The term is incorrect and misleading, and it is one more indication of the low regard given to panpsychist philosophy. Surprisingly, the one ancient philosopher most deserving of the label ‘hylozoist’ is Plato.

2.2 Plato

Socrates, Plato, and Aristotle all set philosophy forward on a new path of rationalism and logic. The consensus view that Plato was not a “primitive hylozoist” is typified by the following passage: “The hylozoism of the Milesians was no longer possible for Plato. Life (soul) and matter were not the same, and he sees soul as the self-moving principle which imparts its own motion to otherwise inert body, thus making it animate.” (Guthrie 1962–1981, volume 4: 420)

Certainly Plato (and Aristotle) broke new ground, but in some ways there was less divergence than is generally acknowledged or understood. Given the panpsychic intuitions of Plato's esteemed predecessors, we should not be very surprised to see elements of panpsychism in Plato himself. In fact he makes a number of interesting comments in support of such a view. It appears that Plato did embrace a subtle form of panpsychism, though he seems not to have worked out its implications.

First, though, we must clarify the status of the world-soul thesis. This thesis, clearly and unambiguously held by Plato, is that the cosmos *as a whole* is possessed of a soul (the cosmic soul being granted by the demiurge upon creation of the cosmos). This is significantly different from the thesis of hylozoism, or panpsychism, in which each thing *individually* is ensouled. If one holds strictly to the world-soul thesis, one denies the existence of distinct, individual soul—including that of human beings. Plato, however, held that *both* the cosmos and individual humans (among other things) possess souls.¹¹ Thus, his was a more complex notion of ensoulment, requiring more philosophical justification. Ensoulment must be a consequence of ontology; something in the essential nature of (at least) humans and the cosmos accounts for their possession of soul. Plato's ontology of ensoulment logically and implicitly extends to many (perhaps all) other objects.

A second introductory comment: The following analysis is centered on Plato's late works. Plato seems to have changed his perspective on ensoulment somewhere between his middle period and his late period. It is significant that he moved from an ambiguous standpoint to a more consistent and more universal view of ensoulment in his later years.

As an example of Plato's middle-period views, consider the *Phaedrus*. In this dialogue he makes a distinction between things that are animate and things that are inanimate. He notes, for example, that "every bodily object that is moved from outside has no soul" (245e), and that "all soul looks after all that lacks a soul" (246b). There seems to be a clear distinction between the two kinds of objects.

Yet at the same time Plato seems sympathetic to the view that something soul-like is present in, or associated with, apparently inanimate things. Socrates lectures in an unusual setting—outside of town in the shade of a large plane tree—and this inspires him to reflect on nature. Near the end of the dialogue, he makes the rather surprising claim that nature was the original source of philosophy, and that the rocks and trees might "speak the truth":

. . . the priests of the temple of Zeus at Dodona say that the first prophecies were the words of an oak. Everyone who lived at that time, not being as wise as you young

ones are today, found it rewarding enough in their simplicity to listen to an oak or even a stone, so long as it was telling the truth. . . . (275b)

On the one hand this can be read as a breaking away from the “simplicity” of the earlier, hylozoistic view. And yet there is a gentle chiding of the purported wisdom of the young philosophers; one senses a certain sympathy with the ancient ways of knowing nature.

Plato’s more explicit references to panpsychism are found in his later writings. The four primary sources—*Sophist*, *Philebus*, *Timaeus*, and *Laws*—are generally regarded as among his last works. In these works we find three distinct arguments pointing toward a panpsychic universe. The fact that these arguments come in the later works implies that they represent Plato’s mature thinking on the matter and thus have a relatively strong degree of significance in his overall system of metaphysics.

These are *not* explicit arguments. Plato does not explicitly draw a panpsychic conclusion in *any* of these works. And yet his arguments are, individually and jointly, consistent with a panpsychic worldview. More than this, they logically entail panpsychism. Significantly, nowhere does he deny this implication, and he ceases to make clear distinctions between obviously animate and obviously inanimate things.¹² All this is indicative of, if not an outright endorsement, at least a strong sympathy with panpsychism.



For Plato, as for the pre-Socratics, the concept of soul was closely related to the concept of mind. Psyche and nous are important concepts for him, and the difference in meaning between them is relatively small. A number of points support this view. Writing on Plato’s concept of soul in the *Phaedo* (a primary text on the theory of the soul), Guthrie (1962–1981, volume 4: 421) states plainly that “in its pure state it was identical with nous.” Aristotle (*De anima*, 407a5) observes that “it is evident that Plato means the soul of the whole to be like the sort of soul which is called mind.” This is consistent with Aristotle’s overall discussion in book I of *De anima*, in which he argues that his predecessors have generally not distinguished between mind and soul. Plato himself, in *Philebus*, identifies soul as the necessary (though not sufficient) condition for mind: “No wisdom and reason without soul.” (30d) In *Timaeus* we learn that “it is impossible for anything to come to possess intelligence apart from soul” (30b).

Now let us turn to the four primary texts. In *Sophist*, Plato investigates the nature and meaning of the Form of Being. At the start of a somewhat complicated passage near the middle of the dialogue, the central character, the

Visitor, relates being to *dynamis* (power or capacity): “My notion would be, that anything which possesses any sort of power to affect another, or to be affected by another . . . has real existence; and I hold that the definition of being is simply power.” (247e)¹³ Some lines later, the Visitor elaborates that being is “an active or passive energy, arising out of a certain power” (248b). This identification of being with power, or “potent capacity” if one prefers, recalls in some sense the *pyr aeizoon* (ever-living fire) of Heraclitus: Both refer to the energy inherent in all extant things. The Visitor then contrasts being (or essence) with becoming (or generation). The initial thought is that being is something static and fixed, whereas becoming is motion and change. Ultimately (249d), however, it is decided that this is misleading, and that one must “include both the moveable and the immoveable in his definition of being.” The “moveable” aspect of being reflects being’s ability to act upon other things as well as to be known—a process that demands some change in the thing known.

This power of being—the “moveability” and capability for active, dynamic change—draws on Plato’s notion that such power of self-originating motion is indicative of the presence of psyche. (Compare the discussion of *Laws* below, where Plato equates “life” and “soul/mind” with self-motion.) If being has the power of self-generating motion, then such complete or perfect being (*to pantelos on*)—i.e. the Form of Being—must have not only an inherent psyche but also life and mind: “O heavens, can we ever be made to believe that motion [*kinesi*] and life [*zoe*] and soul [psyche] and mind [*phronesi*] are not present with perfect being? Can we imagine that, being is devoid of life and mind, and exists in awful unmeaningness an everlasting fixture? —That would be a dreadful thing to admit.” (249a)

Plato insists, very explicitly, that all three things—life, mind, and soul—inhere in being. He then immediately emphasizes the point again. He considers three different possibilities, dismissing all of them as “irrational”: that “[being] has mind and *not* life,” that “both [mind and life] inhere in perfect being, but that it has no *soul*,” and that “being has mind and life and soul, but although endowed with soul remains absolutely unmoved.” The Form of Being thus necessarily possesses life, mind, and soul.

Further, we know that all extant things participate in the Form of Being, as this is how they acquire their characteristic of existence. The crucial question, then, is whether all things also participate in the psyche of Being, and thereby acquire some psychic capacity. Certainly *some* aspects of the Forms—completeness, perfection, aspect of changelessness—do not transfer

to the participating objects, but there is no reason, in this case, to assume that life, soul, and mind are among these. Psyche is a naturalistic, embodied aspect of existence (as are life and mind); it is present in ordinary mortals, for example. This makes it essentially unlike the ethereal qualities of completeness and perfection. Thus, it is not unreasonable to presume that everything participates in life, mind, and soul.¹⁴ This constitutes a first argument for the concept of ubiquitous soul, arising from metaphysical first principles.

This conclusion is not without difficulties. If everything possesses life, mind, and soul, then it would seem that all things possess such abilities as the power of self-motion and the power of thought. Plato does not openly acknowledge these aspects of being. Yet it is certainly possible to expand the concepts of self-motion and thought so that they might encompass all material things. As we know, many of Plato's predecessors did precisely this. Many things in nature seem to move themselves: wind, rain, lightning, ocean waves and tides, rocks "spontaneously" falling downhill. Even Plato's notion of things as becoming and changing can be seen as a kind of self-motion.

Thus the argument is stated, and the implicit conclusion remains. Since neither the panpsychist conclusion nor its denial is addressed, we are left with an open question. But in the absence of a clear denial, and especially in light of the other passages below, the panpsychist conclusion seems the more compelling.

In *Philebus*, Plato returns to the structure of his earlier Socratic dialogues. The passages of interest are in 29a–31b. Socrates and his two interlocutors are debating the relative standing of knowledge and pleasure as they relate to the good. In the process, they seek to place each of these two qualities into the proper metaphysical category.¹⁵ The relevant passage comes with their discussion of knowledge, which is also referred to as intelligence, wisdom, and reason; we can infer that these qualities are closely related to the concept of psyche in general.

Socrates asks whether the structure of the universe was created by chance or by "order of a wonderful intelligence." The answer comes that "reason arranges it all" (28d). Socrates then explains that our human bodies are composed of the four elements (fire, air, water, and earth), as are all things in the cosmos, as is the cosmos as a whole. Therefore, we may speak of the ordered universe as a whole as constituting a "body." Our human body possesses a soul (psyche); therefore the "body of the universe" must also possess a soul. In the words of Socrates, "the body of the universe which has the same properties as our [body], but more beautiful in all respects . . .

possesses a soul" (30a). As an argument for the world-soul, the passage is clear enough. The cosmos is argued to possess a soul on the basis of its intelligent ordering of the elements, regularity, and beauty. But, again, the concept of the world-soul, in itself, does not qualify as panpsychism. It can be seen simply as a form of theism, or of pantheism. Neither theism nor pantheism implies panpsychism. Panpsychism requires that each individual thing, *pour soi*, possess a soul-like or mind-like quality (a point emphasized by a designation one sometimes sees: "pluralistic panpsychism"). That the combination of all things collectively has a mind is a different proposition.

On the other hand, the concept of a universal mind or a world-soul is likely to be a part of any panpsychist cosmos. Virtually any system that sees mind in all individual things will see it in the Whole. *Panpsychism implies a world-soul, but not necessarily vice versa.* Thus, we need further elaboration from Plato to determine if his view is only of a world-soul or whether it is of true panpsychism.

In fact, we find in this part of *Philebus* the second of three arguments for a panpsychist cosmos. This argument is a variation of the Continuity argument, and it is quite similar to that used by Empedocles. Plato relies heavily on analogy: A non-human object is argued to be similar in content to the human body, and thus is claimed to possess at least one essential characteristic of humans, namely a psyche. In simplified form, Plato's Continuity argument is as follows:

- (1) All physical objects, from the human body to the cosmos as a whole, are entirely composed of the four elements.
- (2) The human body possesses a psyche.
- (3) The human psyche is entailed by the body's composition of the four elements.

Therefore,

- (4) the cosmos possesses a psyche (world-soul).

Then, with the further implication that

- (5) psyche is a general quality of objects composed of the four elements, one may conclude that
- (6) every object possesses a psyche.

The weakest link in this argument is the third point: that somehow psyche is logically entailed by the fact that our human bodies consist of the four elements. Plato seems to take this for granted, as he makes no argument on

its behalf. He does not claim that “elements create soul” or that “soul is reducible to elements,” but simply that “bodies *possess* a soul”; somehow soul and the element-structure are conjoined, appearing together, neither without the other.

Plato’s third argument, also put forth in *Philebus*, is a version of the well-known Argument by Design. It is related to the Argument by First Principles, but it is more specific in its intent. This argument has of course been traditionally used by theologians and philosophers to argue for God’s existence on the basis of the vast and supreme ordering that we see in the world. Plato argues not for God, but for universal mind, the world-soul. In the process, he also makes the argument for panpsychism.

In *Philebus* one of the metaphysical categories under discussion is “cause” (meaning ultimate cause—the cause of all things and events in the universe). Socrates notes that “this cause is recognized as all-encompassing wisdom” and, more important, that “cause” is “present in everything” (30b). At issue is the meaning of the latter phrase.

Elaborating on the first point, Socrates says that “cause” is that which “orders and coordinates the years, seasons, and months, and which has every right to the title of wisdom and reason [i.e. mind]” (30c). Two lines later we find again Plato’s close correlation of mind and soul: “no wisdom and reason without a soul.” Then, from Socrates, “reason belongs to that kind which is the cause of everything” (30e). Thus, mind, in the form of reason, wisdom, or intelligence, belongs to the metaphysical category of “cause of all things.” This cause—mind, and the underlying psyche, is “present in everything.” Clearly this can be read in two ways. It can mean that *evidence* of the world-soul is present in the overall ordering of the cosmos, or it can mean that wisdom and reason themselves, and the underlying psyche, somehow reside in things. Viewing this passage in isolation, one might presume the former. Viewing it in conjunction with the other late-dialogue passages, however, we can see reason to support the latter.

Granting these arguments in *Sophist* and *Philebus*, we are still left wanting evidence of explicit attribution of soul to things other than humans or the cosmos. Some such evidence is necessary to confirm the conjecture. And in fact this evidence appears in the other two late works, *Timaeus* and *Laws*.

In *Timaeus* Plato offers more an exposition of rhetoric than a traditional philosophical dialogue. Socrates is again present, along with a number of other men, including the title character and Critias. The central character is Timaeus, who gives an extended description of the creation of the world. Timaeus is seen as a philosopher of considerable importance;

Socrates says that “he has, in my judgment, mastered the entire field of philosophy” (20a). Thus, nominally at least, Timaeus’ views are to be held in high regard.

Timaeus was considered the central Platonic text through the Middle Ages and into the Renaissance. There was considerable interest in Plato’s view of creation and in his idea of the demiurge, the one who created the universe and used the Forms to give it order. Also of interest was Plato’s depiction of the universe as alive, intelligent, and ensouled.

After some introductory words, Timaeus explains why the demiurge created the world: He wanted “everything to become as much like himself as possible” (29e)—that is, brought from “a state of disorder to one of order.” The intelligent, ensouled, and “ordered” demiurge sought to reproduce himself in the cosmos. Timaeus tells us that the demiurge “concluded that it is impossible for anything to come to possess intelligence apart from soul. Guided by this reasoning, he put intelligence in soul, and soul in body, and so he constructed the universe.” (30b) Again we see the implied connection of body (in general) with soul/mind. Timaeus sums up his point by saying that the “divine providence brought our world into being as a truly living thing, endowed with soul and intelligence” (30c).

Timaeus then informs us that “the universe resembles more closely than anything else that Living Thing of which all other living things are parts, both individually and by kinds” (30c). The emphasis here is on both the individual things and the whole, which are said to share qualities of life and intelligence. Soul seems to exist in layers—in the “parts,” in the “kinds” of parts, and in the cosmos as a whole. The demiurge “made [the cosmos] a single visible living thing, which contains within itself all the living things whose nature it is to share its kind” (31a).

Continuing his detailing of the creation, Timaeus describes the formation of the stars and others heavenly bodies. The stars are “divine living things” (40b). The Earth itself is a “god,” “foremost [in the universe], the one with greatest seniority” (40c). As the demiurge was preparing to create the stars, “he turned again to the mixing bowl, . . . the one in which he had blended and mixed the soul of the universe.” He concocted another “soul mixture,” and then “divided the mixture into a number of souls, equal to the number of the stars and assigned each soul to a star” (41e). This is the first unambiguous evidence that Plato saw individual, nonhuman objects as endowed with psyche.

Later in the dialogue (69c–70e), Plato elaborates on his theory of soul. He articulates three kinds of soul: reason, spirit, and appetite. These are discussed, significantly, in the context of *zoa* (animals, or living things). *Zoa*

have, by definition, one or more of these soul-types. Humans have all three, each located in a different part of the body. Celestial objects such as the Earth and the stars have only the highest soul-type: reason. At 77b we find Plato's attribution of the third type of soul, appetite, to plants, thus marking them for the first time as ensouled entities.

Left unstated, however, is the possible existence and nature of *other soul-types*, which may apply to lower-order objects like rocks. Clearly it would not do to attribute appetite to a rock. And yet some rocks—lodestones—have an undeniable ability to move things. How does Plato assess the nature of the lodestone? Unfortunately he gives it only passing treatment. But in the one substantial reference to the subject, in the early dialogue *Ion*, he likens its magnetic power to that of the gods (533d–536a). Poets act as conduits of a “divine power”; thus, they are like the lodestone, which, through a chain of iron rings, passes along its attractive force.¹⁶ One is left with the implication that the power of the lodestone is itself divine, driven by a god or spirit, and thus, in a way, ensouled.

In any event, the stock of ensouled entities has grown: humans, the cosmos, the stars, the Earth, plants. Again, these are consistent with the arguments in *Sophist* and *Philebus*. Such arguments provide something of an ontological theory establishing why all things may be considered as ensouled. If one were to disagree with this conclusion, then one might reasonably expect to find something in Plato's ontology that would explain why the above set of objects alone are ensouled, and everything else is not; such an explanation is lacking in his later writings, and thus panpsychism is the more reasonable conclusion.

Plato's longest and last work, *Laws*, is primarily known for its description of the structure of the ideal, constitutionally based state. However, the issue of punishment arises as an important concern. The theory of punishment depends on the existence of gods, and book X provides an extended argument proving their existence.

The argument revolves around the concept of “self-generating motion,” which is seen as primordial and as “the source of all motions.” Any object exhibiting such motion has the further quality of “life.” The character Clinias offers this observation: “When an object moves itself, [we are] to say that it is ‘alive.’ [And furthermore] when we see that a thing has a soul, the situation is exactly the same. . . . We have to admit that it is alive.” (895c) Furthermore, we have the identification of “self-movement” with “soul.” The Athenian asks “What's the definition of the thing we call soul?” and answers “Motion capable of moving itself.” (896a) Clinias reiterates the point: “The entity which we all call ‘soul’ is precisely that which is *defined*

by the expression ‘self-generating motion.’” (ibid.) Thus, we end up with a three-way identification between life, soul, and self-movement.

Plato then makes a series of statements arguing that soul is primordial in the cosmos, is older than matter, and in fact is the mover of matter: “Soul, being the source of motion, is the most ancient thing there is. . . . Soul is the master, and matter its natural subject.” (896b–c) Next there is a restatement of the position, brought out in *Philebus*, that soul is the cause of all things (896d) and “controls the heavens as well” (896e).

The Athenian then addresses whether there is only a single world-soul or multiple souls. The initial answer is clear enough (“more than one”), but he is not confident as to the exact number.¹⁷ Some lines later, he asks “If, in principle, soul drives round the sun, moon, and the other heavenly bodies, does it not impel each individually?” (898d) The answer is “Of course.” The Athenian then supports this contention by referring to the sun:

Everyone can see [the sun’s] body, but no one can see its soul—not that you could see the soul of any other creature, living or dying. Nevertheless, there are good grounds for believing that we are in fact held in the embrace of some such thing though it is totally below the level of our bodily senses, and is perceptible by reason alone. (898d)

In this remarkable statement, Plato not only adds the sun to the list of ensouled objects (significant insofar as the sun was not recognized as just another star) but also makes clear that the soul of a nonhuman object is not empirically knowable; rather, it is to be grasped by means of the intellect.

Then we have a final passage, arguably definitive, that indicates Plato’s view of the possibility that all things, individually, possess psyche. After acknowledging once again that “soul manages the universe” (899a), he writes:

Now consider all the stars and the moon and the years and the months and all the seasons: what can we do except repeat the same story? A soul or souls . . . have been shown to be the cause of all these phenomena, and whether it is by their living presence in matter . . . or by some other means, we shall insist that these souls are gods. Can anybody admit all this and still put up with people who deny that “everything is full of gods”? (899b)

The last phrase, of course, is a nod to Thales and his famous declaration, examined earlier. Souls exist throughout the cosmos, driving and coordinating all movement and change. They are likely manifest as a “living presence in matter.” And they are knowable not empirically but through reason alone.

One may object to the phrase “a soul or souls.” It is almost as if Plato is unsure or ambivalent about whether the world-soul acts alone in the

cosmos or in conjunction with the manifold individual souls. Yet all the other passages suggest multiple souls, acting independently of and contemporaneously with the world-soul. An alternate rendering of this phrase might be “a world-soul, and the multiplicity of other souls, have been shown to be the cause.”

Thus Plato makes subtle use of three distinct arguments for panpsychism. They occur in four of his last major works, and thus they probably represent his mature thinking on the matter. And this panpsychist vision is consistent across these works, each mutually supporting the other.

One final piece of supporting evidence comes from Plotinus. In the only known explicit reference to panpsychism in Plato, Plotinus writes the following: “Plato says there is soul in everything of this [earthly] sphere.” (*Ennead* VI, 7, 11) That Plotinus is referring not merely to Plato’s world-soul but to a soul or intelligence in all things individually is clear from the context. Considering all the evidence, one has a hard time comprehending Guthrie’s bold claim that “hylozoism . . . was no longer possible for Plato.”

There are several reasons why a panpsychist interpretation of Plato’s metaphysics is neither well known nor examined. First, some commentators just assume that Plato is speaking poetically or metaphorically in these passages. This is difficult to prove either way, but in any case it is a problematic feature of much of Plato’s writing. To argue this way on the issue of panpsychism is a convenient and simplistic denial. Second, panpsychism seems to be refuted by passages in the early and middle works. This may be true, but it may also represent a shift over time in Plato’s conception of soul. Third, panpsychism does not figure prominently in the overall corpus of Plato’s thinking (at least, not explicitly)—something true not only of Plato but also of many other major panpsychist thinkers. This, however, is no basis for denying its existence. The relevant passages must be judged as a whole and in light of any potentially conflicting passages elsewhere. There appear to be no passages in the late dialogues that explicitly deny the panpsychist conclusion. Fourth, it is not clear what the immediate implications of panpsychism are for Plato’s metaphysical system, if any. Fifth, on this issue Plato tends to make relatively flat statements of fact, without supplying much rationale. Elaborate and extended logical arguments are lacking. The arguments that do exist are indirect and implicit. This might suggest that the matter of panpsychism was perhaps more of an intuitive view for Plato, grounded perhaps in the “hylozoism” of his predecessors. And lastly, philosophy of the past few hundred years has been dominated by mechanist interpretations of nature, and writers have been reticent about acknowledging aspects of panpsychism in *any* major historical philosopher, let alone Plato.

A reassessment of the evidence, presented above, may perhaps spark a new inquiry into this aspect of Platonic thought.

There are certainly unanswered questions. For example, what is the relationship between the myriad individual souls and the world-soul? Are the individual souls truly distinct entities, or are they merely “aspects” of the one Soul? If they are distinct, they must still stand in some relation to the larger world-soul, which would seem to have a special status among all the souls of the cosmos. One could speculate on answers to these questions, but there is little in Plato’s writings to justify any particular conclusion. He seems to have simply left such matters open. And in any event such questions are not unique to the panpsychist interpretation, nor do they undermine it in any way.

Finally, one might ask if it really matters whether there are many souls or only one Soul with many manifestations. I believe that it does. It would seem that one’s self-conception must be vastly different in each case, and it is hard to fathom that Plato was unconcerned with this distinction. But it is not hard to imagine him as struggling with issues of personhood and the relation between soul and Soul, ultimately reaching a consistent view of soul as pervading the universe.

2.3 Aristotle

Aristotle is perhaps the last ancient philosopher who would be expected to put forth panpsychist views. His notion of mankind as (alone among living beings) possessing a rational, separable, and immortal soul is in line with the traditional Cartesian view. His emphasis on analytics and classification aligns him with contemporary materialist science. And his denial of the Platonic Forms makes him more of a conventional realist. Thus, it is in his case that we find perhaps the most surprising evidence of panpsychist thinking. Much of the groundwork along this line was done by Peck (1943), and, especially, by Rist. Rist’s brilliant analysis in his 1989 book *The Mind of Aristotle* is a stand-out among recent writings on Aristotle’s conception of mind and soul.

By way of background, we know that Aristotle viewed the psyche or soul as “the form of living things.” Like Plato, he posited three degrees of soul: nutritive, sensitive, and rational. These incorporated five “psychic powers”: in ascending order, nutritive/generative, appetitive, sensory, locomotive, and rational. Each level encompasses and contains those below it.

Like Plato, Aristotle accepted that plants were ensouled. A typical statement is found in *De anima*: “It seems that the principle found in plants is also a kind of soul; for this is the only principle which is common to both

animals and plants.” (411b27) Plants, as the lowest order of living things, possessed only nutritive capacity. All animals had, at least, nutritive and sensitive powers; higher animals had additional powers; man alone possessed all five psychic powers. (The rational soul was of a different order than the others; it alone survives the body, and is immortal.)

At issue, then, are the non-living things. According to Aristotle they have no soul—hence, technically, he is no panpsychist. But the question remains whether non-living things have something soul-like in them. From early on, Aristotle seems to have been open to such a view:

Nature proceeds little by little from things lifeless to animal life in such a way that it is impossible to determine the exact line of demarcation, nor on which side thereof an intermediate form should lie. (*History of Animals*, 588b4–6)

The lack of a firm ontological distinction between living and “lifeless” things suggests that there may be some common psyche-like quality shared among all things.



Aristotle sought to explain the puzzling phenomenon of the generation of living, ensouled beings. As he saw it, there are two ways in which this can occur: sexual reproduction and spontaneous generation. The former is challenging enough to understand, and Aristotle spends considerable effort explaining the nature and action of male and female reproductive organs. On his final view, sexual reproduction occurs because the male supplies the (rational) soul in his semen, which shapes and forms the raw material—the “menstrual blood,” he believed—in the female’s uterus. But spontaneous generation is very problematic. Plant and animal life appear out of inanimate matter. How is this possible?

First, note that there is something of an evolutionary imperative in Aristotle’s thinking. He envisioned all of nature as continually striving toward “the better” or “the good”:

There is something divine, good, and desirable . . . [that matter] desire[s] and yearn[s] for. . . (*Physics* 1, 192a18)

For in all things . . . nature always strives after the better. (*On Generation and Corruption* 2, 336b28)

All existing things . . . seek [their] own special good. . . (*Eudemian Ethics*, 1218a30)

By ‘better’ Aristotle has in mind certain specific qualities; he comments that being is better than non-being, life better than non-life, and soul better

than matter. Thus, as Rist points out (1989: 123), there is a meaningful sense in which “the whole of the cosmos is permeated by some kind of upward desire and aspiration”—upward in the sense of toward “form,” life, and soul.

So spontaneous generation is explained in part by the upward striving of matter that Aristotle articulated in his middle-period writings.¹⁸ This in itself displays a tendency toward a kind of panpsychism. But he went further, describing the actual means by which such a tendency or striving became manifest as soul.

At the beginning of book 2 of *Physics*, Aristotle distinguished things that come about “by nature” versus those created by “cause”:

Of things that exist, some exist by nature, some from other causes. “By nature” the animals and their parts exist, and the plants and the simple bodies (earth, fire, air, water)—for we say that these and the like exist “by nature”.

All the things mentioned present a feature in which they differ from things which are *not* constituted by nature [e.g. artifacts]. Each of them [i.e. the natural things] has within itself a principle of motion and of stationariness. . . . (192b9ff)

Animals, plants, and even the four elements are here seen as possessing an inherent “principle of motion” that is related to the essential nature of all (natural) objects. He then begins the final book of *Physics* (book 8) with a question regarding this universal motion: Has such motion always existed in the cosmos, or was there a time at which all was still? After some brief consideration of the alternatives he concludes that absence of motion is impossible. Thus, the answer to the question “Is [motion] in fact an immortal never-failing property of things that are, a *sort of life* as it were to all naturally constituted things?” (250b12; italics added) is clearly Yes. This “sort of life” that all things have is consistent with the view of universal striving that we see in the earlier portions of the same work, and in the related passages quoted above.

The “sort of life” in matter was no idle concept; it was directly connected to the process of spontaneous generation. Aristotle put it as follows in one of the last-written books of the *Metaphysics*: “Those natural objects which are produced . . . spontaneously, are those whose matter can also initiate for itself that motion which [in sexual reproduction] the seed initiates.” (1034b5) The “life” in matter initiates the generative process, thus bringing true life, and soul, into being.

Remaining to be explained are (1) the precise nature of this life or striving that all natural things possess and (2) just how this activates a process such as spontaneous generation. Clearly this life-property is not equivalent

to psyche (soul), as Aristotle consistently confines soul, in its three forms, to plants, animals, and humans. Rist argues that in the early Aristotle this quality is as much mind-like as soul-like. As evidence he cites a passage in Cicero's *On the Nature of the Gods*: "In one place [Aristotle] attributes divinity to mind only; in another he says that the universe itself is God." (book I, 30–33) The reference is to Aristotle's lost early work *On Philosophy*. Rist reads into this a three-way identification between the cosmos, mind, and God—the concept of the world-mind.

The identification of cosmos, mind, and God is supported by the idea that all things have "a sort of life" and by the notion that "matter desires form." It is also supported, indirectly, by passages in the roughly concurrent work *De caelo*. This book opens by reiterating that the four elements, or simple bodies, "possess a principle of movement in their own nature" (268b28). That is, the natural movement of fire and air is upward, whereas that of earth and water is downward. The heavens, however, contain a different element, the "primary body," which is fundamentally unlike the four elements, and whose natural movement is circular; this is the ether. The ether moves endlessly in a circle, accounting for the perceived circular motion of the stars and planets. Importantly, the ether exhibits *self*-movement; as such, it is ensouled: "If it moves itself, it must be animate." (275b25) The self-moving ether is "immortal" and "divine" (284a4). It "contains" all limited, finite, earthly motions within it. It is, in essence, the source of all other movement in the universe.

Book II of *De caelo* opens with a discussion of symmetry in the heavens, and again repeats the conclusion: ". . . we have already determined . . . that the heaven is animate and possesses a principle of movement" (285a28). The self-moving ether drives the motion of the celestial bodies, thus endowing them with a kind of life: "We think of the stars as mere bodies, and as units with a serial order indeed but entirely inanimate; but we should rather conceive them as enjoying life and action." (292a19–21) Hence, "we must, then, think of the action of the stars as similar to that of animals and plants" (292a32). The motion of all things, from stars to elements, exhibit a degree of rationality, and rationality is a hallmark of mind. Mind is *in* all things to the extent that its action is *manifest in them* via a cosmic source of rational movement.

Aristotle evidently came to see the world-mind as insufficient, and so, shortly thereafter, he introduced the concept of the Prime Unmoved Mover. This Mover stood alone and apart from the natural world and, on Rist's view, operated in conjunction with the world-mind (Rist 1989: 129). Mind was immanent, and the Mover was transcendent. Aristotle also began

to distinguish things with souls (the animate things) from those without souls (the inanimate). Plants, animals, and the ether fell into the former category; all other things, including the four elements, were relegated to inanimate status.

Yet even after the introduction of the Unmoved Mover and the separation between the animate and inanimate objects, Aristotle still had to account for both spontaneous generation and the natural tendency (*dynamis*) of the elements to move toward their natural resting places—fire upward, earth downward, and so on. Furthermore, there was the open status of the fifth element, the ether. Rist argues that Aristotle ultimately attached the notion of mind to the Unmoved Mover, removing it from immanence in the cosmos. But some agent of the Mover would have to remain in the natural world.



Aristotle supplemented the notion of the ether with a new concept, that of the *pneuma*. Borrowing, perhaps, from Anaximenes, he installed the *pneuma* in a preeminent role in nature. It appears prominently in the last three of his biological works (*Parts of Animals*, *Motion of Animals*, and *Generation of Animals*). And it neatly ties together the issues of psyche, generation, and celestial and earthly motion—and panpsychism.

Just as the ether is the heavenly bearer of mind and motion generated by the Prime Mover, the *pneuma* is the earthly bearer; it is the “vehicle of Soul” and its “immediate instrument” (Peck 1943: lix), the “bearer of soul” (Rist 1989: 131). *Pneuma* is not mind (this was reserved for the transcendent Mover), nor is it soul, as soul resides only in those animate beings. It is “soul-like.” As Aristotle said in one of his last works, *Generation of Animals*, it is the “faculty of all kinds of soul,” the “vital heat” (*thermoteta psychiken*), the “principle of soul” (736b29ff). As such, *pneuma* shares much in common with ether; they are, as Aristotle says, “analogous.” Both are intermediaries to the Prime Mover, and both convey its rationality and soul. Neither is explicitly mind nor soul; each is only the carrier of such. Furthermore, both share a *vital power* or a *generative capacity*. They both bring soul to natural objects, and thus in a sense account for the life in them. This brings us back us to the problem of spontaneous generation versus sexual reproduction. In sexual reproduction it is the soul-heat of the *pneuma* in the semen that conveys life to the embryo. In the case of spontaneous reproduction—which, as all know, works best in decomposing matter sitting out in the hot sun—it is the heat of the solar ether (manifest

on Earth as the pneuma) that conveys life. Regarding this vital heat, Aristotle said:

This is not fire nor any such force, but it is the pneuma included in the semen and the foam-like, and the natural principle in the pneuma, being analogous to the element of the stars [i.e. ether]. (ibid.: 736b35)

The soul-like pneuma is ubiquitous in the natural world, penetrating and informing all things. It not only brings soul to the embryo and to the spontaneously generated creatures; in addition, it accounts for the general property of matter—its desire for form and for the good. Aristotle is explicit and unambiguous that all things are inspirited by the pneuma:

Animals and plants come into being in earth and in liquid because there is water in earth, and pneuma in water, and in all pneuma is vital heat, so that in a sense *all things are full of soul*. (ibid.: 762a18–20; italics added)

The final phrase of this passage from *Generation of Animals* is unique in Aristotle's corpus. The text is emphatic: "*hoste tropon tina panta psyches einai plere*." Echoing panpsychist thinking from Thales to Plato, Aristotle apparently came to the conclusion that something soul-like, of varying degrees, inhered in all objects of the natural world. Peck (1943: 585) referred to this passage as Aristotle's "startling admission." He argued that such a conclusion is justified in part by the fact that animated beings arise out of nature (*phusis*), and that, "as we know, *phusis* never acts idly but always with a telos [end] in view" (ibid.). He continues: "Regarded in this way, 'matter' . . . might be looked upon as considerably more than mere lifeless, inert material; and in *Generation of Animals* Aristotle does in fact ascribe even the possession of psyche to it. . . ." Peck seems taken aback by this "startling admission," and appears unwilling or unable to place it in the larger context of Aristotle's conception of life and mind. It is in this latter step—the elaboration of the larger role of pneuma in Aristotle's theory of mind—that Rist makes a significant contribution.

Pneuma is thus the universal link among all things, and it provides a common ontological dimension. It makes the distinction between animate and inanimate relatively superficial. Through the pneuma, Aristotle avoided an unacceptable and unexplainable ontological dualism between things ensouled and those utterly soulless. Granted, he still had the problem of explaining just how pneuma becomes manifest as full-blown soul in certain objects (plants, animals, humans). But this is more a difference of degree than of kind, and thus it is less difficult metaphysically. It is unfortunate that, as far as we know, Aristotle never addressed it fully.

As might be expected, panpsychist interpretations of Aristotle are as rare as those of Plato. Aquinas cited this view of Aristotle in his *Summa* (part 1a, question 18; see discussion below). Apart from Peck and Rist, very few recent writers have commented on it. De Quincey (2002: 118–119) suggests that it is inherent in Aristotle’s theory ofhylomorphism. Several years earlier, Hartshorne argued for a similar view:

Aristotle’s statements that the soul . . . is all things, that all things are moved by God as the lover by what he loves (implying that all things love, and thus are sentient . . .), that a soul is the form of any organized, self-moving body (implying that if . . . nature consists entirely of more or less organized, self-moving bodies . . . then nature consists entirely of besouled constituents). . . . (1950: 443)

Hartshorne was on the right track, but the details are sorely lacking. As elaborated above, we can see a clear picture of a quasi-panpsychist cosmos in Aristotle—a cosmos in which everything has either soul or, at least, a soul-like presence, the pneuma, which confers an evolutionary, life-like impulse upon all things.

2.4 Epicurus and the Atomic Swerve

Epicurus (341–271 BCE) was the founder of one of the three great Hellenistic (post-Aristotelian) philosophical systems—Stoicism and Skepticism being the others. Epicurean physical theory relied heavily on the atomism of Democritus and followed his central thesis of material objects as composed of atoms moving through the void. To both thinkers, atoms possessed only the primary qualities of size, shape, and mass (inertia).

As has been noted, the special class of small, round soul-atoms were the basis for the psyche. Soul-atoms were light, fluid, and self-moving, and they moved all other atoms by physical contact. Presumably, anywhere the soul-atoms penetrated, there one found the action of psyche.

The atomists also believed that atoms had a natural “downward” motion something like that of raindrops falling. For Democritus (and Leucippus¹⁹), the motion of these atoms, soul-atoms included, was of a deterministic nature: “All things happen by virtue of necessity.” (Smith 1934: 45) This was problematic for Epicurus, whose ethical system required free will. Epicurus therefore kept the Democritean atoms but discarded the determinism. He argued instead that the motion of atoms resulted from three sources: weight (from their mass), mechanical collisions, and a new third factor that he called “swerve” (*parenklisis*—in Latin, *declinare*, meaning deflection or turning aside). The swerve was caused by a small amount of

“free will” exhibited by all atoms. This allowed them to initiate contact with other atoms, leading to a cascading of action that resulted in the formation of the complex atomic structures constituting the objects we see around us. Without swerve, atoms would fall smoothly through the void, unfettered by atomic collisions and interactions, and thus no complex systems would develop.

Very few of Epicurus’ original writings have survived, so we rely primarily on Lucretius’ *De rerum natura* (On the Nature of Things) (ca. 50 BCE); it contains the best sympathetic account of the atomic swerve. The basic statement of the view is found near the beginning of book II:

Though atoms fall straight downward through the void by their own weight, yet at uncertain times and at uncertain points, they swerve a bit. . . . And if they did not swerve . . . no clashes would occur, no blows befall the atoms; nature would never have made a thing. (II: 215–225)

The willful swerving of the atoms is the basis for our own free will: out of the swerve “rises . . . that *will* torn free from fate, through which we follow wherever pleasure leads, and likewise swerve aside at times and places” (II: 255–260). Human free will cannot arise *ex nihilo* (“since nothing, we see, could be produced from nothing” (287) and hence must be present in the atoms themselves. “Thus to the atoms we must allow . . . one more cause of movement [namely, that of free will]—the one whence comes this power we own.” (284–286)

Thus the swerve serves two purposes: It accounts for the complex physical structure of objects, and (independently) it provides the basis for human freedom of will. Epicurus used the swerve to simultaneously solve two potentially serious problems for his atomic worldview.

This latter purpose, in fact, also provides a new approach in arguing for panpsychism. Humans clearly exhibit will. Will is a fundamental quality of existence and cannot emerge from non-will. Therefore, will is present in the elemental particles of the cosmos, and hence in all things. This approach may be called an *Argument by Non-Emergence*. If certain psychic qualities are not emergent, then they are *eo ipso* present in all things. This particular argument has proved to be one of the more enduring arguments for panpsychism, and it is still employed today.²⁰

The Non-Emergence argument is subject to at least three important criticisms (not including the eliminativist argument that will, consciousness, or mental states are fictitious). First it may be argued that will (or mind, etc.) is indeed emergent and has emerged only with the coming-to-being of *Homo sapiens*. This seems to be the implicit view of most conventional

philosophers, but in fact it is exceptionally difficult to defend. Some unique physical feature of the human species must be found to account for mind (reminiscent of Descartes' discovery of the pineal gland)—otherwise mind would be present, in descending degrees, in all animals (at least). A second objection, related to the first, could argue more generally for the uniqueness of humanity (through evolution, creation, or whatever). It must then be argued that humans are (a) ontologically unique and (b) unique in a way that endows them alone with mind. Theists typically take this approach. A third objection could be that mind is not a fundamental quality of existence and therefore its emergence is less miraculous and less difficult philosophically. This puts mind on a footing with general physical characteristics such as “mammalian” and “quadruped.” This seems an unlikely and difficult counterargument.

Given that atoms have will, this does *not* imply, according to Lucretius (and perhaps Epicurus), that they possess sensitivity or mental powers. Lucretius allowed for certain qualities to be produced from nothing; these include life and sentience. The ability to sense is evidently viewed as an emergent phenomenon, unlike the power of will. Thus, atoms are said to possess will but not sentience: “Now all that we know [of] is composed of insensate atoms . . . in every case.” (864–846) And it is permissible to “rightly conclude that sense comes from non-sense” (930). The atomic swerve has no meaning relative to human sensate qualities such as joy, happiness, or pain; atoms “must not, then, be endowed with sense” (972).

By his attribution of will to atoms, Epicurus made explicit the implicit panpsychism of Democritus. Yet it was a limited form of panpsychism, allowing only the psychic quality of will to all atoms and hence to all matter. Lucretius does not expand on the panpsychic implications, nor does he discuss freedom of will in ordinary “inanimate” objects—which seems to be a logical consequence. Again, we are given no evidence that there is something ontologically unique about human beings.

2.5 Stoicism and the Pneuma

Zeno of Citium, a contemporary of Epicurus, founded his own school of philosophy in Athens circa 325 BCE. This school came to be known as Stoicism. Zeno was succeeded first by Cleanthes (ca. 260 BCE) and then by Chrysippus (ca. 230 BCE). These three men pieced together various lines of Stoic thought and formed a comprehensive philosophical system. Stoic philosophy was highly influential in the ancient world, even more so than the philosophies of Plato and Aristotle. It vied with and largely surpassed

Skepticism and Epicureanism for influence, and it maintained a dominant position for nearly 500 years. Panaetius and Posidonius carried on the tradition through the late pre-Christian era, and the Roman Stoics (Seneca, Epictetus, Marcus Aurelius) continued it until almost 200 CE.

Stoicism can be divided into three traditional parts of philosophy: physics, logic, and ethics. These were not three isolated branches of thought; they all addressed *reason in the cosmos*. As A. A. Long says (1974: 119), “the subject matter of logic, physics, and ethics is *one* thing, the rational universe.” Reason (logos) is embodied alike in mankind and in the cosmos. “Cosmic events and human actions are . . . not happenings of two quite different orders: in the last analysis they are both alike consequences of one thing—logos.” (108) Thus, for the Stoics, one cannot learn about mankind without learning about the rational cosmos, nor can one learn about the cosmos without gaining an understanding of humanity.

The Stoic universe consisted of two central principles: the Active and the Passive. The Passive is “primary matter,” the unformed substance of the world. Matter consists of the four Empedoclean elements: earth, water, air, and fire. The four elements, however, are not equally passive; fire and air were considered the relatively active elements, earth and water the more passive. Each pair of elements embodied one of the two central principles.

Furthermore, every actual thing in the world has a “form,” and this form is given to matter by the Active principle. Hence, the Active is a more complex concept than the Passive, and it has a number of interpretations. First of all, the Active is equated with the logos of the universe, the rational principle governing all things. The logos, in turn, is seen as the highest organizing power and thus is equated with god: “. . . the Active is the rational principle [logos] in [the universe], i.e. god” (Diogenes Laertius, 7.134, in Inwood and Gerson 1997: 132). Thus, god is not apart from the cosmos, but is in it, and through it; hence the strong panentheism in the Stoic system. Also, god, because he is the embodiment of reason, is identified with “mind”: “God and mind . . . are one thing, but called by many different names.” (ibid., 7.135: 133)

Also central to Stoicism, and intimately related to the Active principle, was the concept of pneuma. Of the four material elements, fire and air have special standing, since they are the highest, the most refined, and the most active. The importance of fire and air is seen in our own human bodies, wherein warmth and breath are the two primary indicators of life. These two elements, when joined together as pneuma, form the life energy of the universe. Since all things have form, and this form is given to inert matter by the Active, it is clear that pneuma is present in all things. There are, of

course, strong references here to Aristotle's theory of the pneuma. Aristotle died just as Zeno was reaching maturity, and his views would certainly have circulated among Zeno and his followers in Athens. By all appearances, Zeno took Aristotle's late development of the pneuma and elevated it to a central cosmic force.

Pneuma is—like fire itself—active, energetic, and inherent motion. It is a “creative fire,” a *pyr technikon*, that creates and animates the natural world. There are a number of interesting translations of *pyr technikon*. Sandbach (1975: 73) calls it “the god that makes the world” and “fire that is an artificer.” Seneca, in the *Epistles*, refers to it as “creative reason” (Long 1974: 165). Inwood and Gerson (1997: 138) translate it as “craftsmanlike fire.” Then there is a famous and beautiful passage referring to the *pyr technikon* in Diogenes Laertius, which Long translates (1974: 147) as “Nature is an artistic fire going on its way to create.” In *On the Nature of the Gods*, Cicero cites the same passage, informing us that this in fact was Zeno's definition of nature.²¹ This creation of the world is clearly intelligent and mindful, and it demonstrates the god, or logos, in nature. Thus, we see a linkage of several terms—‘active’, ‘logos’, ‘god’, ‘mind’, ‘pneuma’, ‘fire’, ‘*pyr technikon*’—which jointly paint a picture of the cosmos as, in the words of Diogenes Laertius, “an animal, rational and alive and intelligent” (Inwood and Gerson 1997: 135)—and, one might add, divine. Sambursky sums this up nicely (1959: 36):

Pneuma became a concept synonymous with God, and either notion was defined by the other. . . . Natural force (i.e. pneuma) was seen as endowed with divine reason, and pneuma was given epithets like “sensible” or “intellectual,” thus alluding to its god-like nature. . . . [Conversely], God was identified with the all-pervading pneuma, being totally mixed with shapeless matter, and divine reason was defined as corporeal pneuma.

In addition to its cosmic role, pneuma had an important physical meaning. It served a number of functions, each of which supported one aspect of Stoic panpsychism. First, pneuma acts as the cohesive force of the universe. Cicero tells us that “there is, therefore, a nature [*phusis*, i.e. pneuma] which holds the entire cosmos together and preserves it” (quoted in Inwood and Gerson, p. 146). This recalls Anaximenes' view that “our souls . . . being air, hold us together.” Pneuma acts not only on the cosmos but also on individual objects. Referring to its cohesive force, Long (1974: 156) writes: “This function of pneuma in the macrocosm is equally at work in every individual body.” The cohesive force exists in three distinct degrees of intensity, or tension (*tonos*). At the lowest level—that which holds all objects together,

including “inanimate” objects such as stones and tables—it is called *hexis* (condition, state, or tenor). At a higher level, that of living organisms (animals, plants, vegetative life), it is called *phusis* (nature). At the highest level, that of animals and humans, it is called *psyche* (soul). All are *pneuma*, existing in varying degrees of *tonos*. Pseudo-Galen (as quoted in Inwood and Gerson, p. 171) explains it as follows:

There are two forms of the inborn *pneuma*, that of nature [*phusis*] and that of soul [*psyche*]; and some [the Stoics] add a third, that of *hexis*. The *pneuma* which holds things is what makes stones cohere, while that of nature is what nourishes animals and plants, and that of the soul is that which, in animate objects, makes animals capable of sense-perception and of every kind of movement.

Clearly, soul is not attributed to all things, only to animals. Unlike the pre-Socratics, the Stoics had differentiated soul from mind, equating mind with the *pneuma* (which was in all things). Thus, we do not find statements like “Soul moved all things”; rather, we see an intelligent universal force which accounts for motion. Consequently, the Stoics were panpsychists, but of a different type than Plato and the earlier philosophers. And their identification of *pneuma* with mind was a step Aristotle was unwilling to take.

In another role, *pneuma* not only holds things together; it also makes them one thing. It accounts for the unity of being. The unity of a thing is described as that which rules over the object and determines its character. This ruling unity, another important concept in Stoic philosophy, is given a special name: *hegemonikon* (from *hege*, to lead, and *mone*, singular), often translated as “the leading part of the soul.” The *hegemonikon*, like the *pneuma*, is present at all levels of existence. Cleanthes argued that the sun was the *hegemonikon* of the cosmos. Cicero explained the concept as follows:

There is . . . a nature [i.e. *pneuma*] which holds the entire cosmos together and preserves it. . . . For every [natural object] . . . is joined and connected with something else, [and] must have in itself some “leading part,” like the mind in man and in a brute beast *something analogous to mind* which is the source of its desires for things; in trees and plants which grow in the earth the leading part is thought to reside in their roots. By “leading part” I mean that which the Greeks call *hegemonikon*; in each type of thing there cannot and should not be anything more excellent than this. (*On the Nature of the Gods*, 2, 29; quoted in Inwood and Gerson 1997: 146; italics added)

Something mind-like was thus seen as the unifying force in all objects. “The vital function of the *hegemonikon* [is] as the central seat of consciousness” (Sambursky 1959: 22), and thus it is central to the mind-body relationship.

An important issue is whether the Stoics argued for a pure, “pluralistic” panpsychism, or rather for a singular world-soul that differentiated itself into innumerable pieces. The latter view can arguably be classified as a version of pantheism, or even panentheism. But it can also be interpreted as a monistic panpsychism, a weak form of the theory. Regardless, a full reading of Stoic fragments and an analysis of commentaries lead quite strongly to the former view. Long (1974: 154) is clear in his interpretation: “It is misleading to describe the Stoics as ‘materialists.’ Bodies, in the Stoic system, are compounds of ‘matter’ and ‘mind’ (God or logos). Mind is not something other than body but a necessary constituent of it, the ‘reason’ in matter.” Later (171), Long adds: “In Stoic natural philosophy . . . mind and matter are two constituents or attributes of one thing, body, and this analysis applies to human beings as it does to everything else.”

Consider the Stoic fragments. Diogenes Laertius informs us of the Stoic view: “. . . mind penetrates every part of [the cosmos] just as soul does us. But it penetrates some things more than others.” (quoted in Inwood and Gerson, p. 133) This is an interesting comment, as it indicates that mind exists in different degrees, depending on the nature of the thing it penetrates. As to the things in themselves, Cicero clearly states that “the parts of the cosmos . . . contain the power of sense-perception and reason.” (ibid.: 146)—a statement highly suggestive of pluralistic panpsychism. And Cicero reiterates the view, which began with Plato, that the stars individually have souls:

Now that we have seen that the cosmos is divine, we should assign the same sort of divinity to the stars. . . . They too are also said quite correctly to be animals and to perceive and to have intelligence. [And furthermore], the sun too should be [considered] alive. (ibid.: 148–149)

As to the Stoic rationale for this view, Cicero informs us that the “orderliness and regularity of the heavenly bodies is the clearest indication of their powers of sense perception and intelligence,” for “nothing can move rationally and with measure except by the use of intelligence” (ibid.). Other sources confirm these views. For example, Sandbach (1975: 130) attributes to Posidonius the idea that “a ‘life-force’ could be recognized everywhere.” The Stoics employed several extant arguments for panpsychism. The psychic pneuma provides a cohesive force that acts as the seat of consciousness (Indwelling Powers). Pneuma exists in all things, human or otherwise (Continuity). It is the embodiment of the Active principle (First Principles), and it accounts for such physical qualities as unity of form and orderliness of motion (Design). The Stoics were thus thoroughly panpsychist in their

outlook on the world, and they developed a theory of the cosmos that was perfectly compatible with this.

Stoicism held a dominant position in both Greek and Roman society for nearly 400 years after the death of Chrysippus in 206 BCE. The late period of Roman Stoicism peaked with the work of Seneca (1–65 CE) and Epictetus (55–135 CE) and reached a pinnacle of sorts with Marcus Aurelius (121–180 CE), who became Roman emperor in 161 CE and thus could claim to be the first true philosopher-king. Unfortunately, this occurred just as Stoicism's influence began to wane, and so the larger vision of a Stoic society went largely unfulfilled. Aurelius was the last emperor to reign over the peaceful period known as the Pax Romana, and the gradual decline of the Roman empire began shortly after his death. Stoicism yielded to a resurgent interest in Platonic and Aristotelian philosophy, especially in the form of Neo-Platonism, and to the rise of the monotheistic religious worldviews.

2.6 Remnants of Panpsychism in the Early Christian Era

The pre-Christian era acknowledged the presence of spirit and mind in nature. The Christian worldview took spirit out of nature and placed it largely, but ambiguously, within the monotheistic figure of God. It is interesting to examine the concept of spirit in the Biblical tradition, particularly as it pertains to the panpsychist ideas of the Greek philosophers.

A central precept of Christianity is the Trinity: the Father (God), the Son (Jesus), and the Holy Spirit. In both the original Greek of the New Testament and the original Greek translation (from Hebrew) of the Old Testament,²² the word for Spirit is 'pneuma'. Virtually every occurrence of 'spirit' or 'Spirit' is either 'pneuma' or some close variant such as '*pneumatos*' or '*pneumati*'. Spiritual things are *pneumatika*; the spiritual man is a *pneumatikos*. This suggests a connection to Stoic/Aristotelian philosophy, and also to panpsychism.

If there were such a connection, one would expect to find not just the occurrence of the word itself, but also that its usage would be consistent with Stoic principles. For example, one might expect to find such things as (1) 'pneuma' in reference to both air and fire, (2) pneuma as God, (3) pneuma as creative force (recall *pyr technikon*) in the cosmos, (4) pneuma as intelligence or mind, (5) pneuma as life-giving, and (6) pneuma as omnipresent and as "filling" or "penetrating" things.

In fact, there are references to all these Stoic concepts in the Bible. In particular, these are characteristics of the Holy Spirit itself.²³

(1) There are passages in which 'pneuma' plays on its multiple meaning of wind, breath, and spirit: "The wind (pneuma) blows wherever it pleases. . . . So it is with everyone born of the Spirit (*pneumatōs*)." (John 3:8) "The Spirit of God has made me; the breath of the Almighty gives me life." (Job 33:4) Regarding reference to fire, we have the following: "For the Lord your God is a devouring fire." (Deut. 4:24) "Do not put out the Spirit's fire." (1 Thess. 5:19) There is also the incident of the burning bush in which God first speaks to Moses: "And the angel of the Lord appeared to him in a flame of fire." (Ex. 3:2) Wind and fire are combined in Ps. 104: "He makes winds his messengers, flames of fire his servants."

(2) The most explicit identification of God and spirit is found in John 4:24: "God is spirit (*pneuma o theos*), and his worshippers must worship in spirit (*pneumati*) and truth." Pneuma is also equated with deity in Acts 5:3–4 ("a lie to Spirit equals a lie to God") and in 2 Cor. 3:17–18 ("The Lord is the Spirit"). Additionally, one finds that pneuma has a number of God-like attributes and powers; it is omnipresent (Ps. 139:7 ff), self-existent (Rom. 8:2), and involved with the Creation (Gen. 1:2) and the Resurrection (Rom. 8:11).

(3) Pneuma as creative force is found in Gen. 1:2; at the first moment of Creation, we read that "the Spirit of God moved upon the face of the waters" (KJV).

(4) The Holy Spirit has a number of qualities related to intelligence and mind: "The Spirit searches all things, even the deep things of God. . . . No one knows the thoughts of God except the Spirit of God." (1 Cor. 2:10–11) Furthermore, it teaches ("the Holy Spirit . . . will teach you all things"—John 14:26), and it intercedes in prayers ("We do not know what we ought to pray for, but the Spirit himself intercedes for us . . . He who searches our hearts knows the mind of the Spirit, because the Spirit intercedes for the saints"—Rom. 8:26–27). Also, the Spirit can control the human mind (" . . . the mind controlled by the Spirit is life and peace."—Rom. 8:6).

(5) The Spirit gives life; note again the passage in Job cited above: "The Spirit of God has made me; the breath of the Almighty gives me life." And in John 3:6, we have "the Spirit (*pneumatōs*) gives birth to spirit (pneuma)."

(6) Psalm 139 contains passages that describe the omnipresence of the Spirit: "If I go up to the heavens, you are there; if I make my bed in the depths, you are there. If I rise on the wings of the dawn, if I settle on the far side of the sea, even there your hand will guide me." (Ps. 139:7–10) There are numerous references to the Spirit "dwelling in" or "filling" the believer: ". . . the Spirit of God lives in you." (Rom. 8:9) "God's Spirit lives in you."

(1 Cor. 3:16) “. . . the Holy Spirit, who is in you. . .” (1 Cor. 6:19) The Bible also says that believers will “walk in the Spirit” (Ga. 5:16).

Thus, there appears to be good justification for claiming Stoic influence in the Bible, at least within the figure of the Holy Spirit. It is perhaps not surprising, then, that this influence is widely ignored by Christian theologians.

Furthermore, the Bible acknowledges the existence of “other spirits” in the world: Satan, the angels, and other beings, not to mention the many distinct human souls. At the beginning of 1 John 4 we find the following: “Dear friends, do not believe every spirit (*pneumati*), but test the spirits (*pneumata*) to see whether they are from God.” The spirits that fail the test are naturally those “of the Antichrist,” and they must be defeated. So the Bible does convey a world of numerous spirits even as it puts forth a single God. But the spirits are otherworldly, and they are not connected with physical things—except, of course, human beings. Any conception of individual and independent spirits “in things,” not to mention in *all* things, is decidedly anti-Christian.²⁴ Predictably, theologians usually dismiss all references to panpsychism as heathen or pagan primitivism.

One last point on the connections to Stoicism: It is not only *pneuma* that carries over into the Bible. There are also references to *logos* that resonate with Stoic principles. Recall that ‘*logos*’ means reason or intelligence. In the Greek of the New Testament, we also find the word ‘*logos*’, and it is translated as ‘Word’, as in “the Word of God.” At the start of John 1, we learn that “in the beginning was the Word, and the Word was with God, and the Word was God.” This is interesting because it recalls the Stoic conception that *logos* = God. Sandbach (1975: 72) states unequivocally that “God is *logos*.” Other connections between God and *logos* occur at John 1:14, 2 Tim. 4:2, 1 John 1:1, and Rev. 19:13, so this again seems to be an important concept carried over from Stoic philosophy.



Early Christian theology blended with Platonic, Aristotelian, and Stoic philosophy to create a number of new perspectives on philosophy, most notable of which was Neo-Platonism. The third-century-CE founder of this school, Plotinus, combined notions of an ideal Realm of Forms with a monotheistic system in which the One was the divine and mystical source of all existence. The One exhibits a *logos* (reason-principle) as it creates and sustains the natural world.

Plotinus’ central text, the *Enneads*, contains a number of scattered and cryptic references to a panpsychic cosmos. The most relevant of these, as

mentioned earlier, is Ennead VI, 7; here we find his enigmatic discussion on life and soul as existing in all things, both in the physical world and in the “higher realm” of Platonic Forms. Furthermore, he explicitly cites Plato as holding the same view:

. . . in the plant the Reason-Principle . . . is a certain form of life, a definite soul. . . . The growing and shaping of stones, the internal molding of mountains as they rise, reveal the working of an ensouled Reason-Principle fashioning them from within. . . . The earth There [in the Platonic realm] is much more primally alive, . . . it is a reasoned Earth-Livingness. . . . Fire, similarly, with other such things, must be a Reason-Principle established in Matter That transcendent fire, being more truly fire, will be more veritably alive; the fire absolute possesses life. And the same principles apply to the other elements, water and air. . . . It is with this in mind that Plato says there is soul in everything of this [earthly] sphere. . . . It is of necessity that life be all-embracing, covering all the realms, and that nothing fail of life.

In itself, the fact that “Plato says there is soul in everything of this sphere” could be simply a reference to the world-soul notion. Yet it is clear from the context here that Plotinus sees everything individually as alive—the Earth, fire, water, air, and the other elements. And he clearly attributes the same view to Plato. Plotinus’ reference is thus a further confirmation that Plato himself adopted a subtle form of panpsychism, a fact that evidently had some effect on the Neo-Platonist worldview.

Plotinus’ emphasis on the elements and other aspects of nature situates him as an early nature mystic, though only loosely connected to Christianity. A more significant connection between Christianity and nature mysticism is found in the writings of Saint Francis of Assisi (1181–1226). Francis saw the presence of God in all parts of nature, and thus he viewed all things as enspirited beings. He is famous for his love of animals, but he also held insects, plants, and even rocks in highest regard. One of his earliest disciples, Thomas of Celano, wrote of Francis:

When he found many flowers growing together . . . he would speak to them and encourage them, as though they could understand, to praise the Lord. It was the same with the fields of corn and the vineyards, the stones in the earth and in the woods, all the beauteous meadows, the tinkling brooks, the sprouting gardens, earth, fire, air and wind. . . . He was wont to call all created things his brothers and sisters. (cited in Armstrong 1973: 9)

Armstrong (1973) further refers to Saint Bonaventure’s accounts in *The Mirror of Perfection* as evidence of Francis’ “being caught up in ecstatic contemplation of inanimate as well as animate things of God’s creation” and “thus [treating] even inanimate things as, to all intents and purposes,

children of God" (ibid.: 10). White (1967: 1207) observes that "[Francis'] view of nature and of man rested on a unique sort of panpsychism of all things animate and inanimate." Finally, Francis' famous "Canticle of the Sun" (also known as "Canticle of the Creatures") is a short but passionate ode to the Sun, the Moon, Wind, Air, Water, and Fire in which each of them is treated as an animate "Brother" or "Sister," and the planet is called "Mother Earth."

Francis was not a studious monk, and thus it seems unlikely that he read anything of Plotinus, let alone Empedocles (who also saw the elements as ensouled). As far as we know, he came upon this reverence for nature through some mystical or divine inspiration. Yet this kind of panpsychic view bordered on heretical pantheism. Christian theologians throughout history have had difficulty explaining how Francis' beliefs were compatible with traditional doctrine.

Francis was apparently the first religious figure to employ a belief in the Christian God on behalf of a form of panpsychism. This strongly anticipated the work of Campanella, who argued from a similar basis for his panpsychic beliefs (see chapter 3). But Francis did not lay down a systematic philosophy of spirit in nature, so it is more correct to attribute such a "theological argument" for panpsychism to Campanella.

By the thirteenth century, Christian theology had begun to dominate Western philosophical views. Francis' beliefs notwithstanding, panpsychist or pantheist ideas were largely pushed from the mainstream. If the matter was given any consideration at all, it was rather abruptly dismissed.

Francis' contemporary Aquinas is a case in point. His massive *Summa Theologiae* (ca. 1260) contains just a single brief discussion of the question "What things have life?" (question 18, part 1a). Summarizing the opposing hylozoist position, Aquinas (citing, appropriately, Aristotle) presents three distinct arguments:

For Aristotle says that motion is a kind of life possessed by all things that exist in nature. But all natural objects participate in motion. Therefore all natural objects participate in life.

Further, plants are said to live because [they undergo] growth and decrease. But local movement [i.e. locomotion, or physical displacement] is more perfect than that. . . . Since, then, all natural bodies have in themselves a principle of local movement, it would seem that all natural bodies have life.

Further, amongst natural bodies the elements are the less perfect; but life is attributed to them: e.g. we speak of "living water". Therefore *a fortiori* other natural bodies have life.

“On the other hand,” Aquinas then cites Pseudo-Dionysius as saying that “plants live with life’s last echo,” interpreting this to mean that nothing lower than plants is alive. Aquinas completes his discussion by defining life much as Plato defined soul: as self-generating motion. Animals and plants have this power and thus are alive. Inanimate natural bodies, such as flowing waters and moving stars, have only the “appearance of self-movement.” They are in fact moved by something else (“the cause which produces them”), not “from themselves.” Hence, we call inanimate moving objects “living” only “by a metaphor,” or “by analogy.” This is clearly approaching a modern definition of life. And Aquinas is committed to the Christian view of the soul, something only humans possess. God, furthermore, is not a world-soul but a supernatural deity. Thus, Aquinas sees no reason to accept any view approximating panpsychism. This, then, is the standard Christian position, essentially unchanged for nearly 800 years.

3 Developments in the Renaissance (Sixteenth- and Seventeenth-Century Europe)

3.1 Transition to the Renaissance

From about the third century CE onward, Christian monotheism grew steadily in power and influence. Stoic and other pre-Christian influences in the Bible were gradually buried beneath a growing orthodox theology. The faith-based Christian worldview first competed with and then surpassed the older Greek worldview, which was based on reason and logic. Monotheism was in direct conflict with panpsychism, and thus it effectively suppressed any advances in panpsychist philosophy. The Christian worldview, along with aspects of Aristotelian natural philosophy, dominated Western intellectual thought for about 1,300 years.

A new worldview emerged at the time of the Renaissance. The religious worldview had reached its peak of influence, and its position as the leading social influence began to wane. The new worldview was a system based not on divine scriptures but on empirical observations of nature and on rationalist introspection into the essence of reality. It saw the world once again as regular, rational, and knowable. It applied new techniques in mathematics to natural phenomena, and perceived a new kind of order in the universe. The regularity and predictability led to a new phenomenon: mankind's tendency to control and manipulate the things around him. This new vision of the cosmos has come to be known as the Mechanistic Worldview. Its central metaphor was to see the cosmos as a *clockwork mechanism*, a *machine*—consistent, predictable, and comprehensible, even though (perhaps) constructed by a Supreme Creator whose nature was necessarily of an entirely different sort.

Throughout the emergence and rise to power of the Mechanistic Worldview, there was a persistent countercurrent of thought that was non-mechanistic. This line of thinking saw the universe as animated throughout, as possessing mind, sensitivity, and awareness. It was explored,

developed, and promoted by some of the greatest thinkers of the time. Empirical science did nothing to dissuade panpsychist philosophers from this view, and in fact more often served to support it. Even some of the founders of mechanistic philosophy, those thinkers who we most associate with advancing this new worldview, harbored doubts about viewing matter as inherently dead, inert, and insensate.

In the sixteenth and seventeenth centuries, several major philosophers advocated or were strongly sympathetic to panpsychism.¹ These individuals include Paracelsus, Cardano, Telesio, Patrizi, Bruno, Campanella, Henry More, Margaret Cavendish, Spinoza, and Leibniz. In that era, in which the dominant worldview was moving from Christianity to mechanism, panpsychism found sympathy in neither sphere. To the leading theologians it was heresy, and to the founders of mechanism it was largely (though not entirely) irrelevant. Advocating views that were fundamentally opposed to mechanism and (especially) Christianity was hazardous; it could mean anything from a sullied reputation to personal ruin, imprisonment, or death. Thus, a panpsychist position had to be well thought out and deeply held.



The Renaissance was both a rebirth and a reawakening of philosophy. The religious worldview had begun to play itself out as the dominant interpretation of the universe, and a new vision of nature and mankind was emerging. While still important in personal, cultural, and governmental matters, religion was proving increasingly unable to explain the events of the natural world. Ficino kept God in his hierarchical system, but he placed the soul at the center and described it as radiating out into all aspects of reality. Similarly, other central thinkers, especially in the sixteenth century, denied not God but rather religion's claim to be the sole purveyor of truth.

The alchemists of the fourteenth and fifteenth centuries made considerable progress in revealing the capabilities and powers of material substances. While not denying God, they relied primarily on new empirical procedures that demonstrated the potency and energy inherent in elemental matter itself. Of particular note is the work of Paracelsus (1493–1541). Equal parts alchemist, physician, and philosopher, his view of the macrocosm/microcosm analogy imputed all properties of the one to the other. Thus mankind, having life and intelligence, was to be seen as reflected in the larger natural world. Paracelsus seems to have held to a form of spirit-matter parallelism in which all things possessed a “life spirit” that was connected with elemental air. He wrote:

None can deny that the air gives life to all corporeal and substantial things. . . . The life of things is none other than a spiritual essence, an invisible and impalpable thing, a spirit and a spiritual thing. On this account there is nothing corporeal but has latent within itself a spirit and life. (Paracelsus 1894: 135)

Paracelsus' panpsychist/hylozoist view accounted for variations in spirit by the corresponding variations in physical nature. As he said, "it is evident that there are different kinds of spirits, just as there are different kinds of bodies" (ibid.) These different spirits accounted for the differing "life" of material substances. Paracelsus gives a lengthy account of the life of various things, including salts, gems, metals, minerals, roots, "aromatic substances," "sweet things," resins, fruits and herbs, wood, bones, and water (ibid.: 136–137). This kind of spiritual empiricism established the background for the emerging philosophy of the Italian Renaissance. This "new philosophy" of Italy is typically referred to as *Renaissance naturalism*. The first five panpsychist philosophers of this era—Cardano, Telesio, Patrizi, Bruno, and Campanella—were Italians. All born in the sixteenth century, they were among the leading intellectual figures of their age. All disdained the standard theology, all opposed the dominance of Aristotelianism and scholasticism, and all looked to nature for insights into reality.

3.2 Four Italian Naturalists: Cardano, Telesio, Patrizi, and Bruno

Girolamo Cardano (1501–1576) was the first of the Italian naturalists to put forth an unambiguous panpsychist philosophy. Born in Milan, he was a renowned mathematician and physician, a prolific writer and inventor, and a student of ancient philosophy. Stoicism affected both his metaphysical and his ethical beliefs. He studied Plato and Aristotle. Ultimately he sided with the Platonists in rejecting the Aristotelian picture of the universe.

Cardano's conception of panpsychism is spelled out in *De natura* (On Nature) and *De subtilitate* (On Subtlety), works in which he describes his theory of soul (anima) and its central role of maintaining the unity of all bodies. Soul is one of five universal qualities: ". . . there are . . . five basic principles of natural things: matter (*hyle*), form, anima, place, and motion" (1550/1934: 116). But anima clearly has a central role: "[Bodies] are generated from matter and form, and are controlled by the anima, which in the higher types of beings is mind separate from body; in association with [living] bodies . . . it is the principle of life." (117) Here we see the Aristotelian influence both in the emphasis on form and in the distinction between mind and soul; all things have soul, but only the higher forms (i.e. humans) have mind. Cardano also appeals to the Indwelling Powers argument.

Following the ancient Greeks, he refers to the quality of motion, with soul as its cause: “. . . universally there must exist a certain anima . . . because a source of motion seems to exist in every body whatsoever” (87).

Cardano’s other Greek influences also reveal themselves in his writings. First there is his theory of the “active” (heat) and the “passive” (prime matter in *De natura*, and “moisture” in *De subtilitate*), which is strongly reminiscent of Stoicism. Stoic influence is also found in Cardano’s reference to the pneuma, the “vital spirit” that circulates in the animal body and gives it life. Empedocles’ concept of Love and Strife as the two fundamental forces in the universe is reflected in Cardano’s “sympathy” and “antipathy.” According to Fierz (1983: xvii), “the main principle underlying [hidden] relationships is the sympathy and antipathy of all things, which partake in a common life.” Cardano does make a slight break with Empedocles, Aristotle, and the Stoics, arguing against the designation of fire as an element. To him fire is heat, the active principle, which acts on the passive (matter and moisture) to produce form. This is a general ontological principle, and hence for Cardano “all permanent bodies, including stones, are always slightly moist and warm and of necessity animate” (ibid.: 66).

Cardano envisioned soul as connected to matter but as set apart or distinct from it. “Moreover,” he wrote, “anima, matter, and form all necessarily have body, and yet anima does not seem to be a part of body.” (1550/1934: 117) Soul (like matter and form) is connected to material objects, but is not itself material. This points toward a form of panpsychic dualism.



Cardano seems not to have left much of a direct philosophical legacy. His contributions are acknowledged today, but Renaissance philosophers were apparently not directly influenced by him, as we see little citation of his work.² Such was not the case with Bernardino Telesio (1509–1588). Born eight years after Cardano, Telesio left a lasting imprint on Western philosophy, primarily through Bruno, Campanella, Bacon, and Hobbes. Hoeffding (1908: 92) called Telesio’s work “the greatest task undertaken by thought in the sixteenth century.” It struck out against the dominance of Aristotle and the Scholastics. Even more so than Cardano, Telesio relied on insights from nature to form his philosophy. Experience became a crucial aspect of inquiry, and the cornerstone of all true knowledge.

Telesio was not a prolific writer. He produced only one complete book, *De rerum natura* (On the Nature of Things). The first edition, published in 1565 under a slightly different title, was revised in 1570 and then enlarged for a

third and final release in 1586. In this work Telesio overthrew the Aristotelian emphasis on matter and form and replaced it with an Empedoclean (and modern) conception of matter and *force*. Like Empedocles, Telesio saw two fundamental and opposing forces in the universe: Heat (an expanding and motive principle) and Cold (a contracting principle). These forces act on and shape the “third principle,” passive matter, which is associated with the earth. Thus, for Telesio all things consist of an active energy component (in the Heat/Cold principle) and a mass component (in the passive matter of the earth). As he rather poetically says in *De rerum natura*, “all things [are] made of earth by the sun; and that in the constitution of all things the earth and the sun enter respectively as mother and father” (1586/1967: 309).

In addition to acting as material forces, Heat and Cold had the remarkable quality of perception. They necessarily tended to preserve themselves, particularly in the face of the other. Heat, insofar as it tends to stay hot, must somehow sense and know Cold, and repel it. Likewise with Cold. Heat and Cold must possess the power to *sense*, to perceive, or else they simply could not exist. “It is quite evident that nature is propelled by self-interest.” (ibid.: 304) Self-preservation demands sensation.

All material objects embody the active principles of Heat and Cold. Therefore, all things must contain the power of perception. This is the basis for Telesio’s pansychism. More properly, we refer to his position as *pansensism*—the view that everything is capable of sensation.

Telesio used two existing arguments to support his pansensist view. The first was the argument that originated with Empedocles, the First Principles argument. The ability to sense is for Telesio a fundamental quality of the universal principles of Heat and Cold; pansensism is a part of his very definition of the world. Second, he applied the Non-Emergence argument of Epicurus. Hoeffding (1908: 97) summarized this position as “nothing can give what it does not possess.” Telesio claimed that it was inconceivable that mind should emerge from within matter unless it was there in some degree already. Hoeffding informs us that “[Telesio maintains] the impossibility of explaining the genesis of consciousness out of matter, unless we suppose matter to be originally endowed with consciousness” (ibid.). Emergence is impossible, and mind (or soul) is seen as inevitably present in the very structure of the cosmos—hence a link to the argument by First Principles.

And Telesio, like Cardano, was strongly influenced by Stoicism. His distinction between active (heat and cold) and passive (matter) is one example. More important was his conception of soul, which has many similarities to the Stoic *pneuma*. Both entities were seen as corporeal, each

existing as a substance of “extreme tenuity and subtlety” (Telesio 1586/1967: 305). Soul, like the pneuma, pervaded all things. And like pneuma, it is the embodiment of the active principles. There is one important difference: soul “possesses, besides sensation, the faculty of memory or retention” (Kristeller 1964: 100). This is significant because it is the first instance of memory playing a role in a metaphysical system; it can be read as an early anticipation of Bergson’s philosophy. It is not clear how Telesio intends us to take his concept of memory—as “persistent record of past experiences” (a less demanding form of memory), or as “ability to recall” (a more demanding form). But the mere fact that he was the first to recognize the significance of memory is noteworthy.



Francesco Patrizi (1529–1597), like the other Italian naturalists, professed a deep dislike of Aristotelian philosophy and sought to place Platonism on at least an equal footing. In 1578, in recognition of his efforts, he was appointed to the world’s first chair of Platonic philosophy, at Ferrara. Patrizi, also a humanist and a poet, exchanged philosophical letters with Telesio. His lyrical view of the world is reflected in his most important philosophical work, *Nova de universis philosophia* (New Philosophy of the Universe), in which he introduced the term ‘panpsychism’ (in archaic form) into the vocabulary of Western philosophy.

The *Nova philosophia* is a wide-ranging metaphysical treatise that lays out Patrizi’s theories of light, of the soul, and of first principles of the cosmos. It is organized in four sections: “Panaugia” (“The All-Light”), “Panarchia” (“The All-Principles”), “Pampsychia” (“The All-Souls”), and “Pancosmia” (“The All-Cosmos”).

“Pampsychia”³ is of primary interest here, as it focuses on Patrizi’s interpretation of Plato’s world-soul and its particular manifestations in the natural world. In Patrizi’s cosmological hierarchy there are nine levels or grades of being, with soul (*anima*) falling in the middle and central position, much as it did for Cardano. The nine levels of being⁴ are all fundamentally connected in what Brickman (1941: 34) described as a deeply participatory process:

These nine grades are linked by a process of “partaking of one another”—*participatio*. This “partaking” Patrizi describes as an “inter-illumination,” through which beings are illuminated, come into existence, and are known. . . . Every grade partakes of each of those above it . . . and is also partaken of by each grade below it according to the capacity of the latter. Each grade . . . is [at once] a “partaker” (particeps), and is “partaken of” (participatus).

Here Patrizi is echoing the language of participation as found in Neo-Platonism, especially in the work of Proclus and Pseudo-Dionysius. Such terminology builds on Plato's use of "participation" as the means by which the phenomenal world interacts with the Forms.⁵

Soul, at the center of this participatory hierarchy, played a major role in mediating between the spiritual (four upper grades) and the earthly (four lower grades) realms. It is clear that soul, in the form of the world-soul, penetrates all levels of being. The question, as before, is whether the individual objects of the world possess souls in themselves (true panpsychism) or whether they are merely an extension of the one world-soul. Patrizi clearly endorsed the former view. He saw soul as a manifold entity, present both as distinct individuals and as united in the comprehensive world-soul. Kristeller (1964: 122) writes that "Patrizi does not treat the individual souls as [mere] parts of the world soul, but believes, rather, that their relation to their bodies is analogous to that of the world soul to the universe as a whole." In the words of Brickman (1941: 41), soul is "both [unity and plurality], with the many contained in the one."

Patrizi was the first to directly attack Aristotle's logic regarding panpsychism, a position that would be reiterated later by both Bruno and Gilbert. (All three men focused their criticism on Aristotle's definition of psyche; they seem to have been unaware of his broader theory of the pneuma.) As has been noted, Aristotle believed the stars and heavenly bodies were animate, but he granted psyche to nothing in the earthly realm save plants and animals. Patrizi saw this as a logical inconsistency. On the one hand, the Peripatetics defined soul as the motive force behind a living, organic body. On the other hand, Aristotle himself stated that stars were ensouled even though they were not organic (i.e., they were without organs). One of the two must be wrong. Taking Aristotle's implicit definition, Patrizi argues that "being organic" is not a prerequisite for having a soul, so it is certainly possible that the cosmos as a whole, as well as the basic elements of matter that constitute it, also have souls.

Patrizi then runs through a series of brief arguments⁶ in support of his panpsychism: (1) How do we know that the elements do not have organs of some sort? If they do, then this is a further argument on behalf of their souls ("Design"). (2) The cosmos is clearly the most perfect thing there is, and any perfect thing must have a soul or it would be less than perfect; therefore the world-soul exists ("Design"). (3) The elements give life and soul to all beings which have it, and nothing can be in the effect that is not in the cause; therefore, the elements must have souls ("Non-Emergence"). (4) All the parts of the world experience birth, change, and destruction, yet

they still somehow hold together and persist; this cannot happen without soul (“First Principles”).

Patrizi’s themes, like Cardano’s, were expanded on by later philosophers, and the development of his participatory ontology set the stage for the advances made by Bruno and Campanella.



Apart from Telesio, the other great philosopher of southern Italy was Giordano Bruno (1548–1600). Bruno’s philosophy was rooted in his cosmology. The standard picture of the cosmos in the sixteenth century was essentially the same one Aristotle had formulated nearly 2,000 years earlier, and the same that Ptolemy had formalized. The universe was a finite space with the Earth at the center, and the stars and other heavenly bodies circulated around us on the celestial spheres. Throughout the centuries, a few thinkers had postulated that the universe might actually be infinite. As early as 300 BCE, Epicurus reasoned that the universe must be limitless: “The totality of things is unlimited . . . and having no limit, it must be infinite and without boundaries.” (Letter to Herodotus, 41–42) In the first century BCE, Lucretius, continuing in this tradition, wrote the following:

The All that Is, wherever its paths may lead, is boundless. . . . There can be no end to anything without something beyond to mark that end. . . . Nor does it matter at which point one may stand: whatever position a man takes up, he finds the All still endless alike in all directions. (1977: 23; book I, 957–967)

Closer to Bruno’s time, the neo-Platonist philosopher Nicholas of Cusa (1401–1464) also discussed the possibility and significance of an infinite cosmos. Then came Copernicus’ *De revolutionibus*, published upon his death in 1543, which placed the sun at the center of the cosmos and the Earth in orbit around it. For this, Copernicus is justly famous. But he still maintained that the universe was finite, and that the celestial spheres circled around the solar system; in this sense he was less revolutionary than is commonly believed.

Bruno gathered these insights from Epicurus, Cusa, and Copernicus and pieced together a strikingly modern picture of the cosmos. His universe was an infinite space composed of infinitely many solar systems like our own. He was one of the first to use modern terminology, reserving ‘world’ for the planet Earth (and other planets), and using ‘universe’ to mean the whole infinite cosmos (that which had been called the ‘world’ by previous philosophers). Bruno saw neither the Earth nor the sun as the center of the universe; like Lucretius, he realized that in an infinite cosmos, *every place*

would appear as the center: “. . . the Earth no more than any other world is at the center. . . . The Earth is not in the center of the universe; it is central only to our own surrounding space.” (1584b; cited in Singer 1950: 58) Thus, Bruno “was already envisaging modern views of the physical universe” (Wright 1947: 31).

From this cosmology Bruno drew philosophical and metaphysical implications. He realized that there was an aspect of relativity to the cosmos. If the universe was, in a sense, the same throughout, then the same rules must apply everywhere. Hoeffding (1908: 124–126) stated that in Bruno’s cosmology “every determination of place must be relative. . . . From the relativity of [place and] motion follows the relativity of time. . . . Nor have the concepts of heaviness and lightness any . . . absolute significance. . . . Nature is everywhere essentially the same . . . [and] the same force is everywhere in operation.”

Bruno’s panpsychism followed directly from his metaphysics, and hence he adopted a First Principles standpoint. Nature has two internal constituent principles: form and matter. He takes this conventional Aristotelian conception and interprets it in a Platonic/Plotinian manner. In particular, form is to be considered as produced by soul, i.e. the world-soul: “Bruno asserts that . . . every form is produced by a soul. For all things are animated by the world soul, and all matter is everywhere permeated by soul and spirit.” (Kristeller 1964: 133)

Bruno’s panpsychism is developed primarily in *De la causa, principio, et uno* (Cause, Principle, and Unity) and in *De l’infinito universo et mundi* (On the Infinite Universe and Worlds). Both were published in 1584, just after Bruno’s notorious visit to Oxford. Both were written in dialogue form, in the fashion of Plato.

It is in *De la causa* that Bruno states his view most clearly. In the second dialogue, the characters are elaborating on the animated nature of the cosmos. Bruno writes that “there is no philosopher enjoying some reputation . . . who does not hold that the world [here, the universe] and its spheres are animated in some way” (1584a/1998: 42)—an exaggeration, perhaps, yet Bruno is acknowledging that panpsychism runs deep in Western philosophy. He then stresses the central aspect of ancient and medieval panpsychism: it is not only the world-soul that is animate; all things individually are animate too. This view is reiterated in another of his works, *De magia*:

It is manifest . . . that every soul and spirit hath a certain continuity with the spirit of the universe. . . . The power of each soul is itself somehow present afar in the universe [and is] exceedingly connected and attached thereto. (*De magia*, cited in Singer 1950: 90–91)

The souls of individual things are at once distinct yet connected to the universal soul. In *De la causa* Bruno states that “not only the form of the universe, but also all the forms of natural things are souls” (1584a/1998: 42). Thus, he generalizes Aristotle’s view—that soul is the form of *living* bodies—to all physical bodies. It is interesting that he then acknowledges the unconventionality of this view. The character Dicsono says: “Common sense tells us that not everything is alive. . . . Who will agree with you?” Teofilo, speaking for Bruno, replies: “But who could reasonably refute it?” Following Patrizi’s criticism, Bruno offers a “proof” that focuses on the world-soul and the parts of the universe that are possessed by it. As previously discussed, Aristotle attributed soul to the stars and heavenly bodies. Bruno, like Patrizi, considered it terribly inconsistent to hold that certain parts of the cosmos were privileged to have a soul and others were not. Thus, in keeping with his rule that the same laws apply throughout the universe, he logically concluded that all things, all “parts,” must be animated: “. . . there is nothing that does not possess a soul and that has no vital principle” (ibid.: 43).⁷ A skeptical Polinnio retorts: “Then a dead body has a soul? So, my clogs, my slippers, my boots . . . are supposedly animated?” Teofilo (Bruno) clarifies his position by explaining that such “dead” things are not necessarily to be considered animate in themselves, but rather as containing elements that either are themselves animate or have the innate power of animation:

I say, then, that the table is not animated as a table, nor are the clothes as clothes . . . but that, as natural things and composites, they have within them matter and form [i.e. soul]. All things, no matter how small and minuscule, have in them part of that spiritual substance. . . . For in all things there is spirit, and there is not the least corpuscle that does not contain within itself some portion that may animate it. (ibid.: 44)

This distinction anticipates the views of both Leibniz and the twentieth-century process philosophers (Whitehead, Hartshorne, Griffin, et al.), who also deny mind to inanimate material objects but grant it to atoms, molecules, cells, and other “true individuals.”

Bruno’s line of thinking hints at the Indwelling Powers argument of Plato and the pre-Socratics. Matter either is animate outright or has the *power* to animate. We get a further indication of this when Bruno speaks of “the spirit, the soul, the life which penetrates all, is in all, and moves all matter” (ibid.). As with the Greeks, soul has the power not only of animation but also of motion. This power is visible in the motion of the Earth, the stars, and other worlds, which have souls and are moved by them. In

pressing his case that the Earth is ensouled, Bruno even makes a passing reference to a version of the Continuity argument when he compares the structure of the Earth to that of a person: “. . . it is evident that waters exist within the earth’s viscera even as within us are humors and blood” (1584b/1950: 315).

Two other aspects of Bruno’s thought are relevant here. The first is his concept of the monad. Bruno clearly was an atomist, and he believed that there existed some ultimately small and simple element of matter; he referred to these variously as atoms, minima, or monads. Unfortunately, Bruno was not entirely clear or consistent in his definitions of these monads; hence we see discrepancies on the part of modern commentators. Sometime the monads are material entities (“the substance for the building of all bodies is the minimum body or the atom”—*De minimo*, cited in Singer 1950: 74). Other times they are something more ephemeral and mysterious; Singer describes them as “a philosophical rather than a material conception” and says that they “have in them some of the qualities of the whole” (*ibid.*: 72). Hoeffding (1908: 138) stated that monads are “also active force, soul, and will.” The monad is not only an ultimate element of smallness; it is more generally a *unity*, and may equally apply to large-scale objects. Hoeffding elaborated: “. . . the sun with its whole planetary system is a minimum in relation to the universe. Indeed, even the whole universe is called a monad. . . . The world-soul too, even God himself, is called a monad.” (138–139)

Bruno is sometimes credited with creating the concept of the monad, but the philosophical usage of the term goes back at least to Plato. The word ‘monad’ comes from the Greek ‘*monas*’ (unity). Xenocrates made the monad (along with the dyad) a first principle of metaphysics. More important, he identified the monad with a self-contemplating intellect or nous.

The other important topic is Bruno’s theory of matter. He saw matter as one substance that exhibited two modes: *potenza* (power), and *soggetto* (subjectivity). The power aspect of matter is revealed in its potential to act, i.e. to exist, or to be. “Being” is power, and power is the material aspect of matter—a clear connection to the concept of energy. Bruno’s other mode, subjectivity, can be seen as a manifestation of the soul in matter. This subjectivity determines the inherent nature of a thing, and distinguishes it uniquely from all other things. In short, *potenza* and *soggetto* represent the physical and mental modes of matter, respectively. Such a dual-aspect ontology is again a form of dualistic panpsychism, and it anticipates the later developments of Campanella and Spinoza.

Bruno had a substantial influence on subsequent philosophers. Leibniz is a clear successor, particularly with his conception of monads that so closely resembled Bruno's.⁸ Spinoza, Goethe, Herder, and Schelling all were influenced by Bruno's system.⁹ Even his implication of the will as an aspect of the monad (see Hoeffding) anticipated the important advances of Campanella, Leibniz, Schopenhauer, Hartmann, and Nietzsche.

3.3 Gilbert and the Soul of the Magnet

Renaissance naturalism was not the only development in panpsychist philosophy in sixteenth-century Europe. Also of significance was *De magnete* (On the Magnet), by the Englishman William Gilbert (1540–1603). The first modern scientific work, *De magnete* is a detailed and technical study of magnets and their properties. In it Gilbert sought to summarize and clarify all previous knowledge of lodestones, from the time of Thales on. He introduced the concept of magnetic poles and showed how they align with the magnetic poles of the Earth. Galileo, impressed by Gilbert's work, deemed it "great to a degree that is enviable."¹⁰

Most of Gilbert's experiments were performed on a spherical lodestone that he called a *Terella* (little Earth). Gilbert demonstrated that this little Earth duplicated the properties of the real Earth, and he argued, correctly, that the lodestone was given its power by the Earth. (The natural field of the Earth magnetizes certain iron ores in the crust.)

From a panpsychist point of view, the most striking thing about *De magnete* is Gilbert's Thalesian attribution of soul and other mental traits to magnets. Writing on the attractive power, he refers to the "friendship of iron for the lodestone" (1600/1958: 50). In noting that a magnet can magnetize a neutral piece of iron (in fact, limitless pieces) by mere contact, Gilbert refers to it as an awakening: ". . . the dormant power of one is awakened by the other's without expenditure" (62). Gilbert sees the powers of the magnet as evidence of "reason" in a stone, just as the Greeks saw reason as guiding the movements of planets and stars. In possessing reason, the magnet is something akin to the human being:

. . . if among [material] bodies one sees [anything whatsoever] that moves and breathes and has senses and is governed and impelled by reason, will he not, knowing and seeing this, say that here is a man, or something more like man than a stone or a stalk? (66)

Near the end of *De magnete*, Gilbert makes clear his view that "the magnetic force is animate, or imitates a soul; in many respects it surpasses the

human soul" (308). He characterizes the magnetic force as the single clear piece of scientific evidence that all objects, especially planets and stars, have souls and minds: ". . . we deem the whole world [universe] animate, and all globes, all stars, and this glorious earth, too" (309).¹¹ Like Bruno and Patrizi, he assailed the logical inconsistency of Aristotle. For Gilbert, the Aristotelian cosmology was a "monstrous creation, in which all [celestial] things are perfect, vigorous, animate, while the earth alone, luckless small fraction, is imperfect, dead, inanimate, and subject to decay" (ibid.).

Gilbert does not provide much more in the way of *philosophical* argumentation for his view, evidently believing that the amazing powers of magnets and the magnetic force were sufficient proof. He does briefly run through some of the standard arguments. He cites the ancient notion that "not without a divine and animate nature could movements [of stars and planets] so diverse be produced" (argument by Design). He claims that the celestial bodies are perfect and must therefore necessarily have souls because "nothing is excellent, nor precious, nor eminent, that hath not a soul" (First Principles). He notes that the Earth (and the Sun) can give their magnetic soul power to other objects, and consequently "it is not likely that they can do that which is not in themselves; but they awaken souls, and consequently are themselves possessed of souls" (Non-Emergence).¹² And his related observation that one magnet has the power to magnetize another piece of metal is a form of the Indwelling Powers argument. It is significant that Gilbert, acknowledged as one of the first modern scientists, relied on panpsychist ideas in formulating his explanation of empirical phenomena.

3.4 Campanella and the Seventeenth Century

Moving now into thought that is more representative of the 1600s, we find an emerging scientific and objectivist worldview competing with the naturalistic and panpsychic theories of the Renaissance. The early rationalism and empiricism led the departure from Scholasticism and Church orthodoxy. This new rationalism of the sixteenth century was open to panpsychist interpretations of the cosmos. But by the seventeenth century it began to harden into an objectivist mechanism.

With respect to philosophy of mind, the seventeenth century was dominated by two of the most notable panpsychist philosophers in history, Spinoza and Leibniz. Additionally, Bacon and Hobbes had some suggestive comments on the matter of pansensism that will be examined. Also of note are the ideas of some lesser-known yet important figures, including

Margaret Cavendish and Henry More. Even Locke and Newton made some interesting statements. The beginning of the seventeenth century was marked, though, by the culmination of Renaissance naturalism in the philosophy of Campanella.

Tommaso Campanella (1568–1639) was the last great Renaissance philosopher. His philosophy was marked by his strong opposition to Aristotle and his equally strong embrace of Telesio. His two major works are *De sensu rerum et magia* (On the Sense in All Things and Magic), written in 1590 but not published until 1620, and *Metafisica*, published in 1638.

Like the other Renaissance naturalists, Campanella emphasized an empirical approach to knowledge, but not in the restricted sense of the British empiricists. Rather, he combined experiential knowledge of nature with metaphysical first principles to form a complete philosophical system. This system was centered on his theory of the three “primalities,” which lay at the core of his pansychism.

Campanella’s doctrine of the primalities, one of the more original elements of his philosophy, pervades his entire system of thought. It claims that the essence of being consists of three fundamental principles: *power*, *wisdom* (or knowledge, or sense), and *love* (or will). These three are aspects of all things, from a simple rock to God himself. Such characteristics had long been attributed to God—in the form of omnipotence, omniscience, and omni-benevolence—but Campanella was the first to make them universally applicable.

For Campanella, *potentia* (power) has three connotations: (1) the power “to be” (*potentia essendi*), (2) the power “to act” (*potentia activa*), and (3) the power “to be acted upon” (*potentia passiva*). The power “to be” is the first and the foremost of these, as it is the source of all existence; without the *potentia essendi* a thing simply would not exist. Furthermore, existence demands the ongoing presence of this power in order to allow persistence through time; this is a power that is “needed for being” (Bonansea 1969: 150). The powers “to act” and “to be acted upon” are related to Campanella’s theory of knowledge, and involve the ability to communicate the likeness of one thing to another, as discussed below.

That power is the preeminent principle of existence is an advance from the Telesian conception of Heat and Cold, but it retains the essential reference to the idea of energy. And ‘energy’ and ‘power’ were virtually synonymous in the sixteenth century, before the notion of power as the time rate of change of energy arose. Also, the *potentia essendi* anticipates very recent theories of systems, particularly the idea of a “dissipative structure” as an entity that requires power to maintain its existence.

The second primality is *wisdom*, or *knowledge*. Campanella argued that, because all things sense, they can be said to “know,” and consequently they possess a kind of wisdom. First and foremost, things know themselves. Each thing knows of its own existence and its own persistence over time:

All things have the sensation of their own being and of their conservation. They exist, are conserved, operate, and act because they know. (1638, cited in *ibid.*: 156)

“Every individual being,” Hoeffding explained (1908: 153), “has an ‘original hidden thought’ of itself, which is one with its nature.” The same idea is explicit in the subtitle of Campanella’s *De sensu rerum*:

A remarkable tract of occult philosophy in which the world is shown to be a living and truly conscious image of God, and all its parts and particles thereof to be endowed with sense perception, some more clearly, some more obscurely, to the extent required for the preservation of themselves and of the whole in which they share sensation. (1620; cited in Bonansea 1969: 156)

This “remarkable” subtitle captures many aspects of Campanella’s philosophy in a single sentence.

Campanella offered a number of arguments in support of his panpsychism as embodied in the primality of wisdom. These tend to take the form of arguments by First Principles (e.g. knowledge is required for self-preservation, all things must have active power), but Campanella also employed the ancient Non-Emergence argument:

. . . if the animals are sentient . . . and sense does not come from nothing, the elements whereby they and everything else are brought into being must be said to be sentient, because what the result has the cause must have. Therefore the heavens are sentient, and so [too] the earth. . . . (1620, cited in Dooley 1995: 39)

Campanella did, however, introduce a new form of the Design argument for panpsychism, one that we may call the *Theological Argument*. He claims that, in the words of Bonansea,

all beings . . . carry within themselves the image or vestige of God and are essentially related to one another. . . . [God clearly possesses sensation and wisdom, and so] sensation is therefore to be extended to all beings. (1969: 157)

It is significant that Campanella saw all things as participating in God, and thus sharing his qualities. The Theological argument is in fact applied to all three primalities: “Campanella holds that God . . . in effusing Himself into creatures, communicates to them power, knowledge [wisdom], and love, so that they may exist.” (*ibid.*: 145) It is interesting that Campanella, a devout Christian, would look to God as justification for his panpsychism.

Perhaps he thought this would placate the Inquisition. Unfortunately, the Church was beginning to feel the pressure of the new naturalist philosophy, and so it struck back hard. At about the same time that Bruno was burned alive, Campanella, at the age of 32, was imprisoned by the Inquisition and served 27 years in prison for his beliefs. Fortunately, he was able to continue writing, and even to smuggle out manuscripts.

Campanella's third primality, love, is a consequence of the primality of wisdom; things love existence, and such love follows naturally from self-knowledge. He explains it in *Metafisica*:

Beings exist not only because they have the power to be and know that they are, but also because they love [their own] being. Did they not love [it], they would not be so anxious to defend it. . . . All things would either be chaos or they would be entirely destroyed. Therefore love, not otherwise than power and wisdom, seems to be a principle of being. . . . (1638, cited in *ibid.*: 162)

The three primalities are intimately linked. The primality of knowledge, for example, acts through the primality of power. The power to be acted upon represents the reception of an essence, the transfer of something from the object to the knower. The object is able to surrender this essence by its power to act. This essence is captured by the knower, is incorporated into its being, and is thereby changed. It is this change that constitutes knowledge. "Every sense is a change in the sentient body." (Campanella 1620, cited in Dooley 1995: 49) This change is not arbitrary. By incorporating an essence of the object, the knower becomes like the object. Assimilation occurs. Thus, "knower" and "known" merge, at least in part. To know something is to *become like it*.

Cassirer (1927/1963: 148) noted that such an epistemology entails a joint sharing of a common essence, and that furthermore a panpsychist theory of mind naturally follows:

. . . this unity [of knower and known] is only possible if the subject and object, the knower and known, are of the same nature; they must be members and parts of one and the same vital complex. Every sensory perception is an act of fusion and reunification. We perceive the object, we grasp it in its proper, genuine being only when we feel in it the same life, the same kind of movement and animation that is immediately given and present to us in the experiencing of our own Ego. From this, Panpsychism emerges as a simple corollary to [Campanella's] theory of knowledge. . . .

Campanella has been revered throughout history as a man of powerful intellect and insight. In his own time he was acknowledged for his depth of thought. Battaglini called him "one of the rarest geniuses of Italy," and Brancadoro exclaimed that "in him all fiery and most subtle powers are

glowing and excel in the utmost degree.”¹³ Leibniz ranked him with Bacon, Hobbes, and Descartes.¹⁴ He remains, along with Bruno, as the outstanding exemplars of Renaissance naturalism, and together they mark the turning point from a medieval, theological worldview to a modern, scientific worldview.

3.5 The Early Scientific Philosophers

Campanella lived at precisely the time when scientific philosophy was being formed. Nearly the same age as Bacon (b. 1561) and Galileo (b. 1564), he created his naturalistic vision contemporaneously with their materialist and objectivist philosophy. Some intellectuals were able to accommodate both. Gilbert integrated science and panpsychism, as did Johannes Kepler.

Kepler (1571–1630) saw soul as the force behind the movements of the celestial bodies, at least for the better part of his life. His first substantial work, *Mysterium cosmographicum* (1596), held to “the traditional conception of force as a soul animating the celestial bodies” (Jammer 1957: 82). In 1609, Kepler published *Astronomia nova*, in which he discussed the “true doctrine of gravity” and noted that, wherever the Earth moved in space, heavy objects were always attracted to the Earth’s center “thanks to the faculty animating it” (1609, cited in *ibid.*: 85). He likened this animating force of gravity, which he called a *species immateriata*, to the animate force of magnets. In 1610 he claimed that gravity was identical to the magnetic force: “The planets are magnets and are driven around by the sun by magnetic force.” (*ibid.*: 89)

These themes continued in Kepler’s *Harmonies of the World* (1618). The epilogue (section 10) contains passages relating to the solar mind. Kepler believed that the periodic and rational movements of the planets were “the object of some mind” (1618/1995: 240). He noted that “it is not easy for dwellers on the Earth to conjecture . . . what mind there is in the sun” (240–241). Yet, he asserts, mind in the sun follows as a necessary explanation of the “solar harmonies of movements”:

For as the sun rotating into itself moves all the planets by means of the form emitted from itself, so too . . . mind, by understanding itself and in itself all things, stirs up ratiocinations, and by dispersing and unrolling its simplicity into them, makes everything to be understood. (244)

The solar mind is the source of the harmonies: “. . . there dwells in the sun simple intellect, *pyr noeron*, or nous, the source, whatsoever it may be, of every harmony” (*ibid.*).

In 1621, at the age of 50, Kepler changed his mind and decided that ‘force’ was a better term than ‘soul’. He had concluded that the gravitational attraction was something physical rather than supernatural:

Formerly I believed that the cause of the planetary motion is a soul. . . . But when I realized that these motive causes attenuate with the distance from the sun, I came to the conclusion that this force is something corporeal, if not so properly, at least in a certain sense. (cited in *ibid.*: 90)

This is a remarkably frank and revealing admission. Because gravity decreases (regularly but nonlinearly) with distance, it is a function of spatial dimension, and therefore it is of the physical world—hence, it cannot be soul. There is a deep implication here: any entity that exhibits regularity in space or time must be physical in nature, and therefore cannot be mental or spiritual. In Kepler’s day, soul and mind were by definition mysterious and immaterial, lacking all tangibility and regularity. Any phenomenon that would admit to mathematization must necessarily be natural, physical, corporeal.

This is in striking contrast to the view of the ancient Greeks. They saw regularity of motion as a clear indication of reason at work, and hence of soul in the cosmos. Kepler took the very same empirical phenomenon and came to the opposite conclusion: that mechanistic forces were the causal factors.

This, then, was the beginning of the mechanistic worldview—the mathematization of natural phenomena. Galileo took this up in earnest, and greatly advanced scientific philosophy. The natural philosophers grew emboldened by their successes and soon sought mathematical descriptions everywhere. As a consequence, they began to push spiritual explanations to the sidelines. Materialist and mechanist philosophy began to dominate.



Two of the first materialist philosophers of the modern era were Francis Bacon (1561–1626) and Thomas Hobbes (1588–1679). Both lived during the transition from naturalistic panpsychism to scientific materialism. Both were born in the sixteenth century, but their writing and thinking were more allied to the seventeenth. Bacon was seven years younger than Campanella and was certainly aware of the panpsychist and pansensist philosophies that were circulating on the Continent, as well as Gilbert’s scientific work *De magnete*.

Bacon could not abide the view that all things sense, as this ability was for him something only living things had. However he was willing to

admit that everything had some ability to *perceive* the local environment and to *feel* (though he did not use this word) such things as temperature and force. Perception was, for Bacon, a quality that all material objects possessed. Such a pan-perceptivist philosophy comes notably close to pansensism, and Bacon took care in spelling out his view. He attempted to do this in his *Natural History*, also called *Silva Silvarum*. In the early 1620s, near the end of his life, Bacon wrote the following in introducing section IX:

It is certain that *all bodies whatsoever, though they have no sense, yet they have perception*; for when one body is applied to another, there is a kind of election to embrace that which is agreeable, and to exclude or expel that which is ingrate; and whether the body be alterant or altered, evermore a perception precedeth operation; for else all bodies would be alike one to another.

And sometimes this perception, in some kind of bodies, is *far more subtle than the [human] sense*; so that the sense is but a dull thing in comparison of it: we see a weather-glass will find the least difference of the weather in heat or cold, when men find it not. And this perception is sometimes at distance . . . as when the lodestone draweth iron. . . . It is therefore a subject of very noble inquiry, to inquire of the more subtle perceptions; for it is another *key to open nature*, as well as the [human] sense; and sometimes better. . . . It serveth to discover that which is hid. (italics added)

Clearly, perception is some quality that is comparable to sense, though “more subtle” and more mysterious. It clearly merits study, but Bacon seems not to know how to tackle this matter. He is not so bold as to predict that all phenomena will yield to a materialist interpretation.

Hobbes also was aware of the pansensist philosophers, and he took up their challenge in his 1655 work *De corpore* (On the Body).¹⁵ He first defines sense as “motion in some of the internal parts of the sentient; and the parts so moved are parts of the organs of sense.” This is a relatively accurate description of a signal of some sort (such as light, sound, etc.) impinging on a sense organ and stimulating a nerve signal that moves through the body to the brain. He then confines sensation to living organisms: “The subject of sense is the sentient itself, namely, some living creature.” Then, in section 5, he writes:

But though all sense, as I have said, be made by reaction, nevertheless it is not necessary that everything that reacteth should have sense. I know that there have been philosophers, and those learned men, who have maintained that all bodies are endued with sense. Nor do I see how they can be refuted, if the nature of sense be placed in reaction only. And, though by the reaction of bodies inanimate a phantasm [sensation] might be made, it would nevertheless cease, as soon as ever the object [causing the sensation] were removed. For unless those bodies had organs, as living creatures have, fit for the retaining of such motion as is made in them, their sense

would be such, as that they should never remember the same. . . . For by 'sense', we [mean] . . . the comparing and distinguishing [of] phantasms. . . . Wherefore sense . . . hath necessarily some memory adhering to it. . . .

Thus, like Bacon, Hobbes felt compelled to challenge the doctrine of pansensism that was associated with Telesio and Campanella.

Hobbes recognized that the validity of pansensism hinged on the definition of 'sense'. If 'sensing' meant only *reaction*, then he concedes that all things sense—this much is obvious. But Hobbes added an additional condition: to sense requires memory, something only living organisms are presumably capable of. This qualification recalls Telesio's claim that memory, along with sensation, is central to a proper conception of the soul.

However, the concept of memory is perhaps not as transparent as Hobbes suggests. He seems to refer to a humanistic conception of memory, but there is no logical reason why the concept cannot be extended to general physical systems. A generalized conception of memory has at least two components: the ability to record experiences, and the ability to replay or project them into the future. Humans record experiences through morphological changes in the brain and then are able to replay them internally, and relate them externally via muscular action and language. Generalized memory requires, first of all, a permanent (or at least temporally persistent) change in the sensing body. That this occurs to all physical objects seems clear. Everything degrades and wears down over time, more or less so depending on the forces experienced. Ancient documents, fossils, rocks, and even planetary fragments can be dated with reasonable precision because of the permanent, cumulative record that all things acquire.

Furthermore, since physical objects do not communicate in the human sense, one may say that a form of memory exists if the record of experiences is present and available to an outside observer. Humans can clearly detect and measure physical changes over eons, and thus in at least one sense the record of experience is replayed. Many changes are more subtle and may not be detectable with present technology. But this does not alter the fact that all experiences are recorded, and can theoretically be recovered.

Other thinkers have observed that inanimate objects can in fact display a form of memory. William James, commenting on Fechner, wrote:

. . . the event works back upon the background, as the wavelet works upon the waves, or as the leaf's movements work upon the sap inside the branch. The whole sea and the whole tree are registers of what has happened, and are different for the wave's and the leaf's action having occurred. (1909: 171–172)

Thoreau's recently published book *Wild Fruits* contains a similar observation of the apple:

It will have some red stains, commemorating the mornings and evenings it has witnessed; some dark and rusty blotches, in memory of the clouds and foggy, mildewy days that have passed over it; and a spacious field of green reflecting the general face of Nature. . . .¹⁶

Logically, other more subtle perceptions—such as a gentle breeze, or the shadow of a hand on a leaf—also affect the system of a tree permanently, though such changes may be utterly undetectable. Bergson further elaborated the philosophy of memory, defining it as the decisive factor in the graded transition from matter to mind (see *Matiere et Memoire*, 1896). Given a generalized conception of memory, it seems that a Hobbesian argument could support a pansensist/panpsychist view.

The last great philosophical figure born in the sixteenth century was René Descartes (b. 1596). His ontological dualism of mind and body, arising from his technique of methodical doubt, set the emerging scientific, mechanistic worldview on the track that it would follow for the next 400 years and beyond. The Cartesian system was rationalist to the core and pragmatic in its intent. The non-human world was utterly aspiritual, without mind and without reason. Humanity was radically different from the other objects of the material world, and stood alone in an isolated sphere, privileged in the eyes of God.



Henry More (1614–1687) is perhaps the best-known of the so-called Cambridge Platonists, a group that included Ralph Cudworth among others. A theist and an idealist, More came of age just as Cartesianism and the scientific philosophy began to threaten the philosophical standing of Christian theology. He was concerned that Descartes' dualism implied a mechanistic universe that could operate without any intervention from God. At the same time, the pantheistic philosophy of Spinoza arose—a radical monism in which a non-Christian, non-personal God was immediately present everywhere. Neither of these options was acceptable to More.

More's response was to suppose the existence of an intermediary force, the "Spirit of Nature," that animated all matter on behalf of God.¹⁷ Matter in itself was inert, but the universal presence of the Spirit of Nature endowed all matter with an internal animating principle. "The primordials of the world are not mechanical but spermatical or vital . . . , which some moderns

call the Spirit of Nature.” (1668, cited in Bonifazi 1978: 59) Following Aristotle, this Spirit was seen to give form to all material things. It relieved God from the burden of continuous intervention and it saved the cosmos from an atheistic mechanism. It had numerous powers, including “self-penetration, self-motion, self-contraction and -dilation, and indivisibility” (ibid.: 64), but the power of thought or reason was not among these.

Hence, More’s position is more of a quasi-panpsychism. It is interesting because it served as a direct spiritual response to the emerging materialist worldview and because More relied on theological arguments to support his view of spirit in matter, in a way comparable to Campanella. Also, it reflected the continuing influence of Plato and the concept of the world-soul.

Ultimately, More’s theory failed, largely because it attempted to defeat science on its own terms. As Greene says (1962: 461), “it becomes increasingly obvious that More’s attribution of function to the Spirit of Nature is highly arbitrary, and that it is a catch-all for the inexplicable.” Robert Boyle was famous for his attacks on the Cambridge school’s fuzzy notions; he complained that “[such agents] as the soul of the world, the universal spirit, the plastic power . . . tell us nothing that will satisfy the curiosity of an inquisitive person, who seeks to know . . . by what means, and after what manner, the phaenomenon is produced.” (1674, cited in Bonifazi 1978: 68)

Margaret Cavendish, Duchess of Newcastle (1623–1673), was a contemporary of More. A poet and a playwright, Cavendish also produced three main works on natural philosophy: *Philosophical Letters*, *Observations upon Experimental Philosophy*, and *Grounds of Natural Philosophy*. She advocated a form of materialism based on seeing the cosmos as an organic whole composed of organic and animate parts. Her organicist materialism was offered in response to the purely mechanistic materialism of the sort that Hobbes and Descartes had articulated.

Cavendish followed the thinking of the Stoics and the Renaissance naturalists in arguing that all of nature was alive and intelligent: “. . . there is life and knowledge in all parts of nature, . . . and this life and knowledge is sense and reason” (Letter XXX, 1664/1994: 26). While seeing all things as material, she distinguished between two types of matter, the animate and the inanimate. These two were mixed together in all material objects: “. . . my opinion is, that all matter is partly animate, and partly inanimate, . . . and that there is no part of nature that hath not life and knowledge, for there is no part that has not a commixture of animate and inanimate matter” (ibid.: 25). Such properties were to be extended to the smallest portions of matter. As Perry recounts (1968: 185–186), Cavendish “felt that the world could not be made of atoms unless each one had life and knowledge.”

Animate matter was distinct from the inanimate in its capability for self-motion. It moved itself, and by physical connection it in turn moved the inanimate matter: “. . . the animate moves of itself, and the inanimate moves by the help of the animate” (Letter XXX: 26). Thus, the motion of all physical objects was to be explained by reference to their animate portion. The intelligence in both forms of matter was realized as a kind of knowledge, both in terms of self-knowledge and, ultimately, a knowledge of God:

All parts of Nature, even the inanimate, have an innate and fixt self-knowledge, [and] it is probable that they may also have an interior self-knowledge of the existency of the Eternal and Omnipotent God, as the Author of Nature. (Cavendish 1655/1991: 8)

Cavendish’s metaphysics was more poetic than systematic, but she established new standards for the intellectual women of the seventeenth century. Her depiction of a compassionate and animate world provided inspiration to later feminist philosophers.¹⁸

3.6 Spinoza

Spinoza (1632–1677) sought a holistic interpretation of the cosmos. He created a unified ontology in which all phenomena, whether mental or physical, are bound together in a single comprehensive picture. In this sense he reflected the inclinations of the Renaissance naturalists Cardano and Bruno. However, he lived in an era of new rationalism, led by Descartes (who was 36 years his senior), and in an era of emerging scientific/materialist philosophy, led by Bacon, Galileo, and Hobbes. And of course the religious theology of the day still held considerable influence and affected the thinking and writing of many intellectuals, Spinoza included. Consequently, Spinoza’s approach to unity took on aspects of all these influences: he built a logical, even mathematical case for the unity of God and nature, and of mind and matter, that incorporated the concept of the “universal law.” This he accomplished in his *Ethics* (1677). The following citations refer to that work.

Spinoza’s approach in the *Ethics* was “geometrical”; that is, it relied on a system of arguments patterned after mathematical formalism. Such a mathematical methodology was a novel approach in philosophy, largely attributable to the influence of Descartes.¹⁹ But beyond pure methodology, Spinoza believed that mathematics could lead to true insight into the nature of reality. Mathematical formalism reflected ontological formalism.

In Spinoza's view, all of reality consists of one single substance, called "God." Since this substance was identical to that which constituted the entire natural cosmos, the substance "God" was also referred to as "Nature"—classical pantheism. We saw this conception in Bruno's philosophy, but it was more ambiguous; God for Bruno still had aspects of a transcendent being. Spinoza is very clear in his total and complete identification of God with Nature. God is in no sense a person or a being, but rather the totality of existence.

This radical monism had to account for the plurality of things in the world, and especially for the classes of things that we commonly call mental and physical. Spinoza proposed that the one substance, God/Nature, possessed infinitely many attributes. Only two of these attributes can be perceived by humans, and these two (following Descartes) are "extension" (physical) and "thought" (mental). Furthermore, any specific physical or mental entity is a "mode," or modification, of one of the attributes. A particular physical thing, such as an apple, is a *mode of extension*, and any specific mental event, such as a feeling of pain, is a *mode of thought*. Thus, the one substance, God/Nature, displays to us two aspects: the physical and the mental. Hence, Spinoza's theory is appropriately described as dual-aspect monism.

The two knowable attributes—extension and thought—are distinct yet intimately related. They have a very specific and fundamental connection: every physical thing has a corresponding mental aspect, which Spinoza calls an "idea"; conversely, every mental idea has a corresponding object, or thing. This is Spinoza's unique brand of unity, known as *psycho-physical parallelism*. To every physical thing or event there corresponds an idea of that thing or event.

As the chain of physical events progresses in the world, there exists a parallel chain of mental events.²⁰ These two chains of events track each other identically, one to one, and run forever in parallel. "The order and connection of ideas is the same as the order and connection of things." (IIP7)²¹ Why is this the case? Because the thing and the corresponding idea are really the *same thing*—there is only one substance, after all:

. . . the thinking substance and the extended substance are one and the same substance, which is now comprehended under this attribute, now under that. So also a mode of extension [i.e. a particular thing] and the *idea* of that mode are one and the same thing. (IIIP7S)

It is not correct to say that the chain of things causes the chain of ideas, nor do the ideas cause changes in the physical. There in fact is no causal con-

nection between the two series at all. Causality is not even possible, because they are only two aspects of a single substance.

Consider the special case of the human body. It is a particular physical thing, hence it is a mode of extension. Corresponding to this mode, as to all modes, is an idea. The idea of the human body is not just some arbitrary mental entity; it is in fact the *mind* of that person: "The [physical] object of the idea constituting the human mind is the [human] body, or a certain mode of extension which actually exists, and nothing else." (IIP13) Mind is the *idea* of body, and body is the *object* of mind.

Since the two aspects have no causal relationship, mind cannot affect body and body cannot affect mind.²² Yet for every body there is an associated mind, and as the body changes so in a corresponding way does the mind change. They change together without causal interaction: ". . . the mind and the body, are one and the same individual, which is conceived now under the attribute of thought, now under the attribute of extension." (IIP21S) So we see in Spinoza a metaphysical system in which we have a new way of comprehending these two realms of physical and mental. Each physical thing has an idea associated with it, and conversely every idea has a corresponding physical thing associated with it.

It is natural to think in terms of human beings, but Spinoza tells us that his method is "completely general." His use of 'body' in fact refers not just to human bodies but to *any physical body* whatsoever. Hence, the idea of *any physical thing at all* is in reality *the mind* of that thing. Every mode of extension has its corresponding mode of thought, or in simplest terms, *every thing has a corresponding mind*. Thus we arrive at Spinoza's panpsychism. This is spelled out explicitly in the Scholium of part II, proposition 13:

From these [propositions] we understand not only that the human mind is united to the body, but also what should be understood by the union of mind and body. . . . For the things we have shown so far are completely general and do not pertain more to man than to other individuals, all of which, though in different degrees, are nevertheless animate.

Spinoza then goes on to explain what he means by "different degrees":

I say this in general, that in proportion as a body is more capable than others of doing many things at once, or being acted on in many ways at once, so its mind is more capable than others of perceiving many things at once. (ibid.)

Spinoza's First Principles argument for panpsychism is often seen to rest solely on the Scholium of proposition 13, but this is not the case. There are at least three other claims for it. First, it is a logical consequence of propositions 3 and 11. Proposition 3 states that "in God there is necessarily an

idea . . . of everything which necessarily follows from his essence," i.e. all extant things. Hence all real things have ideas. Proposition 11 tells us that these ideas are minds. It does so not in general but by reference to the specific case of the human mind. Our mind is "nothing but the idea of a singular thing which actually exists," i.e. some extant thing. (Proposition 13 informs us that this thing is nothing other than our body.) But it does not matter what the particular singular thing is; what is relevant is that mind is the idea of some real thing. If minds are ideas, and all real things have ideas, then all real things have minds.

Further evidence can be found in proposition 1 of part III ("On the Affects"). Here we find not so much an argument as a simple recognition that other things beside humans possess minds. Spinoza is elaborating on the fact that humans have both "adequate" and "inadequate" ideas in their minds, and that either kind of idea is, however, adequate in God/Nature because "he also contains in himself, at the same time, the minds of other things." Clearly the "other things" are non-human objects, and without reason to limit them one must conclude that this covers all extant things.

Finally there is Spinoza's doctrine of *conatus*, or striving. Part III observes that all things display a kind of effort or power toward maintaining existence—much along the line of Campanella's *potentia essendi*. Like Campanella, Spinoza saw this striving as evidence of a vital or animate energy in things. The definitive passage is proposition 6: "Each thing, as far as it can by its own power, strives to persevere in its being." Proposition 7 adds that this striving "is nothing but the actual essence of the thing." And proposition 8 says that it is not merely occasional or sporadic but exists for "an indefinite time"; thus striving is an eternal and essential aspect of any existing thing. In an earlier work (*Descartes' "Principles of Philosophy"*) Spinoza defined 'life' as "the force through which things persevere in their being." Assuming he maintained such a view through the *Ethics*, one can clearly see the conatus doctrine as a form of hylozoism. This again would be consistent with a generally panpsychic outlook.

One further passage from Spinoza is worth mention, but its status as a basis for panpsychism is not clear. In his 1674 letter to Schuller (Letter #58), he elaborated on his theory of free will and determinism. By way of example, he cites a stone that is "set in motion" through the air, i.e. thrown by someone. A stone set into motion is not unlike, say, a human set into motion; each moves through the world, reacting to various impulses and forces. Spinoza continues:

Next, conceive now, if you will that while the stone continues to move, it thinks, and knows that as far as it can, it strives to continue to move. Of course since the stone is conscious only of its striving, and not at all indifferent, it will believe itself to be free, and to persevere in motion for no other cause than because it wills to. And this is that famous human freedom which everyone brags of having. . . . (1674/1994: 267–268)

It is not clear whether Spinoza means to say that the stone *does* think and *is* conscious or whether this is merely a hypothetical example. The problem is that the point of his discussion is the issue of free will and not of mind in general. It is a suggestive passage nonetheless.

In view of the controversial status of panpsychism, it is perhaps not surprising that many scholars have denied that Spinoza's view is a panpsychic one. This is particularly true of commentaries from the early to the middle part of the twentieth century. Of the early commentators, Joachim (1901) is the most neutral. But we find clearly hostile readings in Wolfson 1937 (ideas are really just "forms," not minds), in Fuller 1945 ("ideas can scarcely be regarded as individual psychical entities, like souls or minds"), in Hampshire 1951 ("only humans have minds"), in Parkinson 1953 (that all things are animate is merely an inconsequential "curiosity"), and in Curley 1969 (ideas are just "true propositions"). However, the later commentaries display a clear trend toward greater sympathy for the panpsychist interpretation. Pro-panpsychism interpretations are found in Harris 1973, in Bennett 1984, in Delahunty 1985, in Allison 1987, and in Curley 1988; even Hampshire (2002) seems to have turned toward a more sympathetic reading.²³ Curley (1988: 64) has gone so far as to argue for a kind of super-panpsychism in Spinoza, in which not just extended (i.e. physical) things have minds, but so too do modes of all the other unknowable attributes. This large-scale shift toward a panpsychist interpretation seems to be widely unacknowledged by Spinoza scholars.

3.7 Locke and Newton

Locke and Newton played central roles in advancing the materialist and mechanistic worldview, but both men appear to have had lingering doubts about the relationship between matter and spirit. Apparently neither seemed completely confident that pure materialism could account for the phenomena of the natural world.

Locke (1632–1704) is, of course, best known for his empiricism, especially as expounded in the *Essay Concerning Human Understanding* (1689). Here he laid out his views on morality, knowledge, and human abilities to comprehend the world.

A rather notorious passage is found in the final book of the *Essay*, where Locke discusses the relation of mind to matter. He is inquiring as to how it is possible that the human body, as a material object, is able to think. A question of interest to him is whether the material body had an innate ability to think or whether divine intervention was necessary. It could be the case that God directly intervened to give humans the ability to think; that God gave certain material objects, such as the human body, the power to think, which they then do of their own accord; or that matter *in itself*, perhaps under certain conditions, has the ability to think. This last position could lead to a version of panpsychism, and Locke seems to have recognized this possibility. Thus, he attempts to clarify the issue. In section 6 of chapter III of book IV (“The Extent of Human Knowledge”) he writes:

We have the ideas of *matter* and *thinking*, but possibly shall never be able to know whether any mere material being thinks or no; it being impossible for us . . . to discover whether Omnipotency has not given to some systems of matter, fitly disposed, a power to perceive and think, or else joined and fixed to matter . . . a thinking immaterial substance. . . . We know not wherein thinking consists, nor to what sort of substances the Almighty has been pleased to give that power. . . . For I see no contradiction in [that God] should, if he pleased, give to certain systems of created senseless matter . . . some degrees of sense, perception, and thought. . . . [No one can] have the confidence to conclude [that God] cannot give perception and thought to a substance which has the modification of solidity.

This passage can be viewed in different ways. On the surface it can be seen as an argument for the omnipotence of God: he can do anything at all and therefore he can certainly grant the power of thought to mere matter, any matter. Locke does not want to be seen limiting the power of God.

There is no obvious endorsement of panpsychism here. Locke makes no clear statement that “matter thinks,” or that “anything besides humans think.” On the other hand, he speaks of “matter,” and not, say, the “human body.” He sees “no contradiction” in the possibility that “certain systems of matter,” presumably including non-human ones, may have “some degrees of sense, perception, and thought.”

Locke is clear that matter has no *inherent* ability to think: elsewhere in the same chapter, he claims that matter “is evidently in its own nature void of sense and thought,” and thus thinking, wherever it may occur, must come from God, who after all can place it anywhere he likes. So who is to say that God has not given other material objects, or even *all* objects, some degree of thought?

Locke seems to avoid committing himself to a position. Near the end of section 6 he claims agnosticism, stating that the issue of understanding

how any material object can think “is a point which seems to be put out of reach of our knowledge. . . . We must content ourselves in the ignorance of what kind of being [the “thinking substance” in us] is. . . . [For after all], what substance exists, that has not something in it which manifestly baffles our understandings.” As a classical empiricist, Locke recognized the impossibility of investigating the internal perceptions of the non-human mind. This is perhaps an indication that rationalist approaches are the more promising.

Newton (1642–1727) was not only a great scientist but also a philosopher of science. His *Principia* (1687) described the laws of gravity and the basic equations of force and motion. But he was concerned not only how to describe the actions of nature in terms of universal laws but also how to grasp the underlying meaning. He sought explanations as much as descriptions, and spent much of his remaining 40 years trying to do just this.

Newton is, of course, the namesake of the so-called Newtonian worldview, in which inert material objects move about under mechanistic forces in a clockwork fashion. Such a universe is commonly understood to be non-spiritual, if not outright atheistic in its physical dimension. However true this may be of modern depictions, it was certainly not the view of Newton himself. He was a profoundly religious and spiritual man. His belief that God was immanent in the universe and actively involved in its state of affairs is one of the few consistent threads in his philosophy. Furthermore, he had serious doubts about viewing matter as dead and inert. In fact, he seems to have had a strong inclination to view all matter as living (hylozoism), and even as possessing mind-like qualities. McRae (1981) conducted a brief but interesting study along this line, based largely on a detailed investigation by McGuire (1968) of Newton’s post-*Principia* writings. McRae (1981: 191) states very directly that “Newton had no objection to hylozoism [and] indeed, appears to have been powerfully attracted to [it].” The basis for this can be found in a draft variant of Query 22 in the 1706 work *Optice*:

For Bodies . . . are passive. . . . They cannot move themselves; and without some other principle than the *vis inertiae* [inertial force] there could be no motion in the world. . . . And if there be another Principle of motion there must be other laws of motion depending on that Principle. . . . We find in ourselves a power of moving our bodies by our thoughts . . . and see [the] same power in other living creatures but how this is done and by what laws we do not know. . . . It appears that there are other laws of motion . . . [and this is] enough to justify and encourage our search after them. *We cannot say that all nature is not alive.* (cited on pp. 170–171 of McGuire 1968; italics added)

The final sentence is fairly astonishing, especially in view of Newton's traditional mechanistic image.

Other passages by Newton confirm this hylozoist inclination. As early as the *Principia* he acknowledges the existence of two states of "force" (later, two "principles"): passive (or "resistance") and active (or "impulse"). This apparent connection with Stoic philosophy is no coincidence; Newton studied ancient philosophy and was undoubtedly influenced by Stoicism.²⁴ Definition III of book I of the *Principia* discusses the *vis inertiae*, or inertial force of a static body. When experiencing an external force, the *vis inertiae* exerts itself in two ways: "as both resistance [passive] and impulse [active]; it is resistance so far as the body . . . opposes the force impressed; it is impulse so far as the body, by not easily giving way to the impressed force . . . , endeavors to change the state of that other." (1687) The *vis inertiae* actively exerts an effort; it acts back on the force, and attempts to change it. There is an implied notion here of will or agency.

Stoicism associated life, mind, and soul to the active principle. This was also Newton's interpretation. Again in the 1706 *Optice*, draft Query 23, he challenged the notion that nature has only a passive inert principle:

. . . to affirm that there are no other [laws beside "passive"] is to speak against experience. For we find in ourselves a power of moving our bodies by our thought. Life and Will (thinking) are active Principles by which we move our bodies, and thence arise other laws of motion unknown to us. (cited on p. 171 of McGuire 1968)

. . . if there be an universal life, and all space be the sensorium of a immaterial living, thinking, being, . . . [then] the laws of motion arising from life or will may be of universal extent. (ibid.: 205)

It was not only the *vis inertiae* that animated matter. At some time after 1706, Newton hit on the idea that electricity may be the main force acting at small distances. Further, he felt that in this may lie a new universal principle, which McGuire describes as "an electrical *arche* connecting mind with matter" (176). Newton made this clear in Quest 25:

Do not all bodies therefore abound with a very subtle, active, potent, electric spirit by which light is emitted, refracted, and reflected . . . [by which] the small particles of bodies cohere when contiguous . . . and regulate almost all their motions amongst themselves. For electric [force] . . . uniting the thinking soul and unthinking body. (176)

As McGuire notes (1968: 177), "Newton was speculating on the possibility of uniting under one principle, life and nature, vitality and matter." Hardly what one would expect from the greatest mechanistic scientist of Western civilization.

3.8 Leibniz

The panpsychism of Leibniz (1646–1716) was rooted in his conception of the monad. Yet even before his development of this concept he found reasons to see all things as animate. Some of his earliest philosophical writings date from the mid 1680s, when he was about 40 years old. In *Primary Truths* he asserted, with emphasis, that “every particle of the universe contains a world of an infinity of creatures” (1686a/1989: 34). The same year, in a letter to Arnauld, Leibniz defined ‘soul’ as “substantial form” and attributed it to all things with a “thoroughly indivisible” unity: “I assign substantial forms to all corporeal substances that are more than mechanically united.” (1686b/1989: 80) The extent of such objects is presumed to be widespread but is left unspecified.

Leibniz seems to have had at least two reasons for thinking this way. The first was Leeuwenhoek’s recent (ca. 1660) invention of the microscope and his discovery of “animalcules” in apparently clear drops of water. This was dramatic empirical evidence that hitherto unseen forms of life resided in unsuspected places. A plethora of life implied a plethora of souls. Leibniz admitted as much in a 1687 letter to Arnauld: “. . . experience favors this multitude of animated things. We find that there is a prodigious quantity of animals in a drop of water.” (1989: 88) Second, Leibniz found theological reasons for this belief. An ensouled universe was more nearly perfect than one in which only mankind possessed soul, and thus was more in line with the perfection of God. It is, Leibniz wrote, “in conformity with the greatness and beauty of the works of God for him to produce as many [true] substances as there can be in this universe” (1687/1989: 87). It is “a perfection of nature to have many [souls]” (ibid.).

Detailed reference to the notion of the monad did not come until 1698, and the full development of the monad theory not until the works *Principles of Nature and Grace* (1714a) and *Monadology* (1714b). However, even Leibniz’s writings leading up to the concept of the monad indicated that he associated the soul or substantial form with a point-like entity. As early as 1671, at age 25, he wrote that “the soul, strictly speaking, is only at a point in space” (in Hoeffding 1908: 335). In 1695, he wrote of “true unities” underlying reality:

. . . in order to find these *real unities*, I was forced to have recourse to a *real and animated point*, so to speak, or to an atom of substance which must include something of form or activity to make a complete being. (1695: 139)

Here again we see the association of animation with a point-like entity. Leibniz continues:

I found that [the atoms'] nature consists in force, and that from this there follows something analogous to sensation [i.e. perception] and appetite, so that we must conceive of them on the model of the notion we have of *souls*.

Like Bruno's, Leibniz's monad was a point-like, atom-like entity that constituted all extant things. The monad was the true substance, and all other things were simply collections or aggregates of these monad substances: "These monads are the true atoms of nature, and, in brief, the elements of things." (1714b, section 3) Monads have the rather paradoxical quality of being at once absolutely simple and "without parts" and yet being absolutely unique from one another. In fact every monad is a kind of focal point for its own perspective on the universe, and is internally as complex and ordered as the entire cosmos:

. . . there must be a plurality of properties and relations in the simple substance [i.e. monad], even though it has no parts. (1714b, section 13)

. . . each monad is a living mirror . . . which represents the universe from its own point of view, and is as ordered as the universe itself. (1714a, section 3)

These simple yet complex monads have other interesting characteristics. First, they are "windowless"—they have no direct interaction with the outside world or with each other. They are exempt from physical causality. Second, monads have two primary capabilities: perception and appetite. Perceptions are just the states that monads pass through as they continually reflect their ever-changing perspective on the universe. The appetite, or desire, is that which "brings about the change or passage from one perception to another" (*ibid.*, section 15). The animistic flavor of these two terms is clearly linked to the idea that every monad is a soul.

Monads thus served as the theoretical basis for Leibniz's panpsychism. In 1698 he wrote:

I believe that . . . it is consistent neither with the order nor with the beauty or the reason of things that there should be something vital or immanently active only in a small part of matter, when it would imply greater perfection if it were in all. And even if . . . intelligent souls . . . cannot be everywhere, this is no objection to the view that there should everywhere be souls, or at least things analogous to souls. (1698/1956: 820; section 12)

In *Monadology* (section 66) he reiterated: ". . . we see that there is a world of creatures, of living beings, of animals, of entelechies, of souls in the least

part of matter.” Panpsychism was a consistent and fundamental aspect of his metaphysics.

Leibniz faced three perplexing and related questions: How can point-like entities adhere to form apparently solid objects? How can a theory of monads account for the high-level soul/mind that is found in humans? And why do certain collections of monads (e.g. humans) possess high-level unified minds whereas others (e.g., rocks) do not?

The solutions to these problems center on two concepts: that of the *aggregate* and that of the *dominant monad*. Throughout his philosophical career, Leibniz emphasized the distinction between mere collections or aggregates of monads and those collections with a substantial sense of wholeness and unity. Aggregates included objects or systems that were loosely organized, like a “heap of stones,” an “army,” a “herd,” or a “flock.” They furthermore included objects that were apparently solid and whole—rocks, tables, houses, shoes, and so on. In his theory of aggregates Leibniz followed Democritus²⁵: aggregates only *seem* to be whole and unified. Their unity is only in our minds, not in reality. This is clear in the case of flocks and herds, less so in the case of a solid rock. Yet Leibniz saw them as on a continuum and as distinct from other objects—humans, other animals, plants—that were truly integrated beings. Integrated objects possess a “substantial unity,” something that “requires a thoroughly indivisible and naturally indestructible being” (1686b/1989: 79).

The substantial unity of true individuals was realized physically by the dominant monad. Of the countless monads making up the body of a person, one monad somehow came to dominate the others and to draw them together into cohesiveness.²⁶ This dominant monad, or “primary entelechy,” was the soul of the person. The human body, in itself, was considered a mere aggregate; but together with the dominant monad or soul it made up a “living being”:

[The dominant monad] makes up the center of a composite substance (an animal, for example) and is the principle of its unity, is surrounded by a *mass* composed of an infinity of other monads, which constitute the *body belonging to* this central monad. (1714a, section 3)

Again, this was the case for humans, animals, plants, and the microscopic animalcules in the droplets of water. Such things were in fact doubly ensouled: they consisted of animate sub-monads, and they possessed a single unifying soul in the dominant monad. Aggregates were not animate in themselves, but were still composed of the same soul-like monads. Therefore, even aggregates were animate in a restricted sense. This was identical

to Bruno's view, but Bruno offered no theory as why it should be the case. Leibniz at least proposed the outline of a theory, even though he left many things unanswered—including how and why one monad comes to dominate and why this only happens in certain collections of monads.

These open questions point to an incompleteness in Leibniz's theory. He was never clear, for example, on whether large-scale objects or systems, such as the Earth, were to be considered "substantial unities." Only once, in an early letter to Arnauld, did he address this directly: ". . . if I am asked in particular what I say about the sun, the earthly globe, the moon, trees, and other similar bodies. . . . I cannot be absolutely certain whether they are animated, or even whether they are substances. . . ." (1686b/1989: 80) Leibniz soon accepted trees and other plants as animated beings, but the general status of large-scale systems remained open throughout his life.

Two other points indicate Leibniz's uncertainty about the status of aggregates. First, his final two major philosophical essays—*Principles of Nature and Grace* and *Monadology*—rarely mention the subject. *Principles* does not discuss it, focusing instead on living beings and their dominant soul monad. *Monadology* reverses Leibniz's usual terminology; he divides reality into "simple substances" (monads) and "composite substances," wherein the composite "is nothing more than a collection, or *aggregate*, of simples" (section 2). Apparently, then, all living beings are to be considered aggregates. Again, the remainder of *Monadology* contains no further discussion of the soulless aggregates. That these two essays constituted a summary of Leibniz's metaphysical system is all the more significant. Second, there is Leibniz's late (ca. 1712) introduction of the *vinculum substantiale* (substantial chain) as a kind of glue that bonds together the monads of a living being. Leibniz consistently affirmed that ordinary material objects, such as rocks, were mere phenomena and only appeared to be unified beings. But this also held for the body of an animal, which, apart from its dominant soul/mind monad, was also a mere aggregate. Concerned to differentiate the two, and knowing that "points can never form a continuum," he introduced a substantial chain to link all monads of true living beings together. This chain was both "real" and "substantial," and it was to be "added to the monads in order to make the phenomena real" (1716/1989: 203). In retrospect the whole concept of the *vinculum substantiale* seems an *ad hoc* creation to account for the differing properties of aggregates. It is in fact a whole new ontological category, distinct from the monads themselves. We are given no explanation of how this chain comes to exist, or of why it is present only in select aggregates and not in others.

A final point of note concerns the influence on Leibniz of earlier panpsychists. Bruno clearly influenced him,²⁷ and Leibniz's use of 'monad' may well have been inspired, if only indirectly, by Bruno's work. Then consider the passage in section 66 of *Monadology*, cited above: ". . . we see that there is a world of creatures, of living beings, of animals, of entelechies, of souls in the least part of matter." This bears resemblance to an earlier passage in which Bruno asserted that "there is not the least corpuscle that does not contain within itself some portion that may animate it." And other Renaissance panpsychists seem to have influenced Leibniz. We know for certain that he read Campanella, so clearly he was aware of Italian naturalism. He even seems to have picked up a central element of Campanella's ontology: *Monadology* contains a virtual word-for-word reiteration of Campanella's doctrine of the three primalities (power, wisdom, and love/will):

God has *power*, which is the source of everything, *knowledge*, which contains the diversity of ideas, and finally *will*, which brings about changes . . . in accordance with the principle of the best. (section 48)

Leibniz corresponded with the philosopher Francis van Helmont in the late 1690s (just before Leibniz introduced the term 'monad'), and was "considerably influenced" by him.²⁸ Helmont was a close associate of the British philosopher Anne Conway. She, in turn, was a colleague of Henry More, who cited the term 'monad' in his Cabbalistic axioms.²⁹ It is entirely possible that either Conway or More (or both) picked up Bruno's concept of the monad and incorporated it into his and/or her philosophy. Thus, it may have been by way of More, Conway, and Helmont that Bruno's influence was felt. In the end, Leibniz seems to have adopted many ideas of the Italian naturalists, elaborated them, and articulated them in the terminology of the emerging scientific worldview.

4 Continental Panpsychism of the Eighteenth Century

Mechanistic philosophy made substantial progress in eighteenth-century Europe, gradually displacing theism as the dominant worldview. Scientific advances were seen as validating the presumption of a mechanistic cosmos. Judeo-Christian theology was surpassed, first in intellectual circles and then later in society at large; its explanatory power faded, and its theistic imperatives grew impotent.

The ascendancy of mechanism was opposed both by theists (on the grounds that the cosmos was not without Spirit) and by those who argued for a panpsychist, animated worldview (on the grounds that matter was not lifeless and inert). Panpsychism in various forms emerged as a significant challenger to mechanism, at least within the bounds of rationalist philosophy. Most of the important developments of the century occurred on the Continent, primarily in France and Germany. Notable philosophers argued for the panpsychist view, including LaMettrie, Diderot, Herder, and Goethe. Less prominent thinkers, including Maupertuis and Priestley, advocated it too. And Kant had some interesting observations on the matter.

4.1 French Vitalistic Materialism

From the late 1600s the leading metaphor for the cosmos was that of the *machine*. Leibniz was the first major philosopher to begin speaking about living beings as machines. He couched it in pleasant enough terms, calling them “divine machines” and emphasizing that natural machines were qualitatively different from man-made machines. Further, these divine machines were at root spiritual; mind and soul resided in the monad atoms that composed them. Living beings were more or less automatons whose actions flowed from the nature of monads and from the universal laws of nature. Shortly thereafter, other thinkers took the next logical step and began to ask whether the soul hypothesis was really necessary at all.

Among the most notorious of these philosophers was Julien LaMettrie (1709–1751). Author of the provocative and scandalous *L'Homme Machine*, LaMettrie was the first thinker to unabashedly (though anonymously) claim that man was purely a natural automaton and did not require an immaterial soul to account for his behavior. LaMettrie had been trained as a physician, and his study of human anatomy, along with the scientific advances of the day, seemed to support his views.

LaMettrie was a staunch materialist, but this ran against the grain of the time. Pure materialism had been out of favor for nearly 1,500 years, particularly since the rise of the Christian worldview. Virtually all philosophers and natural scientists after the Stoics had claimed that there was some non-material, incorporeal aspect to reality. Hobbes broke with this tradition in the middle of the seventeenth century and met with severe condemnation. Descartes indirectly supported materialism by eliminating the spirit from nearly all aspects of the physical world, save the human. To Descartes, animals were unfeeling natural automata, in a different class of existence than humans. And as science explained more about physical reality, the need for an active incorporeal realm lessened. There was increasingly less reason, from a physiological standpoint, to distinguish between humans and other animals. By the early 1700s, LaMettrie could speculate that either the soul did not exist or, if it did exist, it was essentially identical with the workings of the human body. In openly denying the immaterial soul, he was effectively breaking new ground in Continental philosophy.¹

LaMettrie is also widely pronounced a mechanist; however, this is not correct, and the distinction is quite important. The mechanistic view sees matter as fundamentally lifeless and inert. If one believes that motion and mind somehow arise purely through physical interaction of inert and lifeless atoms, then one is a mechanistic materialist. This approach follows from Descartes' view of matter—pure extension, completely dead. To account for the human mind/soul, the mechanistic philosopher must resort to supernatural dualism, epiphenomenalism, or eliminativism. These were not viable options for LaMettrie. To him, mind was a very real entity, and clearly it arose from a material cosmos. An obvious solution, therefore, was to see matter itself as inherently dynamic, capable of feeling and even intelligence. Motion and mind can derive from some inherent powers of life or sentience that dwell in matter itself or in the organizational properties of matter. This view, sometimes called *vitalistic materialism*, is the one that LaMettrie (and later Diderot) adopted.²

Commentators often portray LaMettrie as a mechanist because it is assumed that anyone who denies the spiritual realm must see all things,

and in particular all living things, as mere inanimate machines, products of dead matter. It is quite common, even today, to equate materialism with mechanism. But, as has been noted, the two are logically independent. In fact, LaMettrie's first philosophical work attacked the Cartesian notion of animals as unfeeling machines, calling such a position "a joke" (see below). Though LaMettrie obviously adopted the term 'machine' in his *L'Homme Machine*, it was in a specifically vitalistic sense.

LaMettrie's writing demonstrates that he in fact had quasi-panpsychist and hylozoist inclinations, which necessarily have no role in mechanistic materialism. In mechanistic materialism, dead matter and blind forces somehow mysteriously give rise to such complex phenomena as life and mind. Vitalistic materialism sees some degree of life and mind in all things and seeks a natural rather than a supernatural explanation. LaMettrie's man-machine was not a machine in the modern sense but rather a natural material object that was capable of self-motion and self-animation. As Vartanian saw it (1960: 19), LaMettrie's "primary task was to *vitalize* the Cartesian 'dead mechanism.'" It was science that set the example: "Just as the inexplicable force of attraction [i.e. gravity] was proved empirically to inhere in matter, LaMettrie was encouraged to suppose by analogy that matter might also be capable of consciousness." (67)

LaMettrie's first philosophical work, *L'Histoire Naturelle de L'Ame* (Natural History of the Soul), was published in 1745.³ It begins with an explanation of the soul viewed as the "active principal" of the body (à la Stoicism) rather than as an immaterial substance that somehow interacts with it. LaMettrie next accepts, following Descartes, that all matter possesses the attribute of spatial extension. He then claims that matter has an inherent animating force that gives it the power of motion: ". . . it is clear enough that matter contains the motive force which animates it and which is the immediate cause of all the laws of movement" (1745/1996: 49). Later in the work he carries out the full implications of this thought and argues for a third general attribute of matter: *feeling*. LaMettrie is not entirely clear as to how we are to understand this faculty. At one point he informs us that it is a general property of matter and is clearly apparent in living organisms. Elsewhere we read that this faculty (like the other two) is not always manifest: "Here then is yet another faculty [i.e. feeling] which likewise seems to inhere in matter only potentially, like all the others. . . ." (51) Furthermore,

We must nevertheless admit frankly that we do not know whether matter has in itself the immediate faculty of feeling or only the power of acquiring it through the modification or forms of which it is susceptible. For it is true that this faculty only appears [to us] in organized bodies. (ibid.)

Feeling becomes apparent to us when matter is sufficiently organized, but it exists latently in all matter. This seems to be the logical conclusion.

At the same time, LaMettrie chastises the Cartesians for positing non-human animals as *unfeeling* machines—another indication of his anti-mechanistic position:

I am aware of all the efforts vainly made by the Cartesians to take [feeling] away from matter. . . . They thought they could extricate themselves with the absurd system “that animals are mere machines”. Such a ridiculous opinion has never been accepted by philosophers except as a joke. . . . Experience proves that the faculty of feeling exists in animals just as much as it does in men. (50)

Science and physiology prove that there is a “perfect resemblance . . . between man and beast” (*ibid.*), which philosophers ignore at their peril. Thus LaMettrie places humanity firmly in the natural order and denies a categorical distinction.

LaMettrie does not offer a good explanation of how matter can be sentient. In the passage cited above, he admits that it is not known whether feeling is inherent in all matter or is acquired through the forms it takes on. In chapter 7 he asks candidly “How can we conceive that matter can feel and think?” “I admit,” he continues, “that I cannot conceive it.” (*ibid.*: 65) He has no explanation.

The strongest case for vitalistic materialism appears in *L’Homme Machine* (1747). He begins by criticizing Leibniz’s monadology as “unintelligible,” arguing that Leibniz went in the wrong direction and “spiritualized matter rather than materialized the soul” (1747/1994: 27). Later he reiterates his view that men are really no different from animals and in fact should be “honored to be ranked among them” (47). And he again defends his thesis that the organizational complexity of the human body accounts for the so-called faculties of the soul:

. . . these faculties are obviously just this organized brain itself, there is a well-enlightened machine! . . . [Even our conscience is] no more foreign to matter than thought is. . . . Is organization therefore sufficient for everything? Yes, once again. (59)

Utilizing a form of the Continuity argument, LaMettrie argues that it is the matter of the body itself that exhibits feeling: “Since thought obviously develops with the organs, why would the matter of which they are made not be susceptible to [for example] remorse once it has acquired in time the faculty of feeling?” (*ibid.*)

Near the end of *L’Homme Machine* LaMettrie reiterates his claim that mere matter can think, but he acknowledges once again that there is an element

of unknowability about this. If matter can think, this implies a thinking subject, one that is inherently unknowable:

On the basis of these [previous] observations and truths, we can attribute the admirable property of thinking to matter even without being able to see the connection between the two, because the subject of that thinking is unknown to us. (75)

This is a modern perspective. The subject—that which does the thinking—is known only to itself. The inner subjective feelings of any material being are forever hidden from public view. Vartanian notes that “the growth of subjective reality from matter in motion remains, in LaMettrie’s opinion, a metaphysical riddle lying beyond the competence of psychological [and philosophical] investigation” (1960: 23).

In his efforts to unify nature, LaMettrie compared humans not only to animals but also to plants. In 1748, a year after *L’Homme Machine*, he published a short work, *L’Homme Plante*, in which he notes the many similarities in physiology between humans and plants (anticipating Fechner) and disputes the ancient notion (e.g. in Aristotle) of plant-souls; he also explicitly denies the concept of a world-soul. He does make one small elaboration on his organizational complexity thesis, arguing that mind is proportional not merely to complexity but more specifically to “needs,” the demands that the organism makes on the environment: “. . . man is neither entirely a plant nor yet an animal like the others. . . . Because we have infinitely more needs, it follows necessarily that man must have infinitely more mind.” (1748/1994: 90) The implication is that all beings possess mind, in proportion to their need to maintain their existence. The mind of a plant, though “infinitely smaller” than that of a human, is not nonexistent. Unfortunately, LaMettrie apparently did not pursue this line of thought.



LaMettrie’s works, in particular *L’Homme Machine*, caught the attention of the scientist-philosopher Pierre-Louis Maupertuis (1698–1759). In 1751, Maupertuis published a collection of meditations on the philosophy of biology under the title *Systeme de la nature*.⁴ In *Venus physique* (1745) he had argued for the view that natural organisms were formed in the womb by particles of matter that were pulled together by a force of attraction, supplemented by a kind of memory that reminded them where to go. His reference to “attraction” came from Newton’s theory of gravitation and the universal attractive force that all matter exhibited.

Newton's use of the word 'attraction' to describe his universal force was controversial. The word has clear animistic overtones, a fact not lost on the scientists and philosophers of the day. It recalls Empedocles' notion of Love as the universal attractive force, not to mention Cardano's "sympathy" of all things—along with their corresponding panpsychist theories of the world. In the 1680s Fontenelle had warned that granting the power of attraction to matter could lead to further animistic (and therefore digressive) attributions. In *Systeme de la nature*, Maupertuis did precisely that. He determined that attraction alone, or even attraction with a degree of memory, was not sufficient to construct the complex unity of a living creature. Somehow there had to be a form of intelligence in the matter itself: ". . . it is necessary to have recourse to some principle of intelligence, to some similar thing like that which we call *desire, aversion, memory*" (cited in Beeson 1992: 209). Thus, Maupertuis took the standard conception of the material world as consisting of extended matter, motion, and (since Newton) attraction and supplemented those qualities with intelligence. Beeson wrote:

Extension and movement are [for Maupertuis] not sufficient to explain the reproduction of living organisms, and it is therefore necessary to . . . abandon some simplicity in fundamental assumptions for the sake of closer agreement with observation. Maupertuis proposes the adoption of four concepts: extension, movement, attraction and intelligence, all viewed as essential properties of matter. (ibid.: 209–210)

Consequently, the smallest units of matter must have associated with them some smallest units of intelligence or perception. Maupertuis referred to such units as "percipient particles," a notion that recalls both the soul-atoms of Democritus and the monads of Leibniz. Here again we see a form of panpsychic dualism (or perhaps "dual-aspect panpsychism") argued for on the basis of First Principles. And these intelligent qualities are seen to account for the unified form and properties of a living organism (argument by Design).



Denis Diderot (1713–1784) is best known as co-editor (with Jean Le Rond d'Alembert) of the *Encyclopedie*, the monument to rationalist, secularist, and humanist thought of the French Enlightenment. The central project in all his writing was to dispel supernatural and theistic superstitions and to ground all phenomena in naturalistic explanations. The most important of Diderot's philosophical works is *Le Reve de d'Alembert* (D'Alembert's Dream) (1769). Written as a dialogue between Diderot, D'Alembert, and a few minor characters, it explored a variety of philosophical issues, including

psychology, morality, biology, and cosmology. It was Diderot's primary statement of his panpsychist beliefs.

Like LaMettrie and Maupertuis, Diderot attempted to grapple with a fundamental problem: given that there is no God and that there is no immaterial soul, one must still account for motion, life, and mind. All three men had a strong intuition toward unity and holism, and wanted to integrate the human into the natural world. They rejected the purely mechanistic interpretation of a universe of dead matter pushed around by myriad forces, and instead sought solutions in which life and sensitivity were inherent in all things. It is not surprising that, given these conditions and the state of scientific knowledge at the time, they came to similar conclusions.

Rather than label and categorize things, Diderot preferred to address general themes of a holistic and evolving nature. Of these themes, the two that are most relevant here are panpsychism and the unity of the self.

Diderot's panpsychist inclinations first appeared in his *Pensees sur l'interpretation de la nature* (Thoughts on the Interpretation of Nature) (1754). In section 50 he summarizes the "intelligent matter" hypothesis of Maupertuis (referred to by the pseudonym "Dr. Baumann, of Erlangen"). Diderot elaborates on this new modification of matter, referring to the various intelligent qualities as "desire, aversion, memory, and intelligence" (1754/1966: 79). These qualities Maupertuis "accepts as being present, in due proportion to their forms and masses, in the smallest particle of matter as well as in the very largest animal" (ibid.). Diderot, clearly impressed by this thesis, devotes a rather large section of *Pensees* to it. He does not, however, offer it up as his own theory, as he will do 15 years later.

The concept of "sensitive matter" is one of the central themes in *Le Reve de d'Alembert*. In the opening passage of section 1 ("Conversation between D'Alembert and Diderot"), D'Alembert challenges Diderot with the classic rebuttal to panpsychism: ". . . if this faculty of sensation . . . is a general and essential quality of matter, then stone must be sensitive." (ibid.: 49) Diderot's casual reply is "Why not?" The everyman D'Alembert answers "It's hard to believe." As the dialogue progresses, it becomes clear that there are two levels of sensitivity in matter: an active sensitiveness, such as is found in organic beings, and a passive sensitiveness, such as is found in rocks and inanimate objects. The passive becomes active when taken up in an organic body, as by being consumed; plants consume minerals, for example, and thus make their sensitivity active. (We see here a close connection to LaMettrie's distinction between "direct ability to feel" and "potential ability to feel.") And yet, even as Diderot distinguished degrees of sensitivity, it is clearly the sensitivity itself that is primary.

Throughout the dialogue there are repeated references to “the general sensitivity of matter.” Later we learn that “from the elephant to the flea, from the flea to the sensitive living atom, the origin of all, there is no point in nature but suffers and enjoys” (ibid.: 80). Diderot seems to simply accept this panpsychism (or rather pansensism) as a fundamental aspect of nature, and does not work it into a comprehensive theory of reality. This outlook recurred in his other writings. In *Elements of Physiology* we find the following passage:

Some day it will be demonstrated that sensitiveness or feeling is a sense common to all beings. There are already phenomena which suggest this. Then matter in general will have five or six essential properties: dead or living force, length, breadth, depth, impenetrability, and sensitiveness. (1774–1780/1937: 139)

Diderot effectively modified Maupertuis’ four essential properties of matter, arriving at force, extension, impenetrability, and sensitiveness. His notion of force incorporated the three general categories of kinetic (“living”) energy, potential (“dead”) energy, and gravity.

The second theme, unity of the self, addresses the combination problem of panpsychism: If each particle of matter is individually intelligent, how do they combine to form the single sense of being that we all feel? Leibniz solved the problem by creating the dominant monad. In *Le Reve de d’Alembert*, Diderot points toward an amorphous notion of unity of being that occurs when the intelligent particles are sufficiently interactive. He makes an analogy to a swarm of bees: “This cluster is a being, an individual, an animal of sorts.” (67) It is a unitary being because of the extremely tight interaction between parts, which pass from being merely “contiguous” to being truly “continuous.” Strength of interaction determines the intensity of being; one might also say that intensity of exchange determines intensity of mind. To Diderot the human body is similar to the swarm of bees. The body is a collection of organs which “are just separate animals held together by the law of continuity in a general sympathy, unity, and identity” (68). It is the “continual action and reaction” between parts that creates the unity. “It seems to me,” Diderot writes, “that contact, in itself, is enough.” (76)

4.2 Kant and Priestley

The forefront of panpsychist philosophy moved from France to Germany over the course of the 1700s. But before discussing the role of German Romanticism it is necessary to address two intermediate figures: Kant and Priestley.

Kant's (1724–1804) thinking on the matter of hylozoism and panpsychism underwent an interesting progression over the course of his life, moving from early sympathies to a final analytic rejection. There are three relevant passages.

The little-known booklet *Traume der Geisterseher* (Dreams of a Spirit-Seer) (1766) focuses on Kant's interest in the spiritual realm and the possibilities of trans-physical phenomena. Kant writes: "I confess that I am very much inclined to assert the existence of immaterial natures in the world, and to put my soul itself into that class of beings." (52) He adds in a footnote that whatever "contains a principle of *life*, seems to be of immaterial nature. . . . Those immaterial beings which contain the cause of animal life . . . are called spirits." He then addresses the idea of hylozoism or panpsychism:

For every substance, even a simple element of matter, must have an inner activity as the reason for its external efficiency, although I cannot specify in what it consists. (53–54)

Another footnote contains this illuminating and fascinating comment:

Leibniz says that this inner reason . . . is the *power of conception* [i.e. intelligence], and later philosophers received this undeveloped thought with laughter. But they would have done better if they had first considered whether a substance of the nature of a simple particle of matter is possible without any inner state. [If so, they would have to] think out another possible inner state than that of conceptions. . . . Everybody recognizes [that] even if a power of obscure conceptions is conceded to . . . matter, it does not follow thence that matter itself possesses power of conception, because many substances of that kind, united into a whole, can yet never form a thinking unit.

Kant thus views the combination problem as insurmountable, stating directly that the combination of many individually intelligent particles can never form a single intelligent entity. Beyond this, he does not absolutely rule out Leibniz's panpsychist thesis; he recognizes that the issue is not as clear-cut as many philosophers would suppose.

We see further evidence of his sympathies in the following chapter:

. . . to which members of nature life is extended, and . . . those [to which] degrees of it . . . are next to utter lifelessness, can, perhaps, never be made out with certainty. Hylozoism imputes life to everything; materialism, carefully considered, kills everything. (57)

That materialism "kills everything" is quite a statement. Kant seems to recognize a danger in this ontological view.⁵ He cites Maupertuis and his panpsychist theory of organisms, then goes on to observe that, like Newton, one *cannot* be sure that all things are not alive: "The undoubted

characteristic of life [is] free movement . . . , but the conclusion is not certain that, wherever this characteristic is not found, there is no degree of life." (ibid.) Though certainly not endorsing hylozoism, Kant is at least open to the possibility.

Fifteen years later, Kant's focus had shifted from hylozoism to something more akin to true panpsychism. In *Critique of Pure Reason* (1781) Kant famously argued that the *Ding an sich selbst* is inherently unknowable. Because it is an absolute unknown, almost nothing can be said of it. However, in one passage in book II of the Transcendental Dialectic (chapter 1, "Paralogisms of Pure Reason (B)") Kant accepts that the thing-in-itself may share some essential characteristic or quality with "mind."

In the short section titled "Conclusion, In Regard to the Solution of the Psychological Paralogism," Kant claims that his arguments "supply a sufficient answer to this question [of] the communion of the soul [i.e. mind] with the body." He elaborates:

The difficulty peculiar to the problem consists, as is generally recognized, in the assumed difference [in nature] between the object of the inner sense (the soul) and the [material] objects of the outer senses. But if we consider that the two kinds of objects thus differ from each other, not inwardly but only in so far as one appears outwardly to the other, and that what, as *Ding-an-sich-selbst*, underlies the appearance of matter, perhaps after all may not be so different in character, this difficulty vanishes. . . .

Thus he observes that *if* one assumes that the soul and the objects of the material world are fundamentally alike, i.e. of the same ontological class, *then* the problem of mind-body is resolved. Kant's wording suggests that he would look favorably on such an assumption, though he stops short of endorsing it. Clearly we cannot assign him a panpsychist view on the basis of this passage. Still, the implication is that matter, of which we *do not* know the true essence, is somehow like our mind, of which we *do* know, intimately, the essence. We may be mistaken about the true nature of mind, but we certainly know it more directly than anything else in the universe. One reasonable conclusion, therefore, would be that all of matter has a mind-like quality in and of itself.⁶ This leaves us, Kant goes on to say, with only the problem of "how *in general* a communion of [such] substances is possible." But he does not address this, saying that it lies not only "outside the field of psychology" but also "outside the field of all human knowledge."

Kant's *Critique of Judgment* (1790) demonstrates his final analytical stance. Here he writes that there are two types of philosophical systems that can

explain the “productive power” and “purposiveness” of nature: realism and idealism. Both of these can exist in two forms: physical and trans-physical. Physical realism, he tells us, “bases the purposes in nature . . . on the *life of matter* (either its own or the life of an inner principle in it, a world-soul) and is called *hylozoism*.” (239) This option, unfortunately, is inconceivable:

. . . the possibility of living matter cannot even be thought; its concept involves a contradiction, because lifelessness, *inertia*, constitutes the essential character of matter. The possibility of matter endowed with life . . . can only be used in an inadequate way . . . , [and] in no way can its possibility be comprehended *a priori*. . . . Hylozoism, therefore, does not perform what it promises. (242)

This seems to be Kant’s final word on the matter. Unfortunately, he never pursued the suggestion mentioned in *Critique of Pure Reason*. Apparently, for him the conceptual weaknesses could not offset the potential explanatory power.



As it happens, Joseph Priestley (1733–1804) did not see things this way. Priestley is best known for his discovery of oxygen (in 1774), but he was also an astute natural philosopher. He was concerned with the problem of mind and body, and he wrote a rather lengthy treatise on the subject: “Disquisitions relating to matter and spirit” (1777). Here he argued for the idea that mind and matter are not incompatible, Cartesian substances, but rather share common qualities—and in fact can be seen as different manifestations of the same underlying entity (the same view Kant held, although predating *Critique of Pure Reason* by four years).

Priestley begins by challenging the traditional view that matter is something defined by extension, inertness, and impenetrability. He accepts the first of these, but replaces the latter two with a pair of forces: “I . . . define [matter] to be a substance possessed of the property of *extension*, and of *powers of attraction or repulsion*.” (1777: 219) These three properties—extension, attraction, repulsion—are the only ones Priestley sees as necessary to account for all material phenomena. (His reference to the two opposing forces recalls Empedocles’ Love and Strife.)

In *Theoria philosophiae naturalis* (1758), the Italian scientist and philosopher Ruggero Boscovich anticipated Priestley’s theory. For Boscovich, the forces present in matter were the ultimate ontological reality (the theory known as dynamism). Priestley accepted and expanded on Boscovich’s dynamism, adding the quality of extension under the presumption that form, or shape, was also an essential quality of matter.

For Priestley, the overriding opposition between classical matter and spirit was that matter was solid and spatial whereas spirit was non-spatial and immaterial. This incompatibility was the source of the problem of mind-body interaction. Priestley saw that by dematerializing matter—by making it penetrable, i.e. pure force—he could remove this barrier. For him, mind was completely compatible with matter and could in fact be seen as a particular mode of matter:

. . . since it has never yet been asserted, that the power of *sensation* and *thought* are incompatible with these [powers of attraction and repulsion], I therefore maintain, that we have no reason to suppose that there are in man two substances so distinct from each other as have been represented. (ibid.)

Priestley sought a materialist monism. His monism shared some qualities with the monism of LaMettrie and Diderot; in particular, it saw matter as fundamentally dynamic and animated, and mind as a function of the organizational qualities of matter. Priestley sought to “prove the uniform composition of man” (220). For him, “*mind* . . . is not a substance distinct from the body, but the result of corporeal organization; . . . whatever matter be, . . . mind is nothing more than a modification of it” (ibid.). So mind reduces to matter, but matter which is, in some sense, fundamentally mind-like. Matter “ought to rise in our esteem, as making a nearer approach to the nature of spiritual and immaterial beings” (230).

Nowhere does Priestley explicitly state that all matter possesses mind, but this implication can be seen to follow from his premises. He is an implicit panpsychist, and someone who, at the time, was fundamentally challenging the inert-matter view of the world.

4.3 German Romanticism and the Naturphilosophie

In the late 1700s, philosophical opposition to mechanistic ontologies moved to Germany. Panpsychism continued to play a prominent role and can be seen emerging in the philosophies of Herder and Goethe.

Johann Herder (1745–1803) was a dynamist who rejected the idea that such a view implied materialism. He sought a naturalistic non-reductive ontology in which mind and matter were really different degrees of organization of a single underlying *Kraft* (force or energy). In denying materialism and placing “force” in a unique ontological category, Herder was one of the first explicit neutral monists of the modern era, though the term would not be used until the time of Russell.

In the late eighteenth century, science recognized many different forces in nature—gravity, magnetism, electricity, light, and motive force, among others. Herder's synthesizing and holistic vision sought to unify these forces as *Kraft*, of which the various *Kräfte* were different manifestations. Furthermore, *Kraft* was to be seen not merely as physical force but as an animating and illuminating energy, and the individual sub-forces were in themselves soul-like entities.

Herder wrote of the universal *Kraft* in *On the Cognition and Sensation of the Human Soul*:

Quite generally, nothing in nature is separated, everything flows onto and into everything else through imperceptible transitions; and certainly, what life is in the creation is in all its shapes, forms, and channels only a single spirit, a single flame. (1778/2002: 195)

Thus all material things, in addition to the standard forces of physics, are unified and vivified by the universal *Kraft*. The *Kraft* is at once a life-energy, spirit, and mind—recalling the *pneuma* of the Stoics.

The passage above could be interpreted as expressing a pure, almost idealist monism. However, Herder's thinking was more of a panpsychist variety in which each thing has an interior life and interior experience. In an early manuscript (1769), he described "how the human body, and by analogy, the planets, are formed by the action of an inner *Monas* [unity], *Kraft* [force], or *Seele* [soul/mind]" (Nisbet 1970: 10). His 1778 work refers to the Continuity argument and the process of analogical inference: ". . . the more we thoughtfully observe the great drama of effective forces in nature, the less we can avoid everywhere feeling *similarity with ourselves*, enlivening everything with our sensation" (1778/2002: 187). Later he became even more explicitly panpsychist. Nisbet (1970: 11) notes that Herder "represents the *Kräfte* of plants and stones as analogous to the soul. . . . Each endowed with a different degree of consciousness. . . ." In trying to classify Herder's metaphysical view, Nisbet goes through a number of 'panpsychism' synonyms and decides that 'pan-animism' is the most appropriate.⁷

The panpsychist theme continued in Herder's later writings. *Ideen zur Philosophie der Geschichte der Menschheit* (Ideas for the Philosophy of the History of Humanity) (1784–1791) includes this passage:

All active forces of Nature are, each in its own way, alive; in their interior there must be Something that corresponds to their effects without—as Leibniz himself assumed. . . . (book I, section XIII, cited in Clark 1955: 311)

Herder clearly saw such a panpsychist dynamism as an alternative to the reigning Cartesian mechanistic materialism, which he strongly opposed.

This opposition is consistent throughout virtually all of his philosophical writings. Nisbet notes that for Herder “the psychology of feeling tends to replace mechanical analysis. . . , and Kräfte increasingly supplant ‘dead’ matter” and that from 1769 on Herder “consistently attacks mechanistic theories of nature” (133).



Herder shared many opinions with his contemporary and friend Wolfgang von Goethe (1749–1832). Like Blake, Goethe infused his literary works with philosophical insight. The exemplary German Romantic, he combined a poetic, mystical feeling for nature with a strong sense of unity and holism.

Elements of panpsychism are found only indirectly in Goethe. First there is his general identification of Nature with God: “I have at times to resort to pantheism to satisfy my being.” (1824, cited at Sherrington 1949: 33) Then there is his frequent attribution of personal and human traits to the phenomena of nature. Sherrington notes that “in reading Goethe’s science we are never left long without a reminder of his tendency to personify Nature” (ibid.: 21). Goethe expresses this sentiment when he notes that Nature “reflects herself . . . everywhere in a manner analogous to our mind” (cited at Vietor 1950: 13). And we find suggestive passages such as “it is the observer’s first duty . . . to aim at the completeness of the phenomena . . . so that they will present themselves to one’s observation as an organization manifesting an inner life of its own” (cited at Naydler 1996: 83). The “inner life” of natural phenomena suggests the presence of mind in nature.

The panpsychist and hylozoist Haeckel cited Goethe on multiple occasions in support of his own ideas. Haeckel held that mind and matter were inseparable, and he attributed the same belief to Goethe:

As even Goethe has clearly expressed it, “matter can never exist and act without mind, and mind never without matter.” (1868/1876: 487)

Here we find a beautifully concise statement: no matter without mind, no mind without matter. There is no claim that mind is identical with matter, or that one can be reduced to the other; there is simply the statement that mind and matter are conjoined, that neither exists without the other. This is the essential feature of panpsychism.

Haeckel’s citation comes from a letter Goethe wrote in 1828, near the end of his life. The original passage is enlightening. Goethe notes that there are “two great driving forces in all nature: the concepts of *polarity* and *intensification*” (1828/1988: 6). The former is associated with the material dimension

of reality, the latter with the spiritual. He defines polarity in a very Empedoclean manner as “a state of constant attraction and repulsion”; intensification is an evolutionary imperative, a “state of ever-striving ascent” (ibid.). He continues: “Since, however, matter can never exist and act without spirit [*Seele*], nor spirit without matter, matter is also capable of undergoing intensification, and spirit cannot be denied its attraction and repulsion.”



Herder and Goethe articulated aspects of a holistic philosophy of nature, but its culmination in Germany was achieved in the Naturphilosophie of Schelling. Humans were unified deeply with nature, physical forces were seen as manifestations of a single underlying force, and mechanism was soundly rejected. Schelling synthesized these elements and created a comprehensive philosophical system. There is little direct evidence that Schelling was a panpsychist, but in his system we find some suggestive elements.

Schelling’s absolute idealism emphasized Mind as the underlying unity of all things. Everything found meaning and resolution in the Mind of the Absolute: “Nature is to be invisible mind, mind invisible nature.”⁸ Rothschuh described Schelling’s system as essentially that of an evolving spirit: “Nature is spirit in the course of becoming.”⁹

Schelling’s vision of evolving spirit appears to describe a cosmos wherein all things possess an element of mind. Werner Marx (1984: 58) notes that for Schelling “nature is rather a spirit that, in a dynamic series of stages from inorganic matter up to consciousness, is similar to an ego.” Thus, this evolving mind is in some sense a personality, one that is manifest in all levels of matter. Schelling understands matter as intimately connected to mind: “Matter is indeed nothing else but mind viewed in an equilibrium of its activities.” (1800/1978: 92) Mind in nature reveals itself as a form of will, which is a “primal being”; thus, Schelling was one of the first modern German philosophers to emphasize the importance of the will in ontology, following Bruno and Campanella¹⁰ and anticipating Schopenhauer, Hartmann, and Nietzsche.

5 Panpsychism, Mechanism, and Science in Nineteenth-Century Germany

Germany remained at the center of evolving views on panpsychism throughout the nineteenth century. Among the important philosophers advocating or sympathizing with such views were Schopenhauer, Fechner, Lotze, Hartmann, Mach, Haeckel, and Nietzsche. New developments in science, physics, and mathematics allowed both mechanists and panpsychists to strengthen their arguments, even as mechanism gained the upper hand. The first substantial overview of panpsychist philosophy, compiled near the end of the century by the philosopher Friedrich Paulsen, strongly emphasized these Germanic ideas.

5.1 Schopenhauer

Arthur Schopenhauer's (1788–1860) philosophical system is summarized in the title of his most famous work, *Die Welt als Wille und Vorstellung* (The World as Will and Idea).¹ According to his view, reality is comprehended in two distinct but connected ways.

First there is the sense in which everything is known only as a mental image, or mental construct, in the mind of the perceiver. When a given thing is perceived, what is presented in the mind is not the thing in itself but a representation of it as constituted by the sense impressions. When one is holding a red rose, what one perceives is not the rose itself but a collection of colors, scents, and tactile sensations. And so it is with every material thing perceived. What is known is only an “idea” or a “representation” of things, not those things as they actually are—again, classic Berkeleyan idealism. The brain, the body, and the senses all condition and select those bits of reality that contribute to the formation of ideas. Reality is not comprehended “as it is,” but as the body allows. From the perceiver's perspective, the idea is in fact the reality itself. Such an idealism has of course existed, in various forms, at least since the time of Plato. Berkeley and Kant formalized

it, but Schopenhauer formulated a completely novel interpretation in which all things, not just humans, possessed an idea of reality.

The second way of conceiving of the world is deduced from human introspection. The human body is only one of myriad objects in the world, but it is known in a unique sense—from “the inside.” The body, introspectively, feels emotions, memories, pains, and pleasures, but most fundamentally, says Schopenhauer, it knows and feels *desire*—that is, *will*. For Schopenhauer, the will is the ontological essence of the human being, our true inner nature.

But Schopenhauer continues his argument by noting that the human being is simply an object like every other in the world. If the human is essentially will, then so too is *everything*. Thus, he reasons that all things, in themselves, are just will. His overall conclusion is that the things of the world are both, and at once, idea from the outside and will from the inside: “For as the world is in one aspect entirely *idea*, so in another it is entirely *will*.” (1819/1995: 5)

The world as will directly challenged Kant’s conception of a fundamentally unknowable *Ding an sich selbst*. As Schopenhauer points out, Kant sees things in themselves as an unknowable X, whereas he looks within himself and sees primarily will—and then extends this via an Argument by Continuity to all objects in the universe. In fact the difference between the two views may not be as great as Schopenhauer presumes, if we recall Kant’s speculation that the *Ding an sich selbst* may be of a mind-like nature. Hartmann recognized this very point: “What Kant entertained as timid supposition, that the thing of itself and the active subject might be one and the same existence, Schopenhauer declared as categorical assertion, in that he recognized the will as the positive character of this essence.” (1869: 236) For Schopenhauer, the will takes on a clear and unambiguous mind-like character.

Schopenhauer thrust the concept of will into a central ontological role. Will, for him, was not merely the equivalent of human desire but was more generally a universal force, a drive, something that impelled all things and sustained all things. Hamlyn (1980: 95) argued that this will was “a kind of force which permeates nature and which thus governs all phenomena.” Magee (1983:145) described it as literally force or energy—making Schopenhauer out to be a dynamist or energeticist—and argued that the developments of twentieth-century physics had “provided the most powerful confirmation that could be imagined” of his philosophy.

Schopenhauer lends credence to this energeticist view in his own writing. On a number of occasions he equates will with the physical forces of nature.

For example, he notes that “the force which attracts a stone to the ground is . . . in itself . . . will” (1819: 38). In a later work, *Über den Willen in der Natur* (On the Will in Nature), he states that “generally every original force manifesting itself in physical and chemical appearances, in fact gravity itself—all these in themselves . . . are absolutely identical with what we find in ourselves as will” (1836: 20).

But Schopenhauer goes further. He speaks of material things as literally “objectifications of will”—as physical manifestations, or solidifications, or embodiments of will. Of the human body, he says that “the whole body is nothing but objectified will” and “the action of the body is nothing but the act of the will objectified” (1819: 33). His graphic explanations leave no doubt: “Teeth, throat, and intestines are objectified hunger; the genitals are objectified sexual desire.” (41) Objectification occurs in varying levels or degrees throughout nature, generally corresponding to the complexity of the object. The human being is the highest grade of objectification; the physical forces are the basest. “The most universal forces of nature present themselves as the lowest grade of the will’s objectification.” (61)

Since the will is clearly mind-like, panpsychism is a central feature of Schopenhauer’s entire philosophical system. “Schopenhauer,” Popper quipped (1977: 68), “is a Kantian who has turned panpsychist.” This panpsychist aspect is particularly evident in Schopenhauer’s concept of will as manifest in inorganic objects. Book II of *Die Welt als Wille und Vorstellung* focuses extensively on the identification of will with the forces of nature:

The force which stirs and vegetates in the plant, and indeed the force by which the crystal is formed, that by which the magnet turns to the North Pole, the force whose shock [results] from the contact between different metals, . . . even gravitation, . . . all these [are recognized] as in their inner nature . . . identical [to that] which is called will. (1819: 42)

This “will in nature” is the same in principle as the “will in man”:

[The will] is manifest in every force of nature that operates blindly, and it is manifest, too, in the deliberate action of man; and the great difference between these two is a matter only of degree of the manifestation, not in the nature of what is made manifest. (ibid.)

One can see in this quotation a hint of Spinoza’s idea that “all things are animate in varying degrees,” and in fact Spinoza was highly influential in Schopenhauer’s thinking. *Die Welt als Wille und Vorstellung* refers explicitly

to Spinoza's notion that all things, even stones, possess an aspect of mentality:

Spinoza says that if a stone which has been catapulted through the air had consciousness, it would think that it was flying of its own will. I add only that the stone would be right. That catapulting is for the stone what the motive is for me. . . . (ibid.: 58)²

The point here, of course, is that the inner nature of both men and stones is the same: will. "In people [will] is called character, while in a stone it is called quality, but it is the same in each." (ibid.)

Even as Schopenhauer denied consciousness to all but the animals, it is clear that the will was to be described in terms of the human personality, and as psychic or mental dispositions:

When we scrutinize [the forces of nature] closely, we observe the tremendous, irresistible force with which rivers hurry down to the sea, the persistence with which the magnet turns again and again to the North Pole, the readiness with which iron flies to the magnet, the eagerness with which in electricity opposite poles strive to be reunited, and which, just like human desire, is the more intense for being thwarted: . . . it will cost us no great effort of the imagination, even at so great a distance, to recognize our own nature. (ibid.: 50)

Schopenhauer's panpsychist view is reiterated in his other two major works, *Über den Willen in der Natur* and *Parerga und Paralipomena* (1851). In the former he looks to developments in the natural sciences as confirmation of his ideas. He finds in inorganic nature "absolutely no trace of a consciousness of an external world" (1836/1993: 82), yet even such things as "stones, boulders or ice floes" are "affected by an influence from without . . . which one can accordingly regard as the first step toward consciousness" (ibid.). And plants, though likewise lacking true consciousness, can be seen as experiencing "an obscure self-enjoyment" and "a feeble analogue of perception" (ibid.). In examining the study of gravitation and astronomy, he notes with satisfaction that Herschel and Copernicus spoke of gravity in terms of "desire" and "will": In 1883 Herschel wrote that objects drawn to the Earth are "impelled to this by a force or effort, the direct or indirect result of a consciousness and a *will* existing somewhere" (85); Copernicus wrote in *De revolutionibus* "I believe that gravity is nothing but a natural *craving*. . . ." (86). And Schopenhauer claims, for the record, to have been "the first to say that a *will* is to be attributed to the inanimate, to the inorganic" (88).³ This theme continues in *Parerga und Paralipomena*. In a notable passage near the end of the book, Schopenhauer decries the "fundamentally false antithesis between *mind* and *matter*"

(1851/1974: 212). To the extent that one can speak of “mind” or “matter” in the real world,⁴ mind must be equally attributable to both organic and inorganic objects. Any two material objects, such as (to use his examples) the human body and a stone, have internal qualities that are of necessity alike. Both are driven by “forces of nature,” both are composed of matter, and both are thus describable in the same metaphysical terms. If in one case we find mind, so must we find it in the other:

Now if you suppose the existence of a *mind* in the human head, . . . you are bound to concede a mind to every stone. . . . All ostensible mind can be attributed to matter, but all matter can likewise be attributed to mind; from which it follows that the antithesis [between mind and matter] is a false one. (213)

In the same passage, Schopenhauer notes the limitations of the mechanistic philosophy in comprehending such matters. The mechanist knows only the mathematically derivable effects of nature, not nature as it is in itself. For a mechanist, “the exertion of weight in a stone is every bit as inexplicable as is thought in a human brain,” and, insofar as these natural phenomena are related, “this fact would suggest the presence of a mind in the stone” (212).⁵ The mechanistic account of nature “is limited . . . to determining its spatial and temporal qualities” (213). Furthermore, “as soon as we go beyond what is purely mathematical, . . . we stand before modes of expression which are just as mysterious to us as the thought and will of man, . . . for [to the mechanist] unfathomable is what every natural force is” (*ibid.*).

Schopenhauer explicitly acknowledges his debt to Empedocles, especially for the general concept of existence as struggle between forces of will (recall that for Empedocles these forces were Love and Strife): “Everywhere in nature we see strife, conflict, and the fickleness of victory. . . . This strife may be seen to pervade the whole of nature; indeed nature . . . exists only through it.” (*ibid.*: 73–74) He then cites Aristotle’s commentary: “. . . as Empedocles says, if there were no strife in things, everything would be one and the same” (*ibid.*, citing *Metaphysics*, 1000b1). Thus nature reflects the law of the jungle, each form of existence competing with all others to maintain and fulfill itself.⁶

Schopenhauer saw struggle and strife all around him, and this led to his notoriously pessimistic assessment of life in general. He was exceptional in this instance; virtually all panpsychist philosophers adopted sympathetic, compassionate, optimistic worldviews. Most philosophers saw wonder and transcendence in the fact that mind pervaded the universe; Schopenhauer saw a world of objectified wills locked in eternal struggle for dominance—

a view that anticipated (by nearly 40 years) Darwin's notion of the survival of the fittest.

5.2 Fechner

Gustav Fechner (1801–1887) was, in a sense, the antithesis of the pessimist Schopenhauer. Fechner's vibrant, exuberant, life-enhancing perspective on the world was intimately and openly linked to his panpsychist philosophy, perhaps more so than any other major philosopher. He was also a first-rank scientist and mathematician. He virtually invented the science of psychophysics, and he discovered the principle that the perceived strength of a sensation is proportional to the logarithm of the intensity of the stimulus ("Fechner's Law").

Fechner wrote half a dozen major philosophical works, including *Nanna, oder über das Seelen-Leben der Pflanzen* (Nanna, or on the Soul-Life of Plants, 1848), *Zend-Avesta* (1851), *Über die Seelenfrage* (On the Soul-Question, 1861), and *Die Tagesansicht gegenüber der Nachtansicht* (The Daylight View as Opposed to the Night View, 1873). Unfortunately, few of his works have been translated into English, and this greatly limits his reputation in the Anglophone world. There are only two English books that give his philosophy a proper presentation. The first is a series of partial translations of his major works compiled under the title *Religion of a Scientist*; the second is a relatively lengthy and sympathetic discussion by William James in *A Pluralistic Universe* (1909). James was greatly impressed by Fechner, calling him "a philosopher in the 'great' sense" (1909: 149) and noting that the current state of knowledge of psychology, psychophysics, and religion had led to "a decidedly formidable probability in favor of a general view of the world almost identical with Fechner's" (309–310).

The most important aspect of Fechner's panpsychism is his conception of the world as composed of a hierarchy of minds, or souls (*Seele* in German). There are souls "below" us in plants, and there are souls "above" us in the Earth, the stars, and the universe as a whole. Humans are surrounded, at all levels of being, by varying degrees of soul. This is Fechner's "daylight view"—the human soul at home in an ensouled cosmos. This he contrasted to the materialist "night view": humans alone, isolated points of light in a universe of utter blackness.

Consider separately Fechner's discussions of the lesser (sub-human) and greater (super-human, or collective) minds. The former consists almost entirely of a discussion of plants, of which Fechner had no doubt that they possessed minds. His central argument for this view was the Continuity

argument, making an analogy with human beings⁷—though Fechner employed at least four other arguments for panpsychism, as shown below. The Continuity argument appears repeatedly in *Nanna*. For example:

If we take a cursory glance at some of the outstanding points, is not the plant quite as well organized as the animal, though on a different plan, a plan entirely of its own, perfectly consonant with its idea? If one will not venture to deny that the plant has a life, why deny it a soul? For it is much simpler to think that a different plan of bodily organization built upon the common basis of life indicates only a different plan of psychic organization. . . . Whether it be a plant or an animal, the complexity of structure and process is so completely analogous, except that the cells are differently arranged. . . . (1848/1946: 168–169)

Because we cannot know directly the inner life of a plant, scientific or logical analysis is useless; “in this field, one must remember, there is nothing we have to rely upon except analogy” (ibid.: 175).

Fechner’s personal, intuitive feel for the plant-soul is abundantly evident in his writing. One finds passionate and poetic words, such as the following:

I stood once on a hot summer’s day beside a pool and contemplated a water-lily which had spread its leaves evenly over the water and with an open blossom was basking in the sunlight. . . . It seemed to me that nature surely would not have built a creature so beautiful, and so carefully designed for such conditions, merely to be an object of idle observation. . . . I was inclined rather to think that nature had built it thus in order that all the pleasure which can be derived from bathing at once in sunlight and in water might be enjoyed by one creature in the fullest measure. (177)

Or consider this passage, in which Fechner describes the glory of the daylight view:

With the abolition of the plants from the realm of souls how sparsely scattered would sensibility be in the whole realm of nature . . . ! How different it all is, if the plants have souls and are capable of feeling! . . . Is it not more beautiful and glorious to think that the living trees of the forest burn like torches uplifted towards the heaven? To be sure, we can only think this; we do not directly see anything of these soul-flames of nature; but since we *can* think it, why are we not willing to? (180)

We see here a culmination and synthesis of Goethe’s poetic imagery and Schelling’s Naturphilosophie; it is a rebirth of the religious view of nature, and perhaps one of the earliest forerunners of the contemporary ecological worldview that, in Skolimowski’s words, sees “the world as sanctuary.”⁸ We find even stronger evidence of this in Fechner’s discussion of the earth-soul (see below).

Why are plant-souls important? They are the most direct indicators of the overall panpsychic nature of the world. Fechner explained this in *Über die Seelenfrage*:

. . . belief in the plant soul is just a little instance of the general situation . . . , for in this whole question the least and the greatest things are closely connected. . . . I considered that in the little soul of the plant I had found a little handle by which faith in the greatest things could be more easily hoisted to the big pedestal. (1861/1946: 138–139)

And, as he stated in *Nanna*, “the decision as to whether the plants are animated or not decides many other questions and determines the whole outlook upon nature” (1848/1946: 163).

Of course, for Fechner this “whole outlook” is a panpsychic one in which every thing and every part of every thing is ensouled. Regarding plants, “there are as many individuals as there are leaves on the tree, nay, there are in fact as many as there are cells” (ibid.: 204). These individuals, whether cells or whole plants, are not simply part of some larger mind; they possess souls in their own right: “It is only an independent animate life we have in mind when we enquire about the souls of plants.” (165) Each thing has its own unique view on the world and interacts with the world as a unitary mind.

Perhaps more important than Fechner’s elaborations on the plant-soul was his discussion of (in James’ words) the “superhuman consciousness”—the mind of society, of the Earth, of the stars, and of the cosmos. Fechner was the first scientist-philosopher to examine these possibilities seriously and to regard them as actual features of reality. James’ excellent summary is quoted here at length:

In ourselves, visual consciousness goes with our eyes, tactile consciousness with our skin. . . . They come together in some sort of relation and combination in the more inclusive consciousness which each of us names his *self*. Quite similarly, says Fechner, we must suppose that my consciousness [and yours, though] they keep separate and know nothing of each other, are yet known and used together in a higher consciousness, that of the human race. . . . Similarly, the whole human and animal kingdoms come together as conditions of a consciousness of still wider scope. This combines in the soul of the earth with the consciousness of the vegetable kingdom, which in turn contributes . . . to that of the whole solar system, and so on from synthesis to synthesis and height to height, till an absolutely universal consciousness is reached. (1909: 155–156)

So here is a view of mind as a nested hierarchy, reaching from the lowest forms to the highest. It is, as James said, “a vast analogical series, in which the basis of the analogy consists of facts directly observable in ourselves” (156).

Fechner's view was a pure pluralist panpsychism, and it was very close to that of James. James was careful to emphasize that all these levels of hierarchy in the world possess, individually, their own minds: "The vaster orders of mind go with the vaster orders of body. The entire earth . . . must have . . . its own collective consciousness. So must each sun, moon, and planet; so must the whole solar system. . . . So has the entire starry system as such its consciousness. . . ." (ibid.: 152–153) The limit in this sequence, the mind of the cosmos, Fechner took as God.

Particularly interesting is Fechner's emphasis on the Earth as a consciousness and spirit, an "angel" that supports all life. His comments strongly anticipated the recent concept of Gaia, of the Earth as a living, sentient being. The idea of an Earth-soul was critical to Fechner: "Just as man is the starting point . . . for belief in animate character of all other creatures, so is the animated earth the starting point . . . for belief in the animate character of all other stars. . . ." (1861: 150) As with plants, Fechner starts with a Continuity argument: ". . . is not the earth in its form and content, like our bodies, and like the bodies also of all animals and plants . . . ?" (155) He then lays out four points in support of this. First he notes that the Earth is a unified system, relatively closed and well defined. Second, it develops, like living organisms, from within; it is relatively self-sufficient, and it contains its own means for self-realization. Third, it is a complex being, vastly more so than any mere plant or animal. Fourth, it is a unique member of the class of planetary bodies, which constitute a kind of "species" of things. Beyond these scientific arguments, Fechner clearly adopted a spiritual and reverential attitude toward the Earth; it was not just some animated rock, it was his sacred home:

One spring morning I went out early: the fields were greening, the birds were singing, the dew glistening; . . . it was only a tiny fraction of the earth, only a tiny moment of its existence, and yet, as I comprised more and more in the range of my vision, it seemed to me not only so beautiful but so true and evident that it is an angel, so rich and fresh and blooming, and at the same time so stable and unified, moving in the heavens, turning wholly towards heaven its animated face, and bearing me with it to that same heaven—so beautiful and true that I wondered how men's notion could be so perverted as to see in the earth only a dry clod. . . . (1861: 153)

Such a divine being deserves our most profound reverence. As James said (1909: 153), Fechner "treats the earth as our special human guardian angel; we can pray to the earth as men pray to their saints."

Though relying on analogy, Fechner used many types of arguments to make his claim for panpsychism. Above we have seen a number of arguments by Continuity, but he made at least four other types of argument:

In-Dwelling Powers—Plants have the power to take ordinary matter and make it living, and in this sense they have more “vital force” than do animals. “Out of raw earth, water, air, and decaying substances the plant makes glorious forms and colors.” (1848: 184) *Non-Emergence*—The Earth must be sentient, because “animate beings cannot arise from inanimate” (1861: 156). *Design*—The cosmos creates ensouled beings in order to attain full and complete enjoyment of existence. (Recall the passage on the water lily.) *Theological*—Fechner admitted that there is an element of faith involved here and wrote that “however we begin it or however we end, we shall not be able to discover and impart any exact proofs” (ibid.: 135). He noted that even in traditional theology the Spirit of God is everywhere: “If one concedes a God who is at once omnipresent, omniscient, and omnipotent, then in a certain sense the universal animation of the world by God is already admitted. . . .” (1848: 163–164)

Fechner made clear that his entire philosophical system was intended as a literal truth of reality: “All this is not metaphorical, is not an hypothesis: it is a simple and literal statement of how things are.” (1861: 153)

5.3 Other Scientist-Philosophers of the Age

Among the German scientist-philosophers, Fechner was the outstanding proponent of a panpsychic worldview. However, a few other thinkers—major philosophers in their own right—merit discussion. They will be addressed in the order in which their major panpsychist views emerged.

R. Hermann Lotze (1817–1881), trained as a physician and as a philosopher, saw merit in both mechanism and idealism yet sought to avoid the more extreme claims of each. He saw that mechanistic materialism was coming to dominate the philosophical and cultural landscape, and he was deeply concerned about the loss of reverence and wonder in the world.

Lotze’s major work, *Microcosmos* (1856–1864), was organized into five books, titled Body, Soul, Life, Man, and Mind. In it he described his comprehensive views on mind and matter. He prefaced the entire discussion by describing the antipathy between “mechanical science” and “Philosophy of the Feelings.” Here we find one of the first explicit acknowledgments of two competing worldviews, two completely divergent platforms from which to understand the cosmos. As the mechanical view came to dominate, its weaknesses became apparent. The proponents of this view were becoming increasingly bold, even arrogant, and they showed utter disregard for the spiritual aspects of life. As Lotze explained, these people “estimate the truth

of their new philosophic views in direct proportion to the degree of offensive hostility which [this view] exhibits toward everything that is held sacred by the living soul of man" (1856–1864/1971: iii). They forgot that the true nature of intellectual inquiry is to provide ultimately "one meaning": "to trace an image of the world from which we may learn what we have to reverence as the true significance of existence" (ix). Mechanism disintegrated the harmony of the ancient cosmic order, and "the further advance of mechanical science begins to threaten with similar disintegration the smaller world, the *Microcosm of man*" (xv).

The mechanist philosophers sought to describe everything in terms of forces and laws, but they overlooked that such things "are not the ultimate components of the threads that weave the texture of reality" (xii). The reality Lotze has in mind is a panpsychic reality rather similar to Leibniz's monadology. In the first chapter of book I, he recounts the history of animism and its attribution of personal spirits to nature; he also examines its role in satisfying a deeper spiritual need of humanity—the need to feel at home in the cosmos. Mechanistic philosophy has taken us completely away from this primitive worldview, and Lotze slowly leads the reader back toward acceptance of just such a world. In book II he introduces the notion that all matter has "a double life, appearing outwardly as matter, and as such manifesting . . . mechanical [properties, while] internally, on the other hand, moved mentally" (150). He speaks of this inner soul- or mental-life as being an "absolute indivisibility" (157), and he proceeds to draw analogies between the soul and the indivisible atoms of matter.

In a very Leibnizian manner, Lotze proposes that in fact atoms are prime candidates for possessing an inner psyche: "We once again take for granted in the multitudinous connected atoms of the body that internal psychic life which . . . must be attributed to all matter." (161) Lotze's full panpsychist view is finally laid out in book III, where he makes his bid for "a thoroughgoing revolt of the heart against the coldness of a theory that transforms all the beauty and animation of forms into a rigid physico-psychical mechanism" (344). His panpsychism is founded on the principle of the indivisibility of the atom. Matter as "infinitely divisible extension" is "an illusion" (354); rather, matter consists of point-like atoms structured in a cohesive pattern by their respective forces. It is precisely this point-like nature of the atom that permits us to see it as a single unifying center of experience, with its own psychic life:

The indivisible unity of each of these simple beings [atoms] permits us to suppose that in it the impressions reaching it from without are condensed into modes of

sensation and enjoyment. [As a result,] no part of being is any longer devoid of life and animation. (360)

And, like the ancient Greeks, Lotze accepts that motion is ultimately attributable to such a psyche: “We must . . . in general allow and maintain that all motion of matter in space may be explained as the natural expression of the inner states of beings that seek or avoid one another with a feeling of their need. . . .” (363)

The psychic life of atoms is joined together to create the soul of the body. For Lotze this occurs in a very specific and fundamental process of two-way interaction. He explains that bi-directional interaction is in fact the very basis of ontology (both physical and mental). Kuelpe (1913: 168) commented on this aspect of Lotze’s philosophy: “We know real relations . . . only in the form of reciprocal action. Consequently the whole problem of ‘being’ narrows down to acquiring an understanding of reciprocal relations.” Lotze then claims that the soul, as a spiritual being, stands as an unchanging entity in relation to these changing reciprocal actions. To this Kuelpe added:

Consequently all things, whose unity we recognize and for which we presuppose real relations, must be considered after the analogy of our own inner being, as spirits or souls. According to this, our body is regarded by Lotze, as it was earlier by Leibniz, as a multiplicity of individual souls. . . . (171)

Kuelpe believed that this “theory of reciprocal action is the most original and most important point” of Lotze’s metaphysics (173). It is undoubtedly a central aspect of his panpsychism, as it offers an explanation for the combination problem that faces any monad-like ontology.

Lotze acknowledged the *prima facie* improbability of his view: “Who could endure the thought that in the dust trodden by our feet, in the . . . cloth that forms our clothing, in the materials shaped into all sorts of utensils . . . , there is everywhere present the fullness of animated life . . . ?” (1856–1864: 361) And yet this view changes one’s outlook on the world; “dust is dust to him alone whom it inconveniences”⁹ (ibid.). Ultimately it is the “beauty of the living form [that] is made to us more intelligible by this hypothesis” (366). And this, says Lotze, is precisely why we must accept his view. Science itself neither wants nor needs panpsychism—rather, it is needed to satisfy the human spirit, to make the nature of soul comprehensible.



Eduard von Hartmann (1842–1906) further developed Schopenhauer’s system of the world as will and idea, combining elements of Leibniz, Schelling,

and Hegel into a doctrine of spiritual monism. In his most famous work, *Die Philosophie des Unbewussten* (Philosophy of the Unconscious) (1869), he articulates a view of the *unconscious will* as the cause of all things. The fact that matter is resolvable into will and idea leads Hartmann to conclude “the essential likeness of Mind and Matter” (1869/1950, volume 2: 81). Like Schopenhauer, he holds to a dynamist conception of matter, of the will as manifest in elementary atomic forces:

Hencewith is the radical distinction between spirit and matter abolished; their difference consists only in higher or lower forms of manifestations of the same essence. . . . The identity of mind and matter [becomes] elevated to a scientific cognition, and that, too, not by killing the spirit but by vivifying matter. (180)

Hartmann continues by noting that previous attempts at monism were extreme: materialism denied spirit, and idealism denied matter. He sees his monism as a system that does justice to both.

Like Fechner, Hartmann saw each cell of the organic body as endowed with consciousness. The animal “has as many (more or less separate) consciousnesses as he has nerve-centers, nay, even as he has vital cells” (225). These individual consciousnesses are united through intimate communication:

Only because the one part of my brain has a direct communication with the other is the consciousness of the two parts unified; and could we unite the brains of two human beings by a path of communication equivalent to the cerebral fibers, both would no longer have two, but one consciousness. (224)

Communication and exchange thus resolve the combination problem, a view that recalls Diderot’s claim. Hartmann’s work was prescient but not very influential. His focus on the unconscious reappears, without credit, in the writings of Haeckel and Paulsen (see below). His overall synthesis of ideas was underappreciated by later philosophers, in Germany and elsewhere.



Ernst Mach’s (1838–1916) philosophical writings emerged in the early 1880s. Mach, an Austrian physicist, was known more for his scientific advances than for his philosophy. Nonetheless, he made substantial contributions to the philosophy of science, and he was an early contributor to the field of logical positivism. For Mach, the aim of science was to predict and describe, and only secondarily to explain. His epistemology was strongly empiricist.

Mach developed a neutral monistic philosophy in which the primary substance of existence was neither mind nor matter but rather “sensations.”

His realization of this led him rather suddenly to a panpsychist conception of reality. "In adolescence," Hamilton recounts (1990: 127), "Mach was a Kantian, but then he reacted against the thing-in-itself, experiencing a panpsychic epiphany in which (to quote Mach) 'the world with my ego suddenly appeared to me as one coherent mass of sensations.'"

Mach articulated this view in *The Science of Mechanics* (1883/1942: 579): "Properly speaking the world is not composed of 'things' . . . but of colors, tones, pressures, spaces, times, in short what we ordinarily call individual sensations." On first glance the view that all things are sensations recalls Berkeleyan idealism, but then it becomes clear that there is no observing mind involved. One might call it a pansensist view, but it is clearly different from the pansensism of Telesio or Campanella; they held that all things do sense (i.e. have the power of sensing), whereas Mach holds that all things in themselves *are* sensations. But who or what is doing the sensing? Or are things simply subjectless sensations? Mach once accepted the idea of a personal ego, but eventually he dropped it. He thus seems to ultimately have argued for a theory of "objective sensations" independent of any so-called ego (subject).¹⁰

If Mach is less than clear on the details of his pansensism, he is unambiguous about his monist ontology and its panpsychist implications. He notes that "the fundamental character of all these [human] instincts is the feeling of our oneness and sameness with nature; a feeling . . . which certainly has a *sound basis*" (ibid.: 559). He continues by noting that both mechanistic monism and animistic monism are inadequate worldviews:

. . . our judgment has grown more sober. . . . Both [the mechanical and animistic mythologies] contain undue and fantastical exaggerations of an incomplete perception. Careful physical research will lead . . . to an analysis of our sensations. We shall then discover that our hunger is not so essentially different from the tendency of sulphuric acid for zinc, and our will not so greatly different from the pressure of a stone, as now appears. We shall again feel ourselves nearer nature, without its being necessary that we should resolve ourselves into a nebulous and mystical mass of molecules, or make nature a haunt of hobgoblins. (560)

Clearly Mach is sensitive to the close association between his view and primitive animism, and he wants to make nature sensate without introducing personal spirits. He seems to draw inspiration from Schopenhauer (note the comparison between "will" and "pressure of a stone"), if only implicitly, and we know from his other writings that he was highly influenced by Fechner. Mach equates the processes of nature with human inclinations and feelings, and his opposition to mechanistic ontology steers him toward a view of "nature as animate" rather than "human as

mechanical.” His particular form of pansensism led the way for the soon-to-follow developments of James (radical empiricism) and Whitehead (process philosophy).



One of the first major philosophers to embrace Darwin’s theory of evolution was the biologist and philosopher Ernst Haeckel (1834–1919). Haeckel, who developed the biogenetic law that ontogeny recapitulates phylogeny, quickly became known as the leading German Darwinist. He developed a monistic philosophy in which both evolution and the unity of all natural phenomena played major roles. His system was clearly panpsychist, even pantheist, and he strongly opposed the mysticism and irrationalism of Christianity.

Even in his first philosophical work, *The History of Creation* (1868), Haeckel vigorously promoted his monistic philosophy, using the theory of evolution as evidence. The unity and relatedness of all living things convinced him that all dualities were false, and especially that of body and mind. Furthermore, mind-body duality was a particular instance of the physical duality of matter and force (or energy), and hence that too was a false duality; body was equated with matter, mind was equated with energy, and all were intimately connected:

. . . body and mind can, in fact, never be considered as distinct, but rather that both sides of nature are inseparably connected, and stand in the closest interaction. . . . The artificial discord between mind and body, between force and matter, . . . has been disposed of by the advances of natural science. . . . (1868/1876: 487)

Science had now achieved what philosophy alone could not: compelling proof of the monist worldview. Truth was to be found in nature, and it was therefore “necessary to make a complete and honest return to Nature and to natural relations” (496). Natural science had proved the truth of evolution, and this theory promised great things for humanity: “[In the future] mankind . . . will follow the glorious career of progressive development, and attain a still higher degree of mental perfection” (495).

Haeckel was explicitly panpsychist by 1892. In an article in *The Monist* he wrote: “One highly important principle of my monism seems to me to be, that I regard *all* matter as *ensouled*, that is to say as endowed with *feeling* (pleasure and pain) and *motion*. . . .” (1892: 486) Here he offered one argument for panpsychism, namely that “all natural bodies possess determinate chemical properties,” the most important being that of “*chemical affinity*.”

This affinity, Haeckel argued, can only be explained “on the supposition that the molecules . . . mutually *feel* each other” (483). Elsewhere he employed evolution on behalf of the Continuity argument, claiming that evolution shows “the essential unity of inorganic and organic nature” (1895: 3). Evolutionary monism strikes at the heart of both the religious worldview and the mechanical philosophy: “Our conception of Monism . . . is clear and unambiguous; . . . an immaterial living spirit is just as unthinkable as a dead, spiritless material; the two are inseparably combined in every atom.” (58)

Haeckel’s most famous work, *The Riddle of the Universe* (1899), was meant to be a popular book, explaining to the general public the essentials of monism. It succeeded, becoming a best-seller in Europe—rare for a work of natural philosophy. Drawing on the latest developments in physics, Haeckel articulated his monism, then claimed that science had proved the conservation of mass, the conservation of energy, and the equality between matter and energy. He arrived at a neutral-monist position in which his ultimate reality was “substance,” which possessed two simultaneous attributes: matter and energy. He embraced the term “force-matter” (attributable to H. Croell), which was virtually identical to our present-day “mass-energy.” This was a significant milestone in the history of monistic philosophy. From the earliest days of philosophy, when Empedocles argued that all reality was composed of the four elements (fire, air, water, earth) and the two forces (Love and Strife), philosophers had sensed that things like mass and energy were of fundamental importance, but the monists had had difficulty explaining just how these two entities were to be unified. Haeckel saw in evolutionary monism the resolution to many age-old problems in philosophy.

The specific resolution that Haeckel envisioned was equating mass with body and energy with spirit and then uniting these two pairs in an explicitly Spinozan manner. Haeckel made this case throughout *The Riddle of the Universe*: All living creatures, microbes included, possess “conscious psychic action.” The inorganic world also possesses an inherent psychic quality, though he takes care to emphasize that this is ‘unconscious’ rather than ‘conscious’ mentality. This applies even to the atoms: “I conceive the elementary psychic qualities of sensation and will, which may be attributed to atoms, to be *unconscious*. . . .” (Haeckel 1899/1929: 179)

One of Haeckel’s last major works, *The Wonders of Life* (1904), is primarily an elaboration of his previous ideas. Here, though, he refers to himself for the first time as a hylozoist, apparently fearing (unnecessarily) the connotation of consciousness with the term ‘panpsychism’. “Monism,”

he writes, “is best expressed as hylozoism, in so far as this removes the antithesis of materialism and spiritualism (or mechanism and dynamism).” (88) And here he first proposes a third fundamental attribute to his one substance—to matter and force he adds *psychoma* (“general sensation”). This is his response to charges that mere matter and force/energy are not in themselves “psychic” enough to account for mind. Paraphrasing and expanding on Goethe, he summarizes his view as follows: “(1) No matter without force and without sensation. (2) No force without matter and without sensation. (3) No sensation without matter and without force.” (ibid.: 465)

During Haeckel’s lifetime, philosophy and science diverged to the point that he could be criticized by professional philosophers as a mere scientist. This was exacerbated by his arrogant claims that natural science had solved problems that traditional philosophy found intractable. He drew the ire of noted philosophers of the day, most notoriously Friedrich Paulsen (1846–1908). Paulsen himself was a panpsychist who had advocated a view that was substantially in agreement with Haeckel’s.¹¹ The root of the problem seems to have lain in the fact that Haeckel’s primary training was in biology and science, and he came rather late, but spectacularly successfully, to philosophy—especially with *The Riddle of the Universe*. Paulsen disliked Haeckel’s claim that evolutionary theory was the key to philosophical progress and his belief that both religion and classical metaphysics had been defeated by natural science. The criticisms have some merit, but Paulsen’s disagreements seem to center more on professional competition than on substantial philosophy.

5.4 A Survey of the Field

Paulsen is an important figure in his own right. His 1892 *Introduction to Philosophy* was the first work to present a detailed academic survey of panpsychism and the first to review and summarize a number of historically important positions. In it Paulsen also articulated his own views on panpsychism—views that were substantially in line with those of Fechner, Schopenhauer, and Leibniz.

Paulsen’s emphasis was on German thought of the 1800s. In addition to Fechner, Schopenhauer, and Leibniz, he discussed the ideas of Lotze, Schelling, Wundt,¹² von Naegeli, and Zoellner, but he also referred to the panpsychist arguments of Spinoza, Hoeffding, and Du Bois-Reymond. Paulsen’s survey is far from exhaustive; he mentions early Greek thinkers only in passing, he makes no reference at all to Hellenistic philosophy,

Renaissance naturalism, or French vitalist materialism, and he inexplicably ignores the work of Hartmann and Mach. In spite of these weaknesses, *Introduction to Philosophy* is an outstanding book, presenting virtually every extant argument (at that time) for panpsychism. It is written with exceptional clarity, and the English translation by Thilly is highly commendable. Panpsychism is not the entire focus of the book, but it is clearly a central theme, forming the core of chapter 1 and persisting as a primary underlying concept throughout. Many of Paulsen's formulations of existing arguments are still advocated and debated today, so it is worthwhile examining his general case for panpsychism in some detail.

Paulsen begins by attacking the basis of materialism. He claims that the materialistic theory (characterized as the theory that "all reality is corporeal or the manifestation of corporeality") is an inadequate conception of reality. He immediately adopts an idealist standpoint: "Bodies have [only] phenomenal existence. . . . Their entire essence is a content of perception." (1892/1895: 75) He then attributes to materialist philosophers two views: that "states of consciousness are effects of physical states" (epiphenomenalism) and that "states of consciousness . . . are nothing but physical states of the brain" (identity theory). He dismisses the second view, that "thoughts are movements in the brain," by claiming that such a statement has no meaning. One is then obliged to consider that the physical and the psychical bear some sort of relationship to one another. This relationship must be either interactionist (and hence causal) or parallelist (and acausal). Materialism, Paulsen claims, typically opts for the former. But this involves a "transformation of motion or force into thought," resulting in a "destruction of energy" in the physical realm—a recognized impossibility. Similarly, a transference from the psychical to the physical would appear as "creation out of nothing" and hence is impossible. Thus, one is forced to conclude that a form of parallelism must be true.

Parallelism, or acausality, logically assumes that the mental does not affect the physical, and conversely that the physical does not affect the mental. The first condition leads one to the view that "the living body is an automaton" (87), albeit a complex and sophisticated one. Of the second, Paulsen states that psychical events, such as a particular sensation, must have a cause; since the cause cannot be physical (under the conditions of parallelism), then it must be psychical—that is, mental/psychical events are caused only by other such (preceding) events.

Paulsen concludes, along with Spinoza and Fechner, that physical events move along in corporeal causal chains, mental events move along

in psychical causal chains, and the two chains simply proceed together; they are "concomitant." Furthermore, Paulsen claims that of the two chains the psychical is the more fundamental, because it is "the representation of reality as it is by itself and for itself" (92). He attributes this advance to Leibniz. And it justifies Paulsen's claim that such a view is a form of idealism.

Paulsen then addresses the issue of panpsychism: In which physical structures does this parallel chain of events exist? Like Schopenhauer, he begins introspectively: Each person is directly aware of his own mental states. He then extends this by analogy to other human beings and deduces the existence of others' mental states. The crucial question is "How far may this inference be extended?" The commonly accepted view (at the time) was to include all animals, but Paulsen notes that there is no sharp dividing line between animals and plants; therefore the rational conclusion is that plants possess an inner life as well. He notes additional similarities between the two: in aspects of nutrition, cellular structure, genetic reproduction, "development and death," even "language." In considering whether such a position constitutes a proof of the plant-soul, Paulsen quickly turns the tables on the materialists: "To deny that there is [a plant-soul], would, to say the least, require some proof." (96) He reiterates: "The burden of proof rests on him who denies the validity of the analogical syllogism. He must show why it is not valid here, otherwise his negation is arbitrary." (98)

Finally Paulsen arrives at the main point of contention: the inorganic world. In brief, his arguments are the following:

(1) There is "no difference in substance" between organic and inorganic bodies; they are "composed of the same ingredients" (the Evolutionary/Continuity argument). Developments in biology and chemistry had confirmed this by the late 1800s, and the theory of vitalism (that living beings are composed of some unique material or substance) was correspondingly discredited. "The same forces act in inorganic as well as in organic bodies." (104)

(2) The question "Whence did psychical life arise?" (100) raises the classic emergence issue. The sudden appearance of a mental realm "would be an absolute 'world-riddle'; it would mean a creation out of nothing" (ibid.). This Non-Emergence argument is supported by natural science: since scientists accept that organic beings are formed out of inorganic material, and hence no new "vital substance" appears, they should accept the same reasoning and allow that psychical life of the higher organisms

is composed of lower elements of inorganic mentality. And within the realm of living beings, the theory of evolution supports this view: "The process of psychical evolution runs parallel with the evolution of organic life." (143)

(3) Paulsen addresses the argument that living beings exhibit "spontaneous activity," and that this is an indication of an inner sense. He points out that chemistry and physics demonstrate that even the smallest and simplest pieces of matter are active, self-organizing, and responsive (the Indwelling Powers argument): "Your inert, rigid matter . . . is a phantom that owes its existence, not to observation, but to conceptual speculation. . . . Modern science has utterly discarded that idea of such absolutely dead and rigid bodies. Its molecules and atoms are forms of the greatest inner complexity and mobility." (101–102)

(4) Schopenhauer's Continuity/First Principles argument holds that all things appear to us as sensations or sensory phenomena. But things must have *some* inner nature. Thus, Paulsen informs us, "that which appears to us as a body must be something in and for itself" (105). We know firsthand that human bodies have an inner sense, and logically, "analogous phenomena point to analogous inner being" (ibid.). Therefore, "to every body which . . . appears as a relatively complete system of phenomena and activities, [the logical thinker] ascribes a relatively complete inner life like his own." (ibid.)

Like Fechner, Paulsen applied similar reasoning to large-scale systems such as the Earth, concluding that it is clearly reasonable to ascribe them an inner life. Ultimately Paulsen acknowledged that such arguments stand on a different plane than conventional scientific or materialist ones: ". . . these thoughts are not matters of scientific knowledge. . . . This is no place for real scientific work." (109) "Still," he continued, "they have their value." The world-soul, which Paulsen saw as a logical necessity, can serve as a kind of non-religious deity, arrived at by reasoning rather than ancient theological texts. More important, "this view destroys the negative dogmatism of a purely physical view of the world" (110). Such a vision is an indication of depth of spirit, and is achieved only by the most far-sighted philosophers. Conversely, the hallmark of an "empty and low life" is the development of "a nihilistic conception of life, [and] a loss of reverence for moral and spiritual greatness" (69). Inevitably, "such a nihilistic view of life naturally tends to a materialistic philosophy" (70). For Paulsen, materialism was the sign of weakness and deficiency; panpsychism was the sign of greatness.

5.5 Nietzsche and the Will to Power

No philosopher placed more emphasis on the philosophy of greatness than Friedrich Nietzsche (1844–1900). If Paulsen saw panpsychism as the path to greatness, Nietzsche strode that path with flair and conviction. The foundation of this path was Nietzsche's ultimate metaphysical principle, *der Wille zur Macht*—the will to power. In humans this power was manifest as the consummate life-affirming drive, an inclination to achieve dignity, mastery and, finally, greatness. But it was also the ground-source of the flourishing of life generally, and most broadly, as the force by which all things in nature exerted and expanded their claim on existence.

Nietzsche was heavily influenced by Schopenhauer's conception of all material objects as manifestations or objectifications of pure will—the “endless striving” that was the thing-in-itself of all existence. As with most of the topics he addressed, Nietzsche alternated between praise and criticism; he embraced Schopenhauer's transcendence of Kant's unknowable thing-in-itself, but recoiled at the pessimistic conclusions of a metaphysic in which all of nature was unfulfilled seeking and desiring. For Nietzsche the will was not merely endless striving, nor even will-to-life, but rather the will to exert one's being, to achieve influence, to have an effect on the world in the most self-realizing manner possible.

In most of his writings, Nietzsche focused primarily on the will to power in the human sphere, concerned as he was with the perilous state of morality and the urgent need to create new values. And yet a number of passages—primarily in his notebook entries that were posthumously published as *The Will to Power* (1906/1967)—demonstrate that, like Schopenhauer, he saw the will as a universal principle of force and action.

The relevant entries in *The Will to Power* date from the mid to late 1880s, the heart of Nietzsche's late period and the time of his mature writings. For the sake of structure, the passages below are listed in chronological order; all are from *The Will to Power*, except the 1886 entry from *Beyond Good and Evil*:

1885

The victorious concept “force” . . . still needs to be completed: an inner will must be ascribed to it, which I designate as “will to power,” i.e. as an insatiable desire to manifest power; . . . [and] as a creative drive. . . . One is obliged to understand all motion, all “appearances,” all “laws,” only as symptoms of an inner event, and to employ man as an analogy to this end. (section 619)

There is absolutely no other kind of causality than that of will upon will. Not explained mechanistically. (section 658)

This world is the will to power—and nothing besides! And you yourselves are also this will to power—and nothing besides! (section 1067)

'Attraction' and 'repulsion' in a purely mechanistic sense are complete fictions: a word. We cannot think of an attraction divorced from an *intention*. The will to take possession of a thing or to defend oneself against it and repel it—that we 'understand' . . . (section 627)

1886

Granted finally that one succeeded in explaining our entire instinctual life as the development and ramification of *one* basic form of will—as will to power, as is *my* theory— . . . [then] one would have acquired the right to define *all* efficient force unequivocally as: *will to power*. The world seen from within, the world described and defined according to its 'intelligible character'—it would be 'will to power' and nothing else. (Nietzsche, 1886; section 36)

1888

My idea is that every specific body strives to become master over all space and to extend its force (—its will to power) and to thrust back all that resists its extension. (section 636)

[My theory would be] that all driving force is will to power, that there is no other physical, dynamic or psychic force except this. (section 688)

The will to accumulate force is special to the phenomena of life, to nourishment, procreation, inheritance—to society, state, custom, authority. Should we not be permitted to assume this will as a motive cause in chemistry, too?—and in the cosmic order? (section 689)

. . . life is merely a special case of the will to power. (section 692)

. . . the innermost essence of being is will to power . . . (section 693)

Some commentators have questioned the legitimacy of the notebook entries that ultimately appeared in *The Will to Power*, suggesting that since Nietzsche never personally published them they were only ideas in progress or working concepts that he did not fully endorse. The notion of will to power as a universal metaphysical principle is particularly vulnerable to this, insofar as we have only the single published entry in *Beyond Good and Evil*, and that in this case Nietzsche is arguably conjecturing, not asserting. And yet the conviction of the notebook entries is striking, as is the fact that the view is consistently repeated over a period of at least four

years. And his criticism of Schopenhauer seems to center on his interpretation of Schopenhauer's will as deficient and anthropocentric, rather than the general idea that will can serve as an ultimate principle. The will to power clearly extends beyond the realm of the human, and we find neither argumentation nor even suggestion that there is some fundamental dividing line restricting this will to only a portion of reality. A consistent ontology, which Nietzsche seems to have favored, must find it ubiquitous in nature.

6 The Anglo-American Perspective

Near the end of the 1800s, the focus of panpsychism shifted again, this time to the Anglo-American philosophers. The early years of the twentieth century were of particular importance, with panpsychist views appearing in the writings of Peirce, James, Bradley, and Royce. Since that time the vast majority of works addressing panpsychism have come from British and American thinkers. The twentieth century was also marked by the emergence of several prominent scientist-philosophers who either sympathized with or directly advocated panpsychist views; they will be the focus of chapter 8.

6.1 Anglo-American Panpsychism of the Late Nineteenth Century

English panpsychism, largely absent since the time of More and Cavendish, was reestablished in 1874 by William Kingdon Clifford (1845–1879). That year, the physicist and philosopher published the article “Body and Mind,” in which he claimed that science had bridged the gap between the organic and the inorganic. It was by then known that the same chemical elements and same laws of physics applied to both realms, and hence the laws of the organic were “only a complication” of the inorganic. Clifford then proceeded to explore whether there was a basis for believing that a similar bridge had been built between the Science of Physics and the Science of Consciousness.

Beginning introspectively, Clifford noted that for him “there is only one kind of consciousness, and that is to have fifty thousand feelings at once, and to know them all in different degrees” (1874/1903: 46). This state of consciousness appears to him as “an extremely complex one,” a complicated unity arising from a multiplicity of sensations. This singular state of consciousness is something completely non-physical and non-material: “We have no possible ground . . . for speaking of another man’s consciousness as

in any sense a part of the physical world of objects or phenomena. It is a thing entirely separate from it. . . .” (53) Clearly Clifford is referring to a naturalistic yet non-material mind, i.e. he is not arguing for an immaterial soul in the traditional sense. If the mind is immaterial, it cannot be reduced to force as others have argued, because force is clearly physical and observable. The conclusion then must be a form of parallelism—“the physical facts go along by themselves, and the mental facts go along by themselves.”

The view Clifford arrived at was a form of Spinozan parallelism that incorporated elements of LaMettrie’s and Diderot’s vitalist materialism. Clifford regarded the human body as “a physical machine,” but “not *merely* a machine, because consciousness goes with it” (57). In making his case for panpsychism, he applied the Non-Emergence argument: as we move down the chain of living organisms,

it is impossible for anybody to point out the particular place in the line of descent where [absence of consciousness] can be supposed to have taken place. . . . Even in the very lowest organisms, even in the Amoeba . . . there is something or other, inconceivably simple to us, which is of the same nature with our own consciousness, although not of the same complexity. [Furthermore] we cannot stop at organic matter, [but] we are obliged to assume, in order to save continuity in our belief, that along with every motion of matter, whether organic or inorganic, there is some fact which corresponds to the mental fact in ourselves. (60–61)

Echoing Fechner, Clifford then noted that his doctrine “is no mere speculation, but is a result to which all the greatest minds that have studied this question in the right way have gradually been approximating for a long time” (61).

Four years later, Clifford expanded on his views in the journal *Mind*, where he advocated a monist philosophy in which the basic constituent of reality is “mind-stuff.”¹ Mind-stuff is neither mind nor consciousness, but rather the elements that combine together to form “the faint beginnings of Sentience.” Mind is viewed as composed of “mental atoms” that exist in parallel with physical atoms and which combine in an analogous manner. “A moving molecule of inorganic matter does not possess mind, or consciousness; but it possesses a small piece of mind-stuff.” (1878: 65) Intelligence and volition emerge only in higher-level complexes of mind-stuff, but elementary feelings seem to be present in all things.

Clifford’s mind-stuff theory is vulnerable to the combination problem. He offers no answer, and his untimely death a year later precluded any chance for resolution. The lack of an answer led certain philosophers to “reject decisively every form of mind-stuff” (Stout 1919b/1952: 212–213). Others, including William James, were fascinated by it. James dedicated an

entire chapter (“The Mind-Stuff Theory”) to it in his *Principles of Psychology* (1890). After acknowledging the power and attraction of such a theory, James rejected it for essentially the same reason: mental atoms cannot combine, because to do so they would have to be combined “upon some entity other than themselves” (158), i.e. something non-mental.²

The next important development occurred in a book by noted British author Samuel Butler (1838–1902). More a novelist than a formal philosopher, Butler nonetheless offered speculations on philosophical and metaphysical matters, and was an ardent supporter of evolution. He discussed his panpsychist views in his 1880 book *Unconscious Memory*.

Like many other thinkers of the time, Butler noted that scientists had determined that the nature of the organic was the same as that of the inorganic, that vitalism had been largely disproved, that organic matter had been shown to be identical with inorganic, and that the same forces were everywhere present—views that hold to this day. The logical conclusion, then, was that certain core characteristics of the living must inhere, in some form, in the non-living. “If we once break down the wall of partition between the organic and inorganic,” Butler wrote, “the inorganic must be living and conscious also, up to a point. . . . It is more coherent with our other ideas, and therefore more acceptable, to start with every molecule as a living thing . . . than to start with inanimate molecules and smuggle life into them; . . . what we call the inorganic world must be regarded as up to a certain point living, and instinct, within certain limits, with consciousness, volition, and power of concerted action.” (23)

At the conclusion of *Unconscious Memory*, Butler reiterates his perspective and suggests that it is the morally enlightened view: “I would recommend the reader to see every atom in the universe as living and able to feel and to remember, but in a humble way. . . . Thus he will see God everywhere.” (273) That a moral perspective is engendered by panpsychism is perhaps not obvious: “True, it would be hard to place one’s self on the same moral platform as a stone, but this is not necessary; it is enough that we should feel the stone to have a moral platform of its own.” (275) This is one of the earliest commentaries (see also Fechner and Paulsen) that cite the moral relevance of panpsychism. It shows again signs of an emerging ecological value system in which objects of nature have intrinsic moral worth.

Gregory Bateson, apparently inspired by Butler, cited him on a number of occasions. But Bateson disagreed with the principle of attributing life and mind to atoms; rather, he adopted more of a qualified panpsychism in which all things *except* atoms possess minds (because they have no parts).³

In an 1884 article titled "Religion: A Retrospect and Prospect," the noted evolutionist Herbert Spencer (1820–1903) retraced the evolution of religion. He discussed the origins of primitive animism and argued that the "spirits" of nature gradually became more powerful, more unified, and more abstract. The concept of God lost more and more of its anthropocentrism, eventually to become a kind of pure consciousness or mind.

Spencer believed that the concept of God-as-First-Cause was a necessary and real aspect of the world, and that this God, stripped of all superfluous characteristics, was nothing more than pure mind. He saw force and consciousness as two distinct entities, but since "either is capable of generating the other, they must be different modes of the same [thing]" (1884: 9). He concluded from this that "the Power manifested throughout the Universe distinguished as material, is the same power which in ourselves wells up under the form of consciousness" (ibid.). Science, he noted, confirmed this view. He claimed that physics has revealed the "incredible power" of brute matter, as with the ability of simple materials to transmit sounds over wireless airwaves. And so too "the spectroscope proves . . . that molecules on Earth pulsate in harmony with molecules in the stars" (10). The man of science is forced to conclude that "every point in space thrills with an infinity of vibrations passing through it in all directions; the conception to which [the enlightened scientist] tends is much less that of a Universe of dead matter than that of a Universe everywhere alive: alive if not in the restricted sense, still in a general sense" (ibid.).

In 1885, Morton Prince published *The Nature of Mind and Human Automatism*, in which he presents a naturalist, Schopenhauerian philosophy (he calls it a form of materialism) in which the inner essence of matter, the thing-in-itself, is mind-stuff (following Clifford). Prince's is no dual-aspect theory but rather more of an idealist monism. He sees in this a system that opposes the inert view of mechanism: ". . . matter is no longer the dead and senseless thing it is popularly supposed to be" (1885/1975: 163). Evolution suggests the unity of all phenomena. As a consequence, "the whole universe . . . instead of being inert is made up of living forces; not conscious [but] pseudo-conscious. It is made up of the elements of consciousness." (164)

The panpsychist Charles Strong wrote approvingly of Prince's book, calling it "an extremely clear and forceful statement of the panpsychist hypothesis" (1904a: 67). He noted that Prince was "entitled to an honorable place among [panpsychism's] earliest discoverers and defenders" (ibid.: 68). In fact Prince and Clifford were the first two philosophers to articulate sys-

temic and explicit panpsychist theories *as theories of mind*, rather than as adjuncts to larger ontological systems. Prince drew on both Schopenhauer and Clifford, and reinterpreted their theories in an evolutionary vein.⁴

6.2 William James

In 1890, William James (1842–1910) published his first major work, *Principles of Psychology*. It was in this book that James examined in detail the mind-stuff theory. He noted that the essence of the mind-stuff approach is that, as with the monads, higher-order consciousness is compounded of simpler, atomic mental entities. The theory of evolution, along with other scientific advances, offered a strong line of reasoning in favor of a panpsychist mind-stuff theory; if complex material bodies could evolve from simpler ones, why couldn't the same happen for psychical entities? He observed that, from an evolutionary-psychological viewpoint, "*if evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things. . . . Some such doctrine of atomistic hylozoism . . . is an indispensable part of a thorough-going philosophy of evolution.*" (1890/1950: 149)

James appears to implicitly agree with this statement but is unconvinced that mind-stuff is the proper interpretation. As has been noted, for James the combination problem was an insurmountable barrier to the mind-stuff theory. The issue of compounding of consciousness is "logically unintelligible" because mental entities can only compound upon something nonmental. Further, such a sum exists only to an outside observer and not in itself. He quotes Royce: "Aggregations are organized wholes only . . . in the presence of other [external] things. . . . Unity exist[s] for some other subject, not for the mass itself." (159) Importantly, though, James comments in a footnote (162) that he is not opposed to combination per se, only to the intelligibility of combination within the assumptions of the mind-stuff theory. On his view, a combination results in something "totally new" and unlike that which composed it. Mind-atoms can combine not to form mind, but rather something completely different—though perhaps still mind-like. Thus the problem remains unresolved.

Upon rejecting the mind-stuff theory, James offers up the alternative theory of "polyzoism" (or "multiple monadism"). He claims no originality to this view (which "has been frequently made in the history of philosophy") but simply sees it as the most logically consistent and problem-free alternative. Consider the human brain. Under polyzoism, every cell in the brain has its own unique consciousness, which is distinct from and unrelated to

the consciousnesses of the other cells. But the cells clearly interact physically, and their interaction is brought together in a unifying hypothetical entity that James calls the “central cell” or “arch-cell.” Unfortunately science finds no evidence of any such central cell in the brain or any other organ. Furthermore, one cannot stop logically at the cell; one must extend the reasoning down to some ultimately small and simple units, arriving at a system much like Leibniz’s monadology: “The theory [of polyzoism] must set up for its elementary and irreducible psycho-physic couple, not the cell and its consciousness, but the primordial and eternal atom and its consciousness.” (180) Such a view is “remote and unreal,” but nonetheless “must be admitted as a possibility”—and in fact “must have some sort of a destiny” (ibid.).

In 1890, James was only implicitly panpsychist. His soul-theory took on all the central features of Leibniz’s monadology, including the universal presence of a central unifying point of mind—though he did not yet claim that all things have souls. It was not until later in James’ life that he more explicitly argued for “pluralistic panpsychism.”

James’ panpsychist metaphysics is one of the few such systems to have been seriously discussed and debated in late-twentieth-century philosophical discourse; for the most detailed treatment, see Ford 1982. The following summarizes some of the most important points.

James’ metaphysical turn roughly coincided with the turn of the century. In 1901 and 1902 he presented his Gifford Lectures, which were published as *Varieties of Religious Experience* (1902). In the book he clarified his conception of panpsychism without yet truly endorsing it. First he indicated his sympathy with a panpsychist/animist worldview: “How could the richer animistic aspects of Nature . . . fail to have been first singled out and followed by philosophy as the more promising avenue to the knowledge of Nature’s life?” (392) He continued: “A conscious field *plus* its object as felt or thought of *plus* an attitude toward the object *plus* the sense of a self to whom the attitude belongs [constitutes a] full fact . . . ; it is of the *kind* to which all realities whatsoever must belong. . . .” (393)

James’ first outright endorsement of panpsychism came in lecture notes to a philosophy course taught at Harvard in 1902–03. According to Perry (1935: 373), James announced that “pragmatism would be his method and ‘pluralistic panpsychism’ his doctrine.”

The series of 1904–05 lectures that would become *Essays in Radical Empiricism* (1912) marks somewhat of a further change in James’ thinking, as he seems to move more toward a position of neutral monism. Here he suggests, after the manner of Mach, that “pure experience” is the ultimate

reality. James seems to recognize that his view of radical empiricism is very close to panpsychism, yet he is hesitant to elaborate:

The 'beyond' must of course always in our philosophy be itself of an experiential nature. If not a future experience of our own . . . , it must be a thing in itself in [panpsychists] Dr. Prince's and Professor Strong's sense of the term—that is, it must be an experience *for* itself. . . . This opens the chapter of the relations of radical empiricism to panpsychism, into which I cannot enter now. (1912/1996: 88–89)

Later James again suggests that the problems of causality between mind and matter lead “into that region of pan-psychic and ontologic speculation of which [panpsychists] Professors Bergson and Strong have lately [addressed] in so able and interesting a way. . . . I cannot help suspecting that the direction of their work is very promising, and that they have the hunter's instinct for the fruitful trails.” (189)

In his 1905–06 lecture notes, James again steers toward panpsychism: “Our only intelligible notion of an object *in itself* is that it should be an object *for* itself, and this lands us in panpsychism and a belief that our physical perceptions are effects on us of ‘psychical’ realities. . . .” (Perry 1935: 446)

James' 1907–08 Hibbert Lectures, published as *A Pluralistic Universe* (1909), not only furthered his commitment to panpsychism but also made clear his fundamental opposition to the attitude and logic of materialism. There were, said James, two kinds of philosophers: the cynical and the sympathetic. The former inevitably develop *materialistic* philosophies, and the latter *spiritualistic* ones.⁵ Here we see James' recognition of the ethical imperatives that are built into one's worldview. Spiritualism may be either of the dualist (traditional) type or of the monist type. The spiritual monists, furthermore, may be either of a radically monist variety (i.e. absolute idealism) or may be more of a “pluralist monism” (!). James places himself and his radical empiricism in the latter group. The monism resides in the fact that all things are pure experience; the pluralism lies in the fact that all things are “for themselves,” i.e. are objects with their own independent psychical perspectives. Radical empiricism is thus not only sympathetic; it is a morally vital philosophy. Materialism, because it removes the intimacy between mankind and nature, is cynical and axiologically defective: “Not to demand intimate relations with the universe, and not to wish them satisfactory, should be accounted signs of something wrong.” (1909/1996: 33)

As has been noted, James devoted an entire lecture (chapter) to Fechner's panpsychism and gave a very sympathetic reading. The next lecture, “Compounding of Consciousness,” offers his final solution to the combination problem. Formerly he had argued that any collective experience had to be

unlike the constituent experiences; they had to be “logically distinct.” The result, logically speaking, was that combination was impossible. Now James realizes that this situation is “almost intolerable” because “it makes the universe discontinuous” (206). Such logic forces one to conclude that the universe is a “contradiction incarnate.” If analytic logic compels one to this view, “so much the worse for logic” (207). For James, logic is an intellectual tool of the cynical, materialistic philosophers, and so he transcends it. He adds this: “Reality, life, experience, concreteness, immediacy, use what word you will, exceeds our logic, overflows and surrounds it.” (212) Thus, combination is possible after all, and in fact it maintains the continuity of mind throughout the universe.

Here, too, James abandoned his earlier soul-theory: “Souls have worn out both themselves and their welcome, that is the plain truth.” (210) Individual minds and the hierarchy of lower- and higher-order mind constitute the reality of the cosmos—“. . . the self-compounding of mind in its smaller and more accessible portions seems a certain fact” (292).

In the final lecture, James stated his belief in a superhuman consciousness and speculated that “we finite minds may simultaneously be co-conscious with one another in a super-human intelligence” (292).⁶ Overall, he advocated “a general view of the world almost identical with Fechner’s” (309–310). He foresaw a new worldview, a sea change in philosophy, “a great empirical movement towards a pluralistic panpsychic view of the universe” (313). (“Empirical” here refers to James’ “radical empiricism,” in which everything consists of pure experience.) This new system “threatens to short-circuit” the cynical worldview of the mechanistic materialists.

Not that we must abandon all present modes of thinking, or fall into pure mysticism or irrationalism. James holds out the hope that, in his new worldview, “empiricism and rationalism might [yet] strike hands in a lasting treaty of peace”; he implores thinking people to “seek together . . . using all the analogies and data within reach” to understand this new conception of mind and consciousness. He asks “Why cannot ‘experience’ and ‘reason’ meet on this common ground?” (312) The new worldview is thus spiritual, sympathetic, even reverent. Following Paulsen, James notes that the greatest order of mind in the cosmos is that which we may call God. God is the Mind of the Cosmos, a kind of nouveau world-soul in which we all co-consciously participate. “Thus does foreignness get banished from our world. . . . We are indeed internal parts of God and not external creations, on any possible reading of the panpsychic system.” (318)

Others of James’ last writings reinforce his final stance on panpsychism. In the Miller-Bode notebooks of 1908 he wrote that “the constitution of

reality which I am making for is of [the] psychic type" (Perry 1935: 764). James' last writings included a series of essays meant to be a kind of philosophical text; they were eventually collected and published as *Some Problems of Philosophy* (1911a). In the last two of these essays he again addresses the problem of causation, considering both the conceptual and the perceptual view. The conceptualist (or "intellectualist") view consists of essentially a Humean negation of causality, something James derides as "confused and unsatisfactory." Preferable is a perceptualist view based on our own personal experience of the continuity of causality. This leads James into the mind-body relationship and its larger implications. The experience of causal continuity he takes as literally the stuff of causation (recalling his radical empiricism). Upon taking this view, "we should have to ascribe to cases of causation outside of our own life, to physical cases also, an inwardly experiential nature. In other words we should have to espouse a so-called 'pan-psychic' philosophy." (218) In the posthumously published *Memories and Studies*, he exclaimed:

. . . there is a continuum of cosmic consciousness, . . . into which our several minds plunge as into a mother-sea or reservoir. . . . Not only psychic research, but metaphysical philosophy, and speculative biology are led in their own ways to look with favor on some such 'panpsychic' view of the universe as this. (1911b, 204)

Ultimately what is important in philosophy is vision. "Philosophy is more a matter of passionate vision than of logic." (James 1909/1996: 176) Unfortunately, "few professorial philosophers have any vision," and "where there is no vision the people perish" (165). Pluralistic panpsychism seems to provide James with the vision he seeks.

Reaction to James' panpsychism is revealing. In spite of the evidence, some philosophers still argue that James only "toyed" with panpsychism. Ford (1981, 1982), Kuklick (1977), Cooper (1990), and Sprigge (1993) explicitly acknowledge his adoption of panpsychism; Ford (1982) cites some examples to the contrary.

6.3 Royce, Peirce, and Other Sympathetic Thinkers

Four important works on panpsychism were released in 1892. One of these was Paulsen's *Introduction to Philosophy*, discussed in chapter 5. Another was a notable article by Paul Carus, editor of *The Monist*. In "Panpsychism and panbiotism," Carus offers his view of and his criticisms of panpsychism, proposing that the term 'panbiotism' be used in its place. Carus believes that "everything is fraught with life; it contains life; it has the

ability to live" (234). He (strangely) dismisses Haeckel's view that matter possesses mind or soul as "fantastic," and proceeds to develop his own definition of soul. One of the more interesting parts of Carus' piece is the section titled "Mr. Thomas A. Edison's Panpsychism." Edison wrote a brief essay titled "Intelligent Atoms" in which he put forth his view that "every atom of matter is intelligent." Carus quotes Edison as follows:

All matter lives, and everything that lives possesses intelligence. . . . The atom is conscious if man is conscious, . . . exercises will-power if man does, is, in its own little way, all that man is. . . . I cannot avoid the conclusion that all matter is composed of intelligent atoms and that life and mind are merely synonyms for the aggregation of atomic intelligence. (243)

Quite surprising words from one of the world's greatest inventors and practical thinkers.

In *Spirit of Modern Philosophy*, Josiah Royce—an American philosopher well known for his pragmatism and absolute idealism—proposed a theory of the Universal Self (or Logos, or World-Spirit, or God) as the cosmic mind which is the reality behind all physical phenomena. Of this Infinite Self we know little directly—only that it exists, is conscious, and is fundamentally One. The Self does not act on reality, precisely because it *is* reality: "He isn't anywhere in space or in time. He makes from without no worlds. . . . The absolute Self simply doesn't *cause* the world." (1892/1955: 348)

Royce examines the dual-aspect theories of mind, including Clifford's mind-stuff concept; he finds them unsatisfactory in their original form, but "luminous and inevitable" when understood in light of the Self. Consider two people. Their bodies follow physical laws and may interact in causal ways. But their physicality is merely a manifestation of their underlying inner reality as conscious beings. Outside the physical realm, their two minds interact, communicate, and participate—and this results in true knowledge. "He and I," Royce claims, "have spiritual relations, think of each other, and do somehow indirectly commune together." (ibid.: 417)

Like many other thinkers of the time, Royce saw in evolution grounds for viewing all physical objects as subject to the same metaphysical principles. If humans really possess an inner mind and a distinct identity, then so too does everything. This is the "relation of the inorganic world to our human consciousness":

The theory of the 'double aspect,' applied to the facts of the inorganic world, suggests at once that they, too, in so far as they are real, must possess their own inner and appreciable aspect. . . . In general it is an obvious corollary of all that we have been saying. (419–420)

. . . we know that there is no real process of nature that must not have, known or unknown to us, its inner, its appreciable aspect. Otherwise it could not be real. . . . (426–427)

Royce counsels the reader not to view this as mere animism or anthropomorphism. It would be simplistic and misleading to presuppose that “stones or planets” have anything like a human inner life: “. . . it is not ours to speculate *what* appreciative inner life is hidden behind the describable but seemingly lifeless things of the world” (ibid.). Yet we are certain that it exists, because “the Logos finds a place for it . . . in the world of appreciation” (ibid.). The Logos is by definition timeless, and hence the cosmos has always had this inner life—before humans, before life, before the Earth.

Royce continues this line of thinking in *Studies of Good and Evil* (1898),⁷ where he displays a deepening conviction that all things have an inner life, one that has as much reality and intrinsic worth as our own:

. . . we have no sort of right to speak in any way as if the inner experience behind any fact of nature were of a grade lower than ours, or less conscious, or less rational, or more atomic. . . . This reality is, like that of our own experience, conscious, organic, full of clear contrasts, rational, definite. We ought not to speak of dead nature. (1898/1915: 230)

The contrast is clear: the “dead nature” of mechanism is challenged at its core by the panpsychic worldview.

The final and perhaps most important articulation of Royce’s panpsychism came in *The World and the Individual* (1899–1901). Here Royce asks the reader to “suppose that even material nature were internally full of the live and fleeting processes that we know as those of conscious mental life” (213). He then introduces some new variations on the arguments for panpsychism, all based on “four great and characteristic types of processes” (219) that ordinary matter shares with “conscious Nature,” i.e. mankind. First he notes that both matter and mind exhibit irreversibility in their processes—a reference to the recently formulated second law of thermodynamics. Second, both realms display a tendency to communicate: minds and ideas interact and exchange, and likewise matter and energy exhibit field properties (“wave-movements”) that indicate an interpenetration and communicative interaction. Third, both show tendencies toward a quasi-stable behavior, in spite of their irreversibility, that Royce (following Peirce) calls a “Habit.” Nature exhibits countless “approximate rhythms” that are repeatable and definite yet never absolutely fixed. Fourth is the process of evolution, which demonstrates the continuity of nature from inorganic to organic, to consciousness. These are all variations

on the Evolution/Continuity arguments, employing the latest developments in science and physics.

From these Royce concludes that the mental aspect of nature exists, but that it operates at a vastly different (slower) time scale than our human consciousness, and therefore we cannot perceive it:

. . . we have no right whatever to speak of really unconscious Nature, but only of uncommunicative Nature, or of Nature whose mental processes go on at such different time-rates from ours that we cannot adjust ourselves to a live appreciation of their inward fluency, although our consciousness does make us aware of their presence. (225–226)

The “very vast [mental] slowness in inorganic Nature” (227), such as in a rock or solar system, is no less extant than our own mentality. Time scale is entirely arbitrary, and therefore slower is not lesser. The Mind in nature is fully conscious. Hence, a mental life is to be found everywhere:

Where we see inorganic Nature seemingly dead, there is, in fact, conscious life, just as surely as there is any Being present in Nature at all. And I insist, meanwhile, that no empirical warrant can be found for affirming the existence of dead material substance anywhere. (240)



The fourth significant publication of 1892 was “Man’s Glassy Essence,” in which Charles Sanders Peirce (1839–1914) discussed the relation between the psychical and physical aspects of material things. This piece was the fourth of his five famous *Monist* articles on metaphysics, published in 1891–1893. The first three articles—“The Architecture of Theories,” “The Doctrine of Necessity Examined,” and “The Law of Mind”—laid the groundwork for Peirce’s panpsychist vision in “Man’s Glassy Essence.”

Peirce began “Architecture of Theories” with a discussion of the “brick and mortar” of any viable philosophical system. This article, like all five, is very diverse in concepts; Peirce seems to dash from one topic to the next, only roughly forming a consistent overall theme. In the first article he discusses the relevance of evolution to philosophy of mind. He then asserts that “the old dualistic notion of mind and matter . . . will hardly find defenders today” (1891/1992: 292). We are thus compelled to a form of monism, one that he designates, surprisingly, “hylopathy”—a new term that presumably is related to pansensism (literally, all matter feels).

This monism must have one of three forms: neutralism, in which mind and matter are independent; materialism, in which physical is primary; and

idealism, in which the mental is primary. Peirce rejects the first because two independent entities are proposed where only one is required. He dismisses the second as “repugnant to scientific logic” because “it requires us to suppose that a certain kind of mechanism will feel” (ibid.). Thus, we are left with idealism. Peirce has in mind a particular variation, “objective idealism”:

The one intelligible theory of the universe is that of objective idealism, that matter is effete mind, inveterate habits becoming physical laws. (293)

Here Peirce is referring to his cosmogonic thesis, in which the universe originates in a condition of pure, chaotic feeling. It then becomes progressively crystallized into matter as this mind undergoes a kind of solidification, via the process of patterns of recurrence that Peirce calls “habits.” Mind is thus at the core of reality. It exists in varying stages of solidification (or “objectification,” as Schopenhauer would have it), seen in one sense as matter and in another as mind.

In “The Doctrine of Necessity Examined” Peirce rejects determinism, arguing for his own version of anti-necessitarianism (“tychism”). One of the reasons for his rejection is that necessitarianism requires an entirely unsatisfactory epiphenomenal view of mind: “Necessitarianism cannot logically stop short of making the whole action of the mind [simply] a part of the physical universe. . . . Indeed, consciousness in general thus becomes a mere illusory aspect.” (1892a/1992: 309) Some small degree of tychistic freedom is required to again “insert mind into our scheme.”

Peirce returns, briefly, to panpsychism in “The Law of Mind.” He observes that “*tychism* must give birth to an evolutionary cosmology . . . and to a Schelling-fashioned idealism which holds matter to be mere specialized and partially deadened mind” (1892b/1992: 312). But he then diverts again to a different discussion. At the end he reiterates that “what we call matter is not completely dead, but is merely mind hide-bound with habits” (331).

“Man’s Glassy Essence” begins with a look at physics and chemistry and goes on to discuss primitive life forms and the protoplasm inside all living cells. Of all the properties of protoplasm, the most important is that it “feels”—and what is more, it exhibits all essential qualities of mind. This sensitivity and sentience is inferred, Peirce tells us, by analogy: “. . . there is fair analogical inference that all protoplasm feels. It not only feels but exercises all the functions of mind.” (1892c/1992: 343) The analogy is based on such properties as the sensitive reaction to the environment, ability to move, to grow, to reproduce, and so on.

And yet protoplasm is simply complex chemistry, a particular arrangement of molecules. Feeling cannot be accounted for by mechanistic laws;

therefore, we are “[forced to] admit that physical events are but degraded or undeveloped forms of psychical events” (348). Peirce then presents his own “dual aspect” theory of mind:

. . . all mind is directly or indirectly connected with all matter, and acts in a more or less regular way; so that all mind more or less partakes of the nature of matter. . . . Viewing a thing from the outside, . . . it appears as matter. Viewing it from the inside, . . . it appears as consciousness. (349)

The dynamic sensitivity of protoplasm necessarily results in an *enhanced capability for feeling*: “. . . nerve-protoplasm is, without doubt, in the most unstable condition of any kind of matter; and consequently, there the resulting feeling is the most manifest” (348). Again, this sort of sensitivity is a general property of matter: “Wherever chance-spontaneity [i.e. unstable sensitivity] is found, there, in the same proportion, feeling exists.” (ibid.) Peirce thus effectively introduces a new argument for panpsychism, drawing on the correlation between a specific physical characteristic—*dynamic sensitivity*—and a mental quality—*feeling*. All matter is dynamic to a greater or lesser degree, and thus all must be associated with an “interior” that feels. We may designate this the *Argument from Dynamic Sensitivity*. Like the evolutionary argument, it incorporates forms of continuity and non-emergence; to these it adds a reference to the indwelling power of dynamic systems. Clearly Peirce was only sketching out his views here, but certainly the lack of a developed theory of dynamic systems restricted his ability to articulate himself. With the advent of chaos theory and nonlinear dynamics in the late twentieth century, we now have new ways of expanding on Peirce’s insight—see especially Skrbina 2001. Skrbina’s ideas are discussed further in chapter 9.

Peirce then elaborates on his notion of a “general idea.” Individual ideas, he claims, spread out over time, influence one another, and become fused together into a general idea. As he wrote in his earlier article, such general ideas are “living feelings spread out” (1892b/1992: 327). Any general idea that comes to exhibit a pattern of regularity or recurrence is said to acquire a habit: “Habit is that specialization of the law of mind whereby a general idea gains the power of exciting [regular] reactions.” (328) In fact the general idea is rather the mind of the habit. This mind associated with the general idea is a unity, one that is essentially like that of a human personality, in some fundamental ontological sense:

The consciousness of a general idea has a certain “unity of the ego” in it. . . . It is, therefore, quite analogous to a person; and, indeed, *a person is only a particular kind of general idea*. . . . Every general idea has the unified living feeling of a person. (1892c/1992: 350; italics added)

Finally, Peirce recognized that his generalized theory of mind applied to larger-scale super-human structures as well as the smaller sub-human systems. People who interact strongly with each other produce a true group mind that is of like nature to all mind. Personhood (or personality) results when the feelings (or sub-minds) are "in close enough connection to influence one another" (ibid.). "There should be," Peirce continues, "something like personal consciousness in [collective] bodies of men who are in intimate and intensely sympathetic communion." In other words, degree of participation determines degree of mind. Peirce adds that these ideas "are no mere metaphors" and that "the law of mind clearly points to the existence of such personalities."

Such views are in striking contrast to Peirce's more famous analytic work in logic, semiotics, and positivism. Yet he clearly read other panpsychist philosophers; he cites Fechner, Schelling, Clifford, Carus, Empedocles, Epicurus, Gilbert, James, Leibniz, (biologist/panpsychist) von Naegeli, Royce, and the Stoics, all in contexts that would indicate familiarity with their theories of mind. Peirce's pragmatism, like James', seems to have been consistent with a panpsychist outlook. This fact may have influenced the pragmatists Dewey and Schiller, both of whom, additionally, articulated panpsychist views.

Anglo-American panpsychism of the late nineteenth century came to a close with the British idealism of F. H. Bradley (1846–1924). In 1893 Bradley published the first edition of his major work, *Appearance and Reality*. His system of idealism was based on an absolute monism in which, as with Mach and James, "experience" is the ultimate reality. "Feeling, thought, and volition," writes Bradley, "are all the material of existence, and there is no other material, actual or even possible." (1893/1930: 127) Thus, this ultimate reality is not merely experience, but "sentient experience." Bradley's monism does not allow for separating subject from object, and as a result the subject himself is nothing more than experience (as was the case with Schopenhauer's 'will'). For both subject and object, "to be real is to be indissolubly one thing with sentience" (128).

Later in *Appearance and Reality* Bradley addressed the nature of the inorganic. In his absolute monism, all things are fundamentally one, and hence the inorganic shares essential qualities with the organic. This justifies an argument by analogy: "A sameness greater or less with our own bodies is the basis from which we conclude to other bodies and souls." (239) Where the sameness is clear, so is the imputation of psychical life. But even in the cases where it is not obvious, we have "no sufficient warrant for positive denial [of mind]" (240). In our profound ignorance of the absolute,

we must allow for the possibility that “every fragment of visible Nature might, so far as is known, serve as part in some organism not [obviously] like our bodies” (ibid.). Bradley reaches a somewhat tentative panpsychist conclusion:

[Physical] arrangements, apparently quite different from our own, and expressing themselves in what seems a wholly unlike way, might be directly connected with finite centers of feeling. And our result here must be this, that . . . we cannot call the least portion of Nature inorganic. (ibid.)

If this is less than a ringing endorsement, Bradley at least concludes—in the lack of evidence to the contrary—that the intellectually prudent view is to assume that inorganic matter has its own center of feeling.⁸

7 Panpsychism in the Twentieth Century, Part I: 1900–1950

Vigorous discussion of panpsychism continued into the 1900s. James, Royce, and Prince published important new works (as discussed in the previous chapter). A significant number of major philosophers entered the debate, offering important insights on behalf of panpsychism; these included Bergson, Schiller, Dewey, Whitehead, Russell, and Lossky. Additional support came from such diverse thinkers as Pierre Teilhard de Chardin, Samuel Alexander, Charles Strong, William Montague, and Leonard Troland.

7.1 Bergson and the Early-Twentieth-Century Panpsychists

In 1903, Charles Strong (1862–1940) published *Why the Mind Has a Body*. This work continued the Schopenhauerian argument that things-in-themselves are at root mental in nature. Like Schopenhauer, Strong interpreted this as a fundamentally panpsychist ontology. James was impressed with the book; he called it “a wonderful piece of clear and thorough work—quite classical in fact, and surely destined to renown.”¹

The book itself is presented as a kind of textbook on the state of philosophy of mind. It addresses various arguments for interactionism and parallelism, each in a variety of forms. As was usual at the time, Strong presents not an objective study but rather steers the reader toward a particular viewpoint, “psycho-physical idealism,” with the mental as the more fundamental reality. In support of this contention, Strong makes arguments by First Principles, Continuity, and Non-Emergence² (287–293). Though (oddly) he does not explicitly mention the word ‘panpsychism’ until the very end of the book, it is clear that this is his outlook; the panpsychist worldview—that “thought [is] to be extended to inorganic matter . . . [thus] making mind omnipresent in nature”—is “precisely the conclusion at which we have arrived” (291–292).

On the final page, Strong admits that he has no “positive conception” of the mentality that underlies all things, and thus is in no position to effectively argue whether this mentality “consist[s] of as many separate feelings as there are atoms, or of one great feeling or consciousness, or of something between the two” (354).

This missing analysis of mind was addressed in Strong’s next book, *Origin of Consciousness* (1918), in which he explicitly advocated the panpsychist perspective. Regarding the nature of the mental, he adopted and expanded on Clifford’s mind-stuff theory. Mind-stuff, Strong wrote, has four central qualities: it is “in space,” “in time,” “capable of change,” and most important “possesses the psychic character.” This latter quality is “the core of the whole matter, without which our panpsychism would be merely materialism” (319). It is manifest in humans as “attention,” but is more generally an intensity or vividness of experience that varies with the material object. It is an “accumulation of energy in a psychic state” (320).

Also in *Origin of Consciousness*, Strong addressed a potentially major weakness of the mind-stuff view: the combination problem. Any mind-stuff theory, he observed, articulates an atomistic conception of mind. Innumerable “minute feelings” must fuse to create a single high-level psychic state. The human, as a large-scale organism, simply lacks the perceptive ability to differentiate these many atomistic feelings, and thus by default experiences them collectively as a whole: “The fact of the case . . . is not that we [directly] perceive the unanalyzable feeling to be one, but only that we are unable to perceive it to be many. This, of course, in no way interferes with its actually being many.” (310) Just as ordinary objects appear to us as solid only because we are unable to see the individual atoms, so too our subjective feelings feel as one only because we cannot differentiate its components. Combination is thus an illusion, owing to our cognitive limitations. It was clear that Strong “regarded a panpsychistic metaphysics as the key to the mind-body problem” (Klausner 1967: 273). Also clear, unfortunately, was “the tremendous difficulty of presenting [this] in a convincing way” (ibid.). Strong explicitly admitted this (1937: 5): “The difficulty of making people believe that there is in suns and atoms anything of the nature of feeling is so mountainous that I sometimes wish I had devoted my energies to something else.” Nonetheless, Strong stands out as one of the more consistent and open advocates of panpsychism in the first part of the century.

In 1905, William Montague (1873–1953) wrote a short piece, titled “Panpsychism and Monism,” in which he defended the panpsychism of Strong against criticisms that were raised by Flournoy—the primary criticism being

that panpsychism is “merely verbal” and thus “methodologically useless.” This is a standard mechanistic critique of panpsychism. The inner mental experiences of non-human things are inherently unverifiable. Empirical evidence, like a magnet’s motive power, can be described without recourse to intrinsic noetic abilities. Of course, panpsychism is methodologically useless only if one chooses to ignore the broader implications. Clearly there are many potential ways in which one’s thoughts, actions, or values could be altered by adopting a panpsychist outlook.

In a 1912 article titled “A Realistic Theory of Truth and Error,” Montague contrasted materialism (or “panhylism”) with two forms of panpsychism: a positive view (all matter “has something psychical about it”) and a negative view (“all matter is nothing but psychical”). The latter view is essentially the standard definition of idealism, which again demonstrates the confusion between these terms. After criticizing the negative/idealist version, Montague (1912: 281) lays out his own theory, a positive variation of panpsychism that he calls *hylopsychism*. It is a brief and rather cryptic theory,³ but it attempts to make some interesting connections between time, energy, and mind. Montague seems to be operating more on intuition than on formal reasoning, and this seems to suggest that there must be a path allowing for all things to participate in mind without their being at root either pure mind or pure matter.⁴



One of the most important philosophers of the time was Henri Bergson (1859–1941). His philosophical system was complex, insightful, and unusually difficult to categorize. His central themes of time and evolution tend to paint him as a process philosopher, but his discussions of mind, creativity, freedom, and numerous other themes make for an intricate, emotionally powerful, and often enigmatic philosophy.

One of the more tantalizing features of Bergson’s thought was his flirtation with panpsychism. At times he seemed to believe that mind or consciousness or life pervaded the universe and animated all matter, and yet he always stopped short of clearly articulating a full panpsychist or hylozoist position. His suggestive writings began back in the late nineteenth century. One of his first major books was *Matter and Memory* (1896). He wrote of a continuum from matter to life, the latter culminating in the human species: “. . . we can conceive an infinite number of degrees between matter and fully developed spirit. . . . Each of these successive degrees, which measures a growing intensity of life, corresponds to a higher tension of duration. . . .”

(221) 'Duration' implies time, and in the realm of life this implies memory. As the complexity of organisms increases, so does the corresponding element of memory. Humans have the greatest memory, and at the other end of the spectrum, matter has none. And yet matter still possesses pure perception, that is, perception without memory. "Now," Bergson wrote, "as we have shown, pure perception, which is the lowest degree of mind—mind without memory—is really part of matter, as we understand matter." (222) In the conclusion of the book, Bergson characterized consciousness as a universal phenomenon that somehow counterbalances individual beings and minds, unifying them while allowing them their uniqueness. "No doubt," he wrote, ". . . the material universe itself, defined as the totality of images, is a kind of consciousness, . . . a consciousness of which all the potential parts . . . reciprocally hinder each other from standing out." (235) He referred repeatedly to the "confluence of mind and matter," of "seeing the one flow into the other"—again, with matter representing pure perception and mind representing pure memory. Ultimately, Bergson concludes, in a manner not unlike that of the ancient Greeks, that *movement itself* is something mind-like because it necessarily involves duration (i.e. continuation) and memory:

Only one hypothesis, then, remains possible: namely, that concrete movement, capable, like consciousness, of prolonging its past into its present, capable, by repeating itself, of engendering sensible qualities, already possesses something akin to consciousness, something akin to sensation. (247)

Nature, on this reading, is a latent consciousness with the inherent power of mind.

We find similarly suggestive passages in Bergson's most famous book, *Creative Evolution* (1907). He calls "pure willing" the "current that runs through matter, communicating life to it" (260), recalling Schopenhauer. In an almost hylozoistic manner he argues that both matter and life are like an "undivided flux," each interpenetrating the other. But Bergson is silent on any further implications or articulations of panpsychism.

Then in 1911 Bergson delivered a lecture at the University of Birmingham titled "Life and Consciousness," which was later published in the book *L'Energie spirituelle* (published in translation as *Mind Energy*). In the translator's preface to the book, Carr comments that just as the earlier conceptions of physical reality have been unified under the concept of energy, so too can the ultimate psychical reality be described as such: "[The] dynamic conception of psychical reality has replaced the older concept of mind [identified with awareness or consciousness], and the physical analogy suggests energy as the most expressive term for it." (Bergson 1911/1920: vi)

In the lecture, Bergson made something of an identity between mind and consciousness, and posited memory—along with “anticipation of the future”—as a leading feature of consciousness. “*In principle,*” he then claimed, “consciousness is co-extensive with life.” (11) As to whether inert matter has any aspects of mind, he wrote that “matter is necessity, consciousness is freedom.” Yet mind is an energy-form that somehow inserts itself into matter and animates it—which can only happen if they are fundamentally linked:

We may surmise that these two realities, matter and consciousness, are derived from a common source. If . . . matter is the inverse of consciousness . . . then neither matter nor consciousness can be explained apart from one another. (23)

Matter would not be receptive to life unless it had a preexisting and inherent tendency to it. “In other words, life must have installed itself in a matter which had already acquired some of the characters of life without the work of life.” (26–27) Again, highly suggestive comments, but something less than outright panpsychism.

The last and perhaps clearest indication comes from *Duration and Simultaneity* (1922), which contains Bergson’s strongest statement of his process philosophy. All space-time events (that is, *all* events) proceed from moment to moment, each phase at once both something new and something old. Every event retains some aspect of the preceding event(s), otherwise there would be no continuity to the world. Things persist in space and in time, energy flows continuously, and characteristics and qualities carry over from past into future. There is both novelty and stability in all aspects of reality. The aspect of stability, of the carryover of past into future, is essentially an aspect of memory. The future always remembers the past, if only in a small degree, and even as it creates something new. Thus memory inheres in all things. Since memory is equated with mind, the obvious conclusion is that mind is in all things. Bergson is notably clear on this point:

What we wish to establish is that we cannot speak of a reality that endures without inserting consciousness into it. . . . It is impossible to imagine or conceive a connecting link between the before and after without an element of memory and, consequently, of consciousness.

We may perhaps feel averse to the use of the word “consciousness” if an anthropomorphic sense is attached to it. [But] there is no need to take one’s own memory and transport it, even attenuated, into the interior of the thing. . . . It is the opposite course we must follow. . . . Duration is essentially a continuation of what no longer exists into what does exist. This is real time, perceived and lived. . . . Duration therefore implies consciousness; and we place consciousness at the heart of things for the very reason that we credit them with a time that endures. (1922/1965: 48–49)

Capek (1971: 302) called this passage “the basis of Bergson’s panpsychism.”⁵

In the end Bergson’s panpsychism is still perplexing. The relevant passages are somewhat isolated examples. The deeper implications seem to be unexplored. Bergson does not explicitly mention panpsychism, nor does he discuss other comparable theories, nor does he cite any of the extensive history on the matter. In part this is due to the nature of Bergson’s style of writing, but one is still left wanting further elaboration.

7.2 Schiller

In 1907 came a major milestone in the development of panpsychic philosophy: Ferdinand Schiller’s *Studies in Humanism*. Schiller (1864–1937) is best known as a humanist and pragmatist, and his particular interpretation of these views was original and insightful. In the early part of the twentieth century there were four major pragmatist philosophers: Peirce, James, Dewey, and Schiller. Interestingly, all four held panpsychist views. Yet this fact does not appear to bear directly on pragmatism, which traditionally includes the views that (a) truth is not absolute, and depends in some sense on human interaction; and (b) the critical factor in a philosophical theory is its *consequence*, its implications in the real world. Perhaps openness to panpsychism comes from the flexibility of thought engendered by pragmatism—the willingness to repudiate standard or fixed notions of truth—along with the view of experience as an ongoing process that is in some sense constitutive of both subject and object.

The personal and subjective aspects of pragmatism were taken up by Schiller, and he developed them in light of a deeply humanistic perspective. These led him to a panpsychist ontology and philosophy of mind. Even in his first major work, *Riddles of the Sphinx* (1891), he demonstrated an openly panpsychist worldview. His central idea here is that Matter is driven by evolutionary forces toward an ever-greater form of Spirit, and in fact is essentially a spiritual substance: “Matter ultimately [is] but a form of the Evolution of Spirit.” (276) This is a striking interpretation of evolution, and it predates the similar worldview of Teilhard by some 40 years.⁶

Schiller’s panpsychist idealism draws on scientific ideas for confirmation. He reiterates the dynamist position that atoms are simply centers of force, and Force, as an ontological category, is to be interpreted as a spiritual entity:

Force is a conception which inevitably implies the spiritual character of ultimate reality. Historically it is undeniable that Force is depersonalized Will, that the prototype

of Force is Will. . . . The [related] sense of Effort also . . . is irresistibly suggestive of the action of a spiritual being. For how can there be effort without intelligence and will? (274)

The reference to Schopenhauer's system is clear.

Thus, a form of intelligence exists in all levels of matter. The Force-atoms can properly be thought of as monad-like spiritual things possessing proto-mental characteristics: “. . . it is not very much more difficult to conceive of an atom as possessing rudimentary consciousness and individuality . . . ” (277).

Schiller observes that most of his contemporary forms of idealism are classically humanist, in that Mind either requires or is reflected in human mentality. Evolution shows that the Earth existed long before humans, and critics have used this fact to argue that without spiritual beings there could be no idealism. But Schiller's “evolutionary idealism” answers this objection by claiming that “material evolution is an integral part of the world-process, and obeys the same law as spiritual evolution.” Thus, we must rightly conceive of atoms as “spiritual beings”; for “the material is but an earlier and less perfect phase of the spiritual development” (306).

These early themes are more fully developed in *Studies in Humanism*. Central to the book are the notions of truth and reality. Schiller directly challenges the dominant mechanistic view of objective reality, of a reality unaffected by the thoughts and perceptions of the observer. Objective reality implies a notion of absolute truth, fixed and eternal, awaiting our discovery. For Schiller such ideas are nonsense. Both truth and reality are literally created by human beings. Our minds, working on the raw chaos of the material world, condition and shape that which we ultimately call facts or reality. Humans are active participants; the making of truth is “an active endeavor, in which our whole nature is engaged” (425). Schiller is emphatic: “. . . reality can, as such and wholly, be engendered by the consequences of our dealings with it” (428).

Schiller takes our “making of truth” and “making of reality” to be central to any acceptable epistemology. The mere act of knowing, of encountering and contemplating, changes both the knower and the known. The knower is affected by his encounter with any given object; his active selection of things, and reactive bodily states, are the most direct ways in which he is changed. The object known is affected either by physical consequences of being known, or by its sensitivity to the state of the knower (as when an actor suffers stage fright by “being known” by the audience). Since obviously both the knower and the known are aspects of reality, it is clear that reality is actually changed by the act of knowing.

One can perhaps see how humans or the “higher animals” may be affected by the processes of knowing or of being known. But what about the lower animals, or plants, or inanimate objects? Schiller is adamant that *all objects* are altered by such processes. He takes the standard example of a stone. Here is an object that displays an “apparent absence of response,” and seems utterly unconcerned about its environment. But this apparent unresponsiveness is illusory:

A stone, no doubt, does not apprehend us as spiritual beings. . . . But does this amount to saying that it does not apprehend us at all, and takes no note whatever of our existence? Not at all; it is aware of us and affected by us on the plane on which its own existence is passed. . . . It faithfully exercises all the physical functions, and influences us by so doing. It gravitates and resists pressure, and obstructs . . . vibrations, etc., and makes itself respected as such a body. And it treats us as if of a like nature with itself, on the level of its understanding. . . . (442)

The common world of knowledge, the common reality between a person and a stone, is clearly not the same as that between two people, but it is no less real. It is a brute plane of existence, one of mass, force, temperature; it is one in which the two objects, knower and known, come together with different histories and different sensitivities. The stone “plays its part and responds according to the measure of its capacity” (ibid.).

To the charge that this view is “sheer hylozoism,” Schiller responds: “What if it is, so long as it really brings out a genuine analogy? The notion that ‘matter’ must be denounced as ‘dead’ . . . no longer commends itself to modern science.” (443) Schiller then notes that his view is more correctly described as panpsychism—as seeing all things with a mind analogous to that of a human. This is why he emphasizes that his view is that of humanism. And it is humanistic in a second sense: that it seeks to integrate the human into the universe. After all, the true end objective of any valid system of philosophy is “to make the human and the cosmic more akin, and to bring them closer to us, that we may act upon them more successfully.” (ibid.)

Thus Schiller makes his case that both the knower and the known are altered, changed, re-made, in the process of knowing. A critic may reply with the charge that this is not what one means by “making reality,” but this is beside the point. Of course Schiller does not mean that we can create something out of nothing, or that we have some strange paranormal powers. We work with the stuff of the universe, which is for us meaningless and in a sense non-existent *in itself*, until we act on it, and make it something known, something real.

But Schiller was the first to make the leap of understanding, to see (A) that all things have an aspect of mentality after the manner of the human, and therefore (B) that *all things*, not just humans, *have some power to make reality*. This is not merely panpsychism, but an articulated theory of mind as an active and universal quality. He is very explicit on this point: humanism, as he conceives it, sees “the occurrence of something essentially analogous to the human making of reality throughout the universe” (437).

Such a theory of mind has been completely unexamined by twentieth-century philosophers. And understandably so, because it is in complete opposition to the positivism and realism that have dominated recent discussion. And yet, Schiller argues, something approaching a realist position is obtained, because of our common human physiology, culture, and history. Of course, the common world among humans will be different from the one that includes other animals, or the one with inanimate objects. Such a view might be called a qualified realism. Of recent philosophers, only Skolimowski (1994) has further developed this line of thinking.

Schiller maintained this overall philosophical outlook throughout his writings. In one of his last works, *Logic for Use* (1929), he reiterated the themes found in *Studies of Humanism*. In discussing the meaning of humans as makers of reality, he noted: “For what is real and true for us depends on our selecting interests: the answers we get follow from the questions we put.” (445) He emphasized his pragmatism and his thesis of action: “Real knowledge does not lie idle—it colours our life. We act on it, and act differently. So reality is altered, not only *in* us but *through* us.” (446) And he again pointed out that every object has some qualified power to make reality and to display dynamic sensitivity to the world:

. . . we can say that inanimate objects also are responsive to each other, and modify their behavior accordingly. A stone is not indifferent to other stones. On the contrary, it is attracted by every material body in the physical world. . . . The stone responds, after its fashion, to our manipulation. Treat them differently, and they behave differently: that is as true of stones as of men. (447)

Thus, all objects participate in a common world based on their own capacities and sensitivities. From Schiller’s panpsychist perspective, this is the process by which things collectively create an inter-subjective world.

7.3 Alexander, Lossky, Troland, and Dewey

In 1914 Samuel Alexander (1859–1938) released an important article titled “The Basis of Realism.” Alexander was, along with Moore, Russell, James,

Holt, and Montague, one of the so-called new realists; they argued (among other things) that objects exist independent of the human mind, but not necessarily of mind in general. Alexander put forth a metaphysical system in which there exists at least six levels of emergence in the evolutionary universe: (1) Space-Time, (2) Primary qualities of matter, (3) Secondary qualities of matter, (4) Life, (5) Animal mind, and (6) Deity. This emergent hierarchy is significant for two reasons. First, it indicates Alexander's conception of an evolutionary universe, moving from space and time through matter, life, and on to God; he was one of the first philosophers (along with Schiller) to envision such a grand sweep of evolution, and he anticipates some of the important ideas of Teilhard and Skolimowski.⁷ Second, it emphasizes Alexander's unique conception of mind. He speaks of mind in two senses: both in the common, human sense, and in a more ontological, panpsychist sense. The latter is the view in which mind is seen as representing the connection between any one level of the hierarchy and all lower levels. In particular, each level serves as the mind of the levels below. At the level of space-time, space is seen as primary, time as secondary; thus Alexander can claim that "time is the mind of space." Similarly, life is seen, when viewed from below, as the mind of space, time, and matter. We are the "mind of life," and we tend to identify this mind as true mind only because it is our privileged point of view.

The central point is that our cognitive relationship with things is essentially the same as the relationship *between any two objects*—and this is the main thrust of "The Basis of Realism." Alexander (1914/1960: 189) first notes that "mind and things are continuous in kind." This continuity between knower and known is described as one of "compresence," or co-present existence. Thus, he writes, "our compresence with physical things . . . is a situation of the same sort as the compresence of two physical things with one another" (191), or more generally, "between any two existences in the world whatsoever."⁸ The focus is on the comprehension of things of an equal or lower order in the ontological hierarchy:

Mind enjoys itself and contemplates life and physical things. The living being, the tree, enjoys itself and contemplates the air it breathes. . . . The distinction may be carried further down . . . and it may be carried up [to the realm of the divine]. . . . The universe consists of distinct real existences of different order, compresent with each other and 'knowing' each other in such measure as is possible to them at their various stages of development. (195)

Alexander concludes with an argument by analogy:

. . . matter receives much more [potency] than materialism credits it with. . . . It is even possible that the union of body and mind which we find in the human person

may turn out in the end to be typical of every form of existence from the lowest to the highest and perhaps of the universe as a whole. (ibid.)

Thus he applies a First Principles argument for panpsychism, defining mind as integral to the very structure of reality.

In perhaps his most famous work, *Space, Time, and Deity* (1920), Alexander developed these ideas further, rejecting strict parallelism between the physical and psychical and opting to see mind as an emergent aspect of each given level of existence. The standard response to anti-parallelism is, he says, some form of animism in which the psychical is present in all things but is independent of the physical (1920, volume II: 12–13). Instead of animism he proposes a panpsychist quasi-identity theory in which physical events are causal on the physical, mental events are causal on mental, many physical events are identical to their corresponding mental events, but some physical events have no mental counterpart. Each emergent mental level is “expressible completely or without residue in terms of the lower stage” (67); the mind is therefore “equivalent only to a portion of [a] thing”; that is, it is a subset of the total entity. Thus, Alexander clearly advocates a hierarchical form of panpsychism, with higher levels of mind building on lower levels:

For though matter has no life, it has something which plays in it the part which life plays in the living organism and mind plays in the person; and even on the lowest level of existence [i.e. motion], any motion has its soul, which is time. Thus matter is not merely dead as if there was nothing in it akin to life. It is only dead in that it is not as alive as organisms are. . . . We are compelled to the conclusion that all finite existence is alive, or in a certain sense animated. (67)

The human mind is an emergent phenomenon of our lower levels of existence (our life, our matter, etc.), a process that is repeated universally; “everywhere this result appears to be secured as it is in our own persons.” Hence, “all existence is linked in a chain of affinity, and there is nothing which does not in virtue of its constitution respond to ourselves . . . ; so there is nothing dead, or senseless in the universe, [even] Space-Time itself being animated” (69).



The early part of the twentieth century witnessed a minor wave of panpsychist thinking in Russia. Among the more notable philosophers was Peter Ouspensky (or Uspenskii) (1878–1947). One of Ouspensky’s central works, *Tertium Organum* (1912/1981), elaborated a startlingly clear and explicit

panpsychism; chapter 17, for example, is unparalleled in its candor and unapologetic tone. Adopting a strong form of the Continuity argument, Ouspensky argued passionately that, since man is alive and enspirited and is an integral part of nature, these same phenomena must be omnipresent:

If intelligence exists in the world, then intelligence must exist in everything, although it may be different in its manifestations. . . . There can be nothing dead or mechanical in Nature. If life and feeling exist at all, they must exist in everything. . . . We must admit that every phenomenon, every object has a mind. *A mountain, a tree, a river, the fish in the river, drops of water, rain, a plant, fire*—each separately must possess a mind of its own. (1912/1981: 165–166)

Shortly thereafter, the Russian philosopher Nicholai Lossky (or Losskii) (1870–1965) published an important book detailing a panpsychist ontology: *Mir kak organicheskoe tseloe* (The World as an Organic Whole) (1917/1928). Lossky was the most influential of the Russian neo-Leibnizians, a Christian-oriented movement that began in the 1880s with Alexey Kozlov. Kozlov envisioned a form of monadology in which the monads, unlike Leibniz's articulation, had the essential ability to *interact*. These interacting, spiritual, conscious monads were conceived as the basis of all reality. Lossky elaborated on Kozlov's system in the 1901 article "Kozlov: His Panpsychism."⁹

Lossky called his system *intuitivism*. It was more articulated than Kozlov's, and incorporated a radical interpretation of Christian metaphysics. Aligned with both the new realism of Alexander and Montague, and the classical idealism of Berkeley, intuitivism held that perception is reality, i.e., that reality is identically that which is presented in the mind of the perceiver. "Knowledge," he wrote, "is not a copy . . . but reality itself." (1906; cited in Starchenko 1994: 656) Following Leibniz, the world is composed of innumerable "substantial agents," each of which is superspatial and supertemporal, each interacting with the entire cosmos, each creating reality through cognitive acts. This is the basis for his vision elaborated in *The World as an Organic Whole*.

All objects of the material world, including humans, other animals, plants, rocks, the Earth, are in fact just substantial agents in different stages of evolution. Natural processes, forces, and events are all the result of actions of such agents; this was his view even many years later:

. . . all events, all processes—i.e. all real being—are created by substantial agents: the singing of a tune, the experiencing of feelings or desires is the manifestation of some self. Acts of attraction and repulsion and movements in space are produced by human beings and also by electrons, protons, etc., in so far as substantial agents also lie at their basis. (Lossky 1951: 253)

These agents are to be conceived as spiritual entities, and thus the world is profoundly ensouled. Starchenko (1994: 661) explains that, on Lossky's view, spirituality "is spread throughout the world, even through material nature, but in discrete, strictly apportioned portions, so that even a small portion of rock crystal had a special 'indistinct soul' that aspired to a definite goal known only to it."

Substantial agents fundamentally reflect human personhood, and thus are to be considered as persons in their own right. These persons are structured in a hierarchical fashion, from the subatomic particles up to the cosmos itself. Each level of being, and each object or system within those levels, is a "person of persons," both composed of lesser agents and a part of larger-scale ones. This is Lossky's doctrine of *hierarchical personalism*; it recalls both Cardano's and Fechner's hierarchical views of the world, but is more explicit and more articulated. Agents surrender a portion of their independence to enter into alliances, forming larger-scale beings:

The combination of several agents . . . is a means of attaining more complex stages of existence. . . . That results in such a hierarchy of unities as an atom, a molecule, a crystal, a unicellular organism, a multicellular organism, a community of organisms like a beehive or a nest of termites; in the sphere of the human life there are nations and mankind as a whole; further, there is our planet, the solar system, the universe. Each subsequent stage of unification possesses higher creative powers than the preceding and is headed by a personality on a higher stage of developments. (Lossky 1951: 256)

This, of course, suggests an elaboration of Leibniz's thesis of the dominant monad, and Whitehead's "organism of organisms" concept.

However, Lossky denied that his view was a form of panpsychism, which he defined as making an identification between mental and physical processes. Mental and physical events are not identical but are related via a common basis in spirit. The net result is something that clearly fits the more general definition of panpsychism: "Since all matter is active and purposive in character, so that it is capable of progressing to higher levels of being, it must be recognized that there is no lifeless matter. . . . Matter is living because the basis of it is spirit." (1917/1928: 171)



In 1918 the Harvard University philosopher Leonard Troland argued for an analytical form of panpsychism that he called *paraphysical monism*. Following Clifford's mind-stuff theory, Troland claimed that the psychic realm has elementary atomic particles that are the counterpart of the physical atoms. At the time physics recognized only two elementary particles, protons and

electrons; thus he argued there must exist “at most only two kinds of psychical atoms”: “para-electrons” and “para-protons.” All conceivable mental states and feelings, then, would be seen as combinations of these two psychical atoms.

Since physical atoms know only two forces, attraction and repulsion, Troland claimed by analogy that the psychical atoms feel only the corresponding psychical qualities of “pleasantness” and “unpleasantness”—another reference to Empedocles’ Love and Strife. Evolution in the physical world tends to greater cohesion and integration, and therefore the parallel psychical realm tends toward ever-greater pleasantness or happiness in an objective sense of the word. This he called the “psychical law of hedonic selection” (1918: 58).

Troland further developed and revised his thesis in a 1922 article, “Psychophysics as the Key to the Mysteries of Physics and of Metaphysics.” Here he offered an early insight into the philosophical importance of relativity theory: that it implies active participation by the observer: “. . . all three of the fundamental dimensions of physics [space, time, mass] are conditional for their objective significance upon the conditions of observation” (145). It was this idea that observation (or more generally “experience” or “sentience”) was implicated in any valid concept of reality that John Archibald Wheeler later developed into his notion of the participatory universe.

Troland then noted that the parallelism between physics and the mental realm implies the existence of a certain regularity or law-like behavior between them—“psycho-physical bridging laws.” He was one of few philosophers to argue that “consciousness is at least in part representable as a mathematical function of certain aspects of organic structure and activity” (148). This led him to conclude that a form of the identity theory must be true—that “there exists a point-to-point correspondence between the constitution of immediate experience and that of the cortical activity” (150). As a consequence, “we are required to treat mind as if it were a substance and to identify it with the reality of matter” (152). Troland called this view *psychical monism*. He claimed that this theory had originated with Fechner in the mid 1800s, but he also cited Clifford, Prince, Strong, and Paulsen as advocates. In spite of these panpsychic references, Troland did not make clear that psychical monism is necessarily panpsychism until the end of the article.¹⁰ He noted that psychical activity must be associated not only with the brain as a whole but with each level of structure, from individual neuron down to atom: “For every neuron in the nervous system and for every atom in each neuron there must be a real psychical fact which is

related to my consciousness. . . .” (156) Thus, each person’s individual field of consciousness must be “considered the focus of a vast psychical nervous system . . . made not of protons and electrons but of atoms of sentiency” (ibid.). This is a straightforward application of the mind-stuff theory.

But, Troland continued, “you cannot stop here,” because the continuity of physical nature compels us to envision a psychical universe “which corresponds point-for-point . . . with all the constituents of my organism and of my environment; indeed, with the totality of the physical universe” (157). He referred to this as “the panpsychic extension of consciousness” to all physical reality. Furthermore, this view, far from being inconsequential, suggests a new method of metaphysical research:

This new method . . . consists simply in determining carefully the laws which link the factors of human consciousness with those of brain function and then generalizing these laws . . . to any physical structure or process whatever. The possibility of doing this rests upon the continuity of nature and upon the belief that human consciousness is sufficiently complex to exemplify all of the elementary psycho-physical relationships. (161)

Panpsychic “psychical monism” is a theory that Troland believes has great merit and “should be expected . . . to take the philosophical world by storm” (153). That it has not done so is due, he says, to the “habitually fuzzy methods of thinking” of professional philosophers and psychologists.



In 1925, the fourth major pragmatist philosopher, John Dewey (1859–1952), published his most significant philosophical work, *Experience and Nature*. In examining the connection between body and mind, Dewey commented that medieval views of causality led to stark contrasts between the two; as a result, “there were no intermediates to shade gradually the black of body into the white of spirit” (1925: 251). He then compared the physical bases of organic and non-organic things, concluding that, when properly understood, both organic and inorganic objects share in comparable “qualities of interaction.” This continuity between organic and inorganic is the basis for his quasi-panpsychism.

Dewey explained that any living organism, such as a plant, exhibits certain basic qualities that we typically associate with life: needs, efforts, and satisfactions. But these processes are not unique to life. He proceeds to more closely define each term: a need is a “condition of tensional distribution of energies” wherein a body is placed in an “unstable equilibrium,” effort are movements or changes that “modify environing bodies” in such a way that

equilibrium is restored, and satisfaction is the actual restoration of that equilibrium (253). The need-effort-satisfaction process is a “concrete state of events” that is common to all things:

. . . there is nothing which marks off the plant from the physico-chemical activity of inanimate bodies. The latter also are subject to conditions of disturbed inner equilibrium, which lead to activity in relation to surrounding things, and which terminate after a cycle of changes. . . . (ibid.)

There is, of course, a difference between a plant and something like an iron molecule; this difference “lies in the *way* in which physico-chemical energies are interconnected and operate, whence different *consequences* mark inanimate and animate activity respectively” (254). The emphasis on consequences again displays Dewey’s pragmatist orientation. The plant, he claimed, actively seeks to maintain its original structure. The iron molecule, on the other hand, “shows no bias in favor of remaining simple iron; it had just as soon, so to speak, become iron-oxide.” Yet of course, the iron atom retains its structure even when bound with oxygen atoms in the form of rust.¹¹ The interaction with oxygen becomes dominant, and thereafter the combined structure that we call rust is what acts differently than pure iron.

Dewey does not attribute mind or psyche to iron molecules. These are qualities of the specially organized forms that we call life. And yet something like sensitivity may apply to iron, in that it has the power of selection in its interaction with the environment. Iron reacts only with oxygen (under normal circumstances), and thus discriminates in favor of it. “Discrimination,” Dewey adds (256), “is the essence of sensitivity.”

The critical issue then is the continuity between humanity and nature, and once again a Continuity argument tends toward panpsychism. Dewey elaborated this idea from the perspective of temporality in his 1940 article “Time and Individuality.” Adopting something of a process view, he observed that time-embeddedness is central to the meaning of the human: “Temporal seriality is the very essence . . . of the human individual.” (1940/1988: 102) Our life-history and progressive interactions with the world are the defining characteristics of our existence as individuals. Furthermore, science reveals that “temporal quality and historical career are a mark of everything” (ibid.: 104), from human beings to atomic particles. This, therefore, implies a kind of individuated personality in all things, whether human individuals or (non-human) “physical individuals.” Such a viewpoint “does not mean that physical and human individuals are identical, nor that the things which appear to us to be nonliving have the distin-

guishing characteristics of organisms. The difference between the inanimate and the animate is not so easily wiped out. But it does show that there is no fixed gap between them." (108)

Dewey sought to avoid supernaturalism, and in a unified, naturalistic universe a compelling case can be made to attribute mind-like or at least person-like qualities to all things. Putting it concisely, Hartshorne (1937: 40) said of Dewey's view that "if man is natural, then nature is manlike." For Hartshorne, such continuity logically and necessarily implies panpsychism: "Consistently carried out, [Dewey's] attitude here must, if I am not deceived, carry him all the way to a radical panpsychism, according to which all process has a psychic character." (40–41) And yet Dewey apparently was unwilling to embrace this logical conclusion. He has been justly criticized for his half-hearted view. Rorty (1995: 1), for example, acknowledges that "[a] sort of panpsychism . . . loomed large in . . . Dewey's mind." He proceeds to construct a "hypothetical Dewey" who was "a naturalist without being a panpsychist"; the point being "to separate . . . what I think is dead in Dewey's thought" (ibid.: 3).¹² Of course, it is not the panpsychism itself that is dead, but rather, perhaps, Dewey's formulation of it.

Panpsychist ideas continued to draw attention through the 1920s. In *Mind and Its Place in Nature* (1925), the philosopher Durant Drake (1878–1933) advocated another mind-stuff form of panpsychism. He argued that the basic building block of matter, whether energy, force, or electricity, must be understood as having a noetic component: ". . . these units of matter are psychic units" (94). This fact supplements rather than challenges the scientific view. These psychic units are neither conscious nor aware, as these are qualities reserved for highly evolved organisms. Thus, he says, "it would be wrong to use 'mental' or 'feeling' to denote the stuff of which things are made" (98). Likewise with the notions of thought, sensation, emotion, and will. Such "poetic and fanciful" anthropomorphization would be an inaccurate portrayal.

Yet Drake saw the stuff of reality as intimately psychic. "The term 'panpsychism'," he wrote, "may properly be applied to our theory; but we must understand that it is only mind-*stuff* that is universal, not mind itself. . . . The whole world is indeed, in a sense, alive . . . It is an enormously intricate pattern of psychic units, continually changing their interrelations." (99) Drake's main argument for this worldview is based on continuity. Humans are made of the same materials as all things. Hence, "we are therefore free to believe that the stuff that is deployed in this or that order throughout the universe is the same sort of stuff that composes us, sentient

being that we are” (100). Such a worldview has no effect on science, but in spite of this it has a number of virtues:

It does assert our thoroughgoing kinship with all the rest of the natural world. It puts an end to the need of introducing such magical entities as ‘souls’ or ‘entelechies,’ and . . . explains consciousness in natural terms. It enables us to explain the origin of minds . . . [and] to see *how* matter affects mind, and how mind affects matter. (100–101)

Panpsychism, for Drake, solved important philosophical problems and offered an integrative worldview that placed humans in a larger natural order.

Also in this time frame, philosophers of science were becoming aware of panpsychist theories. This began a long period of scientific interest in panpsychism—see the following chapter. The fields of psychiatry and psychoanalysis were developing and branching away from philosophy, and they too brought certain panpsychist concepts into their realm of discussion. Wilhelm Reich, following Hartmann, advanced ideas connecting the unconscious with all of nature, thus leading to a putative resolution of the mind-body problem.¹³ The psychologist Sandor Ferenczi argued that a movement toward a “sophisticated” form of animism was useful in psychoanalysis:

Ferenczi saw psychoanalysis as marking a significant step forward in general scientific methodology, a step which he defined as “a return to a certain extent to the methods of ancient animistic science” and “the reestablishment of an animism no longer anthropocentric.” (Brown 1959: 315)

According to Ferenczi (1926/1950: 256), Freud himself had supported such a move:

Naive animism transferred human psychic life *en bloc*, without analysis, on to natural objects. [Freudian] psycho-analysis, however, dissected human psychic activity, pursued it to the limit where psychic and physical come in contact . . . and thus freed psychology from anthropocentrism.

The result was a “purified animism” (ibid.) that Freud employed to the benefit of his psychoanalytic technique.

7.4 The Process Philosophers—Whitehead and Russell

Modern process philosophy was originated in spirit by Bergson, developed into a philosophical system by Whitehead, supported by Russell, and carried on to the present day by Hartshorne, Griffin, De Quincey, and others. It was a logical result of the revelations of the so-called new physics and the

new conceptions of space-time. Process philosophy saw time as a fundamental ontological entity, something intricately and deeply involved in the nature of being. Given that all matter is dynamic, and that space is more properly viewed as space-time, there is clearly a sense in which all things can be seen as “events,” i.e. as occurrences in space and time.

The third (“metaphysical”) phase of Whitehead’s (1861–1947) philosophical career began in 1924, when at age 63 he accepted the position of Professor of Philosophy at Harvard. The next year he published the first of some half a dozen works that included either intimations or affirmations of panpsychism. Whitehead’s panpsychist theory of mind is relatively well known and has been elaborated in a number of works, most recently by Griffin (1998) and De Quincey (2002). What follows is thus only a brief outline of his ideas, highlighting the major developments in his panpsychism.

In the first book of this period, *Science and the Modern World* (1925/1967), Whitehead argued against both the subjectivist and objectivist (in the usual sense) views. Here he introduced in some detail his conception of a “philosophy of the organism,” a conception grounded in a “provisional realism” that could serve as an alternative to the scientific, materialistic worldview: “The field is now open for the introduction of some new doctrine of organism which may take the place of the materialism with which . . . science has saddled philosophy.” (36) This doctrine takes the human “psychological field” as its starting point: “If you start from the immediate facts of our psychological experience,” and accept that there are “no arbitrary breaks” in nature (i.e. the argument from Continuity), then “you are led to the organic conception of nature” (73). And by ‘organic’ he means to include “the organic unities of electrons, protons, molecules, and living bodies” (ibid.).

On the one hand Whitehead found it “difficult to believe that the experienced world is an attribute of our own personality” (90) as subjectivism would have it; on the other hand, it was clear to him that mind or mentality is somehow intimately involved in the substance of reality. He explained that the more appropriate view of provisional realism (or, following Peirce, objective idealism) is rather a combination of the two: “. . . the world disclosed in sense-perception is a common world, transcending the individual recipient. . . . [But also], cognitive mentality is in some way inextricably concerned in every detail.” (ibid.) This passage may be more a description than an endorsement, but it is clearly the approach Whitehead favored.

Later Whitehead described “actual occasions” as events in nature. He then added this: “. . . a natural event . . . is only an abstraction from a *complete*

actual occasion, [which] includes that which in cognitive experience takes the form of memory, anticipation, imagination, and thought." (170; italics added) If all actual occasions are "complete," then presumably all would have memory, thought, and so on. If not, then apparently only some would; Whitehead is not clear on the matter. In fact process philosophers still debate whether he was technically panpsychist at this early stage of his metaphysical thought.¹⁴

This doubt persisted in *Religion in the Making* (1926). Here Whitehead made his first pronouncement that natural events have two poles, one physical and the other mental: "The most complete concrete fact is dipolar, physical and mental." (1926a: 114) Again one is left wondering if all events are complete or whether some events have only physical poles. Whitehead eventually adopted the former view, but again it is not clear at this point in his writings.

Whitehead finally clarified his view in "Time," a lecture presented in late 1926. Here he made clear that every natural occurrence is a complete event in which an initial physical phase (pole) is replaced by a mental phase: "the mental occasion supercedes the physical occasion" (1926b/1984: 304). "With 'Time,'" Ford explains, "panpsychism is clearly affirmed in the sense that every actuality has mentality." (1995: 28) This concept is elaborated in *Process and Reality* (1929), in which Whitehead notes that "the mental pole originates as the conceptual counterpart of operations in the physical pole" (1929/1978: 248) and that "every actual entity is 'in time' so far as its physical pole is concerned, and is 'out of time' so far as its mental pole is concerned" (ibid.). The full implications of these statements are difficult to ascertain,¹⁵ and Whitehead himself seems to have been unable to clearly articulate them. At a minimum it is clear that all realities are "events" and that all events have both physical and mental aspects to them. Whitehead thus combines elements of Spinoza, Leibniz, and Bergson, uniting a kind of dual aspect theory with the quantum-like nature of the actual occasion.

Whitehead is somewhat clearer in *Modes of Thought* (1938). The title of the chapter "Nature Alive" gives in itself some indication of his view. It includes such passages as the following:

. . . this sharp division between mentality and nature has no ground in our fundamental observation. . . . I conclude that we should conceive mental operations as among the factors which make up the constitution of nature. (156)

In the 1941 lecture "Immortality," one of his last works, Whitehead emphasized some of the main points of his overall philosophical system. His holistic approach is evident: "There is no such mode of ["independent"]

existence; every entity is only to be understood in terms of the way in which it is interwoven with the rest of the Universe.” (1941: 687) More to the point, in his discussion of one central aspect of reality he writes:

According to this account . . . there is no need to postulate two essentially different types of Active Entities, namely, the purely material entities and the entities alive with various modes of experiencing. The latter type is sufficient to account for the characteristics of that World. (695)

Here again Whitehead claims that all real entities have an experiential, subjective aspect to them. His refutation of mechanism is thus derived from an ontology in which mentality is an aspect of all modes of reality.



Whitehead’s student and colleague Bertrand Russell (1872–1970), in the latter part of his career, held a neutral monist view in which events were the primary reality and mind and matter were both constructed from them. In this sense he continued the line of process thinking of Bergson and Whitehead. His neutral monism was unique in that he proposed that mind and matter each resulted from a set of causal laws, but different laws in each case¹⁶; matter resulted from physical laws of science, and mind resulted from “mnemonic” laws that were not yet understood. Nor was clear the relationship, if any, between these two sets of laws.

The connection between neutral monism and panpsychism is an interesting one. If, for example, all things are composed of events, then an event is capable of giving rise to mind as well as matter. So either an event undergoes some kind of bifurcation that steers it in one of two fundamentally different paths, resulting in two fundamentally different categories of existence, or an event retains both a mind-like and a matter-like aspect—and hence mind is in matter and matter is in mind. The former case presents a difficult ontological problem which Russell attempted to resolve with his two classes of causal laws. The latter is the more logically coherent alternative; this seems to have been the choice of Bergson and Whitehead, and even Russell, at times, appears to have endorsed it.

There are a number of instances in Russell’s writings that strongly suggest a panpsychist outlook. One of the first appeared in his 1915 article “The Ultimate Constituents of Matter.” Russell offered up an alternative theory of matter in which *sense data* compose the ultimate reality of things (this preceded his neutral monist phase); this thesis was a clear extension of Mach’s idea that reality consists of sensations. As with Mach, the concept

of sense-data seems to imply a psychological or mental aspect to reality—though at this time Russell apparently denied this interpretation.

After his endorsement of neutral monism, Russell argued that sensations belonged equally to mind and matter: “I should admit this [neutral monist] view as regards sensations: what is heard or seen belongs equally to psychology and to physics. . . . Sensations are subject to both kinds of [causal] laws, and are therefore truly ‘neutral’. . . .” (1921: 25–26) So sensation is apparently part of the stuff of reality. But this again is not necessarily panpsychism, or even pansensism. Later in *The Analysis of Mind* he did, though, put forth a kind of qualified pansensist position: “We may say generally that an object whether animate or inanimate, is ‘sensitive’ to a certain feature of the environment if it behaves differently according to the presence or absence of that feature. Thus iron is sensitive to anything magnetic.” (260) But he was quick to add that this form of sensitivity does not constitute *knowledge*, let alone intelligence. As such, it is a rather trivial form of pansensism—yet one that he apparently held for much of his life. He reiterated it nearly 20 years later: “Perceptive awareness is a species of ‘sensitivity’, which is not confined to living organisms, but is also displayed by scientific instruments, and to some degree by everything.” (1940/1949: 13)

In *The Analysis of Matter* (1927a) Russell revealed his process orientation, positing events as the neutral, ultimate elements of reality. In this theory he continued to narrow the mind-matter gap, characterizing matter as “less material, and mind less mental, than is commonly supposed” (7). As a consequence, “physics must be interpreted in a way which tends towards idealism, and perception in a way which tends towards materialism” (ibid.). Both matter and mind are “logical structures” composed of events. Significantly, these events are in themselves to be seen, as in his earlier works, as sense-datum or “percepts”: “As to what the events are that compose the physical world, they are, in the first place, percepts, and then [secondarily] whatever can be inferred from percepts. . . .” (386) “Mental events,” he added, “are part of that stuff [of the world], and . . . the rest of the stuff resembles them more than it resembles traditional billiard-balls.” (388) Again, highly suggestive but less than definitive.

Russell rejected the mechanistic model of reality, but it is uncertain whether a form of panpsychism was implicated in the reason. He was, however, clearly willing to blur the distinction between mind and matter. In *An Outline of Philosophy* (1927b) he addressed this directly, again in a way suggestive of panpsychism: “My own feeling is that there is not a sharp line, but a difference of degree [between mind and matter]; an oyster is less men-

tal than a man, but not wholly un-mental.” (209) Part of the reason why we cannot draw a line, he said, is that an essential aspect of mind is *memory*, and a memory of sorts is displayed even by inanimate objects: “we cannot, on this ground [of memory], erect an absolute barrier between mind and matter. . . . Inanimate matter, to some slight extent, shows analogous behavior.” (306) In the summary at the end of the book, he added this:

The events that happen in our minds are part of the course of nature, and we do not know that the events which happen elsewhere are of a totally different kind. The physical world . . . is perhaps less rigidly determined by causal laws than it was thought to be; one might, more or less fancifully, attribute even to the atom a kind of limited free will. (311)

Recalling the ancient Epicurean idea, this modern reference to an atomic free will was based on the newly discovered phenomenon of quantum indeterminacy.

Perhaps Russell’s clearest statement came near the end of his writing career, in the 1956 book *Portraits from Memory*. He asked a simple question: “What is the difference between things that happen to sentient beings and things that happen to lifeless matter?” (152) The common view is that inanimate things undergo many stimuli and reactions, but experience (in the noetic sense) is not one of them. Recalling his idea from *Outline of Philosophy*, he noted that the chief characteristic of experience is “the influence of past occurrences on present reactions,” that is, memory. Memory is “the most essential characteristic of mind, . . . using this word [memory] in its broadest sense to include every influence of past experience on present reactions” (153–154). As before, he pointed out that such a notion of memory must apply, properly speaking, to all physical objects and systems. Russell was explicit on this issue:

This [memory] also can be illustrated in a lesser degree by the behavior of inorganic matter. A watercourse which at most times is dry gradually wears a channel down a gully at the times when it flows, and subsequent rains follow [a similar] course. . . . You may say, if you like, that the river bed ‘remembers’ previous occasions when it experienced cooling streams. . . . You would say [this] was a flight of fancy because you are of the opinion that rivers and river beds do not ‘think’. But if thinking consists of certain modifications of behavior owing to former occurrences, then we shall have to say that the river bed thinks, though its thinking is somewhat rudimentary. (155)

This is as clear a statement as we find in Russell. Yet his reticence about fully endorsing such a view is obvious. Later in the book he tended toward agnosticism with respect to any intrinsic mental nature in physical

objects,¹⁷ stating that “we cannot say either that the physical world outside our heads is different from the mental world or that it is not” (164).

Panpsychist readings of Russell are rare. Hartshorne (1937) thinks he is virtually there. Popper (1977) locates him very close to a Leibnizian panpsychism. More recently, Chalmers has placed him in this camp. Referring to *The Analysis of Matter* (without quotation), Chalmers wrote: “Perhaps, as Russell suggested, at least some of the intrinsic properties of the physical are themselves a variety of phenomenal property [i.e. of sense-data]? The idea sounds wild at first, but on reflection it becomes less so.” (1996: 154) And we know the reason that it is wild: “There is of course the threat of panpsychism.” (ibid.) Chalmers raised the issue because he is sympathetic to this view, as discussed later. In general, though, most commentary on this aspect of Russell’s thought simply bypasses the question.

7.5 Phenomenology

Phenomenology, as a loosely bound school of philosophical concepts, generally is centered on the notion of mind and consciousness as a primary aspect of existence. Its development in the work of Husserl, Heidegger, and Merleau-Ponty, as well as the related developments in existentialism by Sartre and Marcel, seem to imply that mentality is a fundamental feature of the world, intimately bound up with any meaningful conception of being. This ontological essentialism has prompted some to suggest a connection with panpsychism. Hartshorne commented as follows:

[Heidegger holds] that a cautiously positive form of anthropomorphism [i.e. panpsychism]—that which attributes to other creatures neither the duplication, nor the total absence, but lesser degrees and more primitive forms, of those properties exhibited in high degree, and more refined or complex forms, of those in us—is the only rational initial hypothesis for us to form. (1979: 52)

Abram (1996) also drew inspiration for his neo-animism from the work of Husserl and Merleau-Ponty. He depicted the phenomenological worldview as one in which “the sensible world . . . is described as active, animate, and, in some curious manner, alive” (55). But the passages Abram cites are obscure and indirect, with no clear correlation to any recognizable form of panpsychism. Hartshorne’s statement above included a footnote reference to two vague passages in Heidegger, but, as with much of Heidegger’s writing, neither is conclusive.

Generally speaking, the obscurity of most phenomenological writing makes it difficult to discern any clear connection to panpsychism. There

are, however, certain ideas which, under the appropriate interpretation, are suggestive of it. For example, Heidegger's *Being and Time* (1927) attempts an analysis of being through the characteristics of Da-sein (literally, being-there). Da-sein is typically taken as pertaining to the *human* essence, but is amenable to a broader interpretation of being or existence in general. Thus, Heidegger's conclusions about Da-sein logically should pertain to all forms of being. The human "taking-account-of" and the relations such as "for-the-sake-of" and "in-order-to" seem to apply to all entities whatsoever, as Heidegger demonstrates no clear ontological distinction between humans and objects generally. Even simple physical encounters, like a raindrop hitting a leaf, can be seen as an episode of awareness or experience not unrelated to that of humans.

One recent study of Heidegger that suggests such a view is Harman's *Tool-Being* (2002). Harman aims to extend Heidegger's insights to reach their full logical conclusions, beyond that which even Heidegger himself did. Harman sees the key to Heidegger's whole philosophical system in his analysis of tools. Heidegger related tools to human Da-sein, but on Harman's view "the tool-analysis does not rely in the least on any priority of the human standpoint" (29). Any particular object may serve as a tool, and it stands in some relationship to every other object; using Heidegger's terminology, we may say that each entity exists "for the sake of" (*Um-willen*) any other thing that it encounters. As Harman says, "the structure known as the 'for-the-sake-of' occurs even on the level of soul-less matter" (30).

Thus, the presumed particularity of human consciousness in our everyday encounters is swept away. The network of relationality that we are embedded in, the "as-structure," is no longer the private domain of the human mind. "The ontological status of sentient awareness has been radically altered: it no longer has the entire as-structure to itself, and therefore has lost its previous ontological distinction." (225) Harman adds that "the as-structure of the human Da-sein turns out to be just a special case of relationality in general. We ourselves are no more and no less perspectival than are rocks, paper, and scissors." (*ibid.*)

Yet Harman resists casting this interpretation in a panpsychist light. In discussing an example of a metal stove sitting on a frozen lake, he says: "I see no reason to accept the animistic claim that such a stove . . . 'perceives' the lake in the usual sense." (223) He makes no explicit claim that his thesis of "pan-relationality" is any variant of panpsychism. Elsewhere he has stated that, even though he is "not inherently opposed" to panpsychism, he wants "to be careful in not jumping from the claim that all objects are

involved in relations to the much more far-ranging claim that all relations are psychic relations.”¹⁸ Yet this raises the question of the precise nature of the relationship (if any) between “psychic relations” and relationality in general. And all this, of course, relates to Harman’s own interpretation, not Heidegger himself. Harman’s view is that “there is no real panpsychist tendency in Heidegger,” period.

Likewise, Merleau-Ponty’s *Phenomenology of Perception* (1945) appears to articulate a sympathetic relationship between perceiver and perceived, wherein each actively apprehends the other. He imputes a kind of animate quality to the sensory world: “Hardness, softness, roughness and smoothness . . . present themselves in our recollection . . . as certain kinds of symbioses, certain ways the outside has of invading us. . . .” (1945/1962: 317) Elsewhere in the same book (ibid.: 211) he describes this process as one of an active world taking possession of the body. But such references are rare, and subject to various interpretations. Generally speaking, elements of panpsychism in phenomenology are faint at best. In Harman’s opinion, “it’s safe to say that there is no panpsychist strain anywhere in the phenomenological movement.”¹⁹

7.6 Teilhard de Chardin

There was perhaps no more visionary and exuberant panpsychist philosopher than Pierre Teilhard de Chardin (1881–1955). Teilhard—geologist, paleontologist, Jesuit priest, and philosopher—took elements of Bergson’s evolutionism and transcendental ethos and combined them with a devout Christianity to produce a unique and visionary metaphysical system. The core of his thesis was an elaboration of an idea from Schiller and Lossky: the concept of “complexity-consciousness.” This involved the notion that as matter evolves into ever-more-complex forms, so too does the corresponding dimension of consciousness that is attributed to it. Consciousness equals complexity; simple elements of matter possess a low-grade consciousness, and the more complex forms, like the human, possess it in great degrees. In Teilhard’s words (1959: 301): “[the] involution ‘of complexity’ is experimentally bound up with a correlative increase in interiorization, that is to say in the psyche or consciousness.”

Teilhard’s masterpiece, *The Phenomenon of Man*, was his first substantial work of philosophy. It was written over the course of several years and completed circa 1938 in the midst of a 20-year stay in China performing paleontological work. The book has many varied dimensions and implications, and panpsychism is only one aspect of Teilhard’s comprehensive vision.

The following passages indicate something of his beliefs, and give an idea how they fit into his overall system.

Early in *The Phenomenon of Man* Teilhard established his view that the realm of matter is driven by an evolutionary energy that carries it toward increasingly complex and intricate organization. This universal concept of energy presents itself in varying forms, including its different physical manifestations, but nonetheless is an energy that yields mind: “All energy is psychic in nature.” (1959: 64) Teilhard argued that the evolutionary process results in matter that possesses, at all levels of complexity, an interior that is inherently mental or psychical. Very much like Spinoza, he wrote that “there is necessarily a *double aspect to [matter’s] structure,*” and that “*co-extensive with their Without, there is a Within to things*” (56). The process of evolution, in its most universal sense, is thus one of increasing articulation of mind and consciousness; “We regard evolution as primarily psychical transformation.” (167)

The natural result is a panpsychic worldview: “From the cell to the thinking animal, as from the atom to the cell, a single process (a psychical kindling or concentration) goes on without interruption and always in the same direction.” (169) Or, as he reiterated in the postscript,

. . . we are logically forced to assume the existence in rudimentary form . . . of some sort of psyche in every corpuscle, even in those (the mega-molecules and below) whose complexity is of such a low or modest order as to render it (the psyche) imperceptible. . . . The universe is, both on the whole and at each of its points, in a continual tension of organic doubling-back upon itself, and thus of interiorization. (301–302)

So we see that for Teilhard the *becoming of mind* is a monumental, universal process of unending progress from dim and unarticulated mind to ever-greater depth of intensity and interiorization. This was Teilhard’s leitmotif (he called it “noogenesis”), and it pervaded his works. For example, in a 1941 essay titled “The Atomism of Spirit” he emphasized the continuity of psychic evolution in all things, from atoms to *Homo sapiens*: “we do not immediately recognize in man the natural extension of the atom. Nevertheless . . . it becomes clear that in each one of us the same movement [of interiorization] is being continued.” (1970: 34) In a 1947 article titled “The Place of Technology,” Teilhard noted that “interiority, the rudiment of consciousness, exists everywhere; . . . ‘the within’ is a universal property of things” (1970: 156). Three years later he wrote that “Matter and Spirit [are] two states or two aspects of one and the same cosmic Stuff,” and that Spirit is on the ascension while Matter is on the decline (1950/1979: 26–27).

In one of his last pieces, “The Reflection of Energy” (1952), Teilhard discussed the universal complexification of energy with respect to the tendency of thermodynamic decay (entropy). Evolution is driven by “some *powerful magnetic force, psychic in nature*” (1970: 334), and by this fact it overcomes entropic degradation.

Teilhard thus combined a kind of Non-Emergence argument with a First Principles ontology. Emergence of species and other forms of being was clearly possible for him, just as new and more complex forms of mind could emerge. But mind as an ontological category was present from the beginning of time. The evolutionary imperative of noogenesis was his central cosmological principle, and thus a core metaphysical assumption.

Teilhard’s philosophical legacy has been mixed. For some he has been immensely influential, but in an era dominated by materialistic, analytic, and secular philosophy he has typically been seen as too theological—or, worse, too mystical. Theologians have tended to look skeptically at his fundamental endorsement of evolution and his radical conception of God. In this sense he was very much like his panpsychist contemporary Charles Hartshorne (see chapter 9)—both men were radical theologian-philosophers who articulated visions too unconventional for either academia or religion.

8 Scientific Perspectives

Mind in humans is an unexplained, and perhaps unexplainable, mystery to science. Mind that may exist elsewhere in nature is scientifically unintelligible and methodologically superfluous. Modern analytic philosophy supports both this view of mind and the mechanistic worldview generally, and hence sees no credibility in panpsychic theories.

Virtually all contemporary naturalistic theories of mind are forms of emergentism, arguing that mind is a rare and unique phenomenon that arises only in highly specialized circumstances. The standard versions of emergentism—the identity theory, functionalism, behaviorism—attribute mind to only those structures that have achieved sufficient biological or functional complexity.¹ However, they are generally at a loss to explain either the criterion for this emergence or how the qualities of mind or consciousness are linked to biological/functional complexity. Emergentism, in all forms, is thus profoundly incomplete at present. This fact alone suggests that panpsychist theories deserve greater attention.

8.1 Historical Arguments from the Scientific and Empirical Perspectives

The failings of emergentism constitute what might be called a negative argument on behalf of panpsychism. Yet there are many positive arguments, including ones from within the realm of science. Numerous scientist-philosophers have found grounds for panpsychism in the fields of physics, chemistry, and biology. Historically such individuals have included Gilbert, Kepler, Leibniz, Newton (perhaps), LaMettrie, Herder, Fechner, Haeckel, Mach, and Teilhard, all discussed in previous chapters. Their arguments were based not only on rationalism but on empirical evidence and evolutionary principles as well. It is helpful to retrace some of these older scientific arguments briefly in order to set the context for the more recent developments.

Scientific arguments are traditionally based on a combination of empirical evidence and so-called scientific reasoning. Given a conjecture or proposed theory, evidence is sought that can confirm it. This raises two questions long known to philosophers of science: What counts as evidence? What qualifies as scientific reasoning? It is clear that any piece of observed data about the world can be interpreted in many ways and may count for or against widely divergent theories. Scientific reasoning is roughly the logical process that leads to “scientific truths.” Applying similar reasoning to issues of philosophy of mind has led some thinkers to panpsychist conclusions.

Consider the evidence of Thales, namely that a magnet has a psyche because it can move metallic objects. Thales held to a theory of mind in which psyche was the source and cause of motion. Given this, it is clear that the magnet must possess a psyche. It was then a process of reasoning that led Thales to consider whether psyche was something shared only by humans, animals, and certain rocks (those from Magnesia), or whether it was a universal property that was more manifest in certain objects and less manifest in others.² We don’t fully know his rationale, but he ultimately concluded that “all things are full of gods,” and thus that panpsychism was true.

Anaximenes noted the commonly observed fact that living, ensouled beings must breathe, and that loss of breath was a fairly certain indication of loss of psyche. Furthermore, breath, in the form of air (pneuma), seemed to surround and permeate all things. Thus, a reasonable conclusion was that psyche was present everywhere, in all things.

Plato saw psyche as the principal source of motion and, like Thales, held that where there was evident power of motion one must infer presence of a soul. He observed the regular motions of the heavens and concluded that only a world-soul could regulate such motions with orderly precision. As to the psyche itself, Plato argued that it cannot be directly observed; it is “perceptible by reason alone,” and hence not empirically verifiable. In such cases one must rely on basic metaphysical principles.

Aristotle was confronted with the puzzling phenomenon of spontaneous generation of life out of heaps of decaying matter. To make sense of this, he was compelled to postulate the soul-like pneuma as pervasive in the physical world. Pneuma, as the earthly life-principle, was the analogue of the heavenly ether, which animated the stars and other celestial bodies.

Centuries later, Gilbert’s study of magnets in the late 1500s considered two different empirical results. First was his observation that a magnet can magnetize a previously nonmagnetic piece of metal. For Gilbert, this power to confer power was evidence of a magnet’s psyche-like ability. Second, Gilbert documented the consistency and orderliness of the magnetic force, i.e. its

repulsion of like poles, attraction of opposite poles, inverse-square action with respect to distance, and so on. He saw this as evidence of “reason” in the magnet, a disputable but putatively scientific conclusion—again, presuming that the psyche acts in an intelligent and orderly manner (much as Plato had concluded). The jump to panpsychism required additional presumptions, such as “whatever is in the effect is in the cause.” Gilbert showed that the Earth was a large magnet, and then rightly determined that this power was thereby bestowed on the individual magnetic rocks. Since the Earth granted its magnetic psyche to the magnet, and (evidently) the animal psyche to humans and animals, it would be reasonable to generalize that all Earthly things were endowed with a kind of animation.

Like Plato and Gilbert, Kepler saw soul as the motive force behind the planets—at least until 1621, when he decided that the rational orderliness of planetary motion was indicative of a corporeal, non-psychoic force. Newton viewed gravity as an occult quality, something perhaps lifelike in nature. As has been noted, his theory of universal attraction had implicit panpsychist overtones. He understood that gravity could be quantified, but this did not explain its basis and its origin.

In the mid to late 1600s, scientific technologies began to emerge, and some of these supported panpsychist theories. Leeuwenhoek’s work on the microscope revealed tiny “animalcules” in ordinary water, and that startling discovery impressed a number of thinkers, including Spinoza, Leibniz, and LaMettrie. There was suddenly empirical proof of life and sentience in the smallest portions of nature. Later discoveries of the cellular nature of plants and animals, and of the ubiquitous presence of microorganisms, only furthered this belief.

Fechner’s work in the mid 1800s relied less on empirical data than on a scientific form of argumentation by analogy. He observed the functional similarities between animals and plants, concluding that plants were animate. He then considered larger-scale systems like the Earth, arguing that their internal dynamics and sentient components supported such notions as the Earth-soul. Empirical evidence of the Earth’s ability to self-regulate did not appear until some 100 years later, with the work of Wright and Lovelock.

Advances in physics in the eighteenth and nineteenth centuries moved toward unification of physical forces. More important, with the dynamist and energeticist theories, even matter itself was seen as an ethereal quasi-spiritual entity. This spiritualization of matter (in a scientific context) was important to the panpsychist theories of Priestley, Schelling, Herder, Lossky, and the early Schiller.

Finally, Darwin's theory of evolution (1859) initiated a series of new scientific arguments for panpsychism. Even before *The Origin of the Species*, the early anticipations of Maupertuis, LaMettrie, and Diderot suggested that an evolutionary perspective would entail some form of panpsychism. After Darwin, it became evident that all life shared a common ancestry, and that conscious humans had no claim to ontological uniqueness. This was further supported by chemical analyses that showed human bodies to be composed of the same elements that existed in other life forms, in the Earth, and even throughout space. These scientific facts supported the Continuity arguments of Haeckel, Spencer, James, and Teilhard, among others. Evolution was not empirical per se, but empirical evidence supported it and indirectly served as a form of confirmation for certain panpsychist theories.

8.2 Panpsychism in Early- and Mid-Twentieth-Century Science

In the twentieth century, further developments in physics, biology and mathematics were presented as scientific evidence in support of panpsychist claims. The concept of mass/energy furthered the notion that the underlying nature of matter was something vaguely spirit-like. Quantum mechanics emerged as an accepted theory of atomic and subatomic particles; its bizarre, indeterminate implications led a number of scientists to panpsychist conclusions, beginning with J. B. S. Haldane in 1932 and continuing with Jeans, Sherrington, Wright, Rensch, Walker, Cochran, Dyson, Bohm, Zohar, Hameroff, and Seager (all discussed below). More recently, concepts in mathematical analysis, especially cybernetics, state-space analysis, and chaos theory, have been employed on behalf of panpsychism.³

To many scientists of the early twentieth century, panpsychism was uncomfortably close to the recently discredited theory of vitalism. As a result, they largely avoided discussing it. The first notable scientist to tentatively put forth panpsychist views was the British astronomer Sir Arthur Eddington. In *Space, Time and Gravitation* (1920) he concluded with the observation that physics only addresses the surface structure of matter and energy, and does not have anything to say about the inner content of reality. Arguing roughly in the manner of Schopenhauer, Eddington claimed that the inner content of reality must be like the inner content of the human, i.e. conscious:

[Physics] is knowledge of structural form, and not knowledge of content. All through the physical world runs that unknown content, which must surely be the stuff of our consciousness. (200)

This vague passage can be read either as a form of pure idealism or (in the manner of Schopenhauer) as a panpsychic idealism.

Eddington's 1928 book *The Nature of the Physical World* contained a section titled Mind-Stuff. Explicitly acknowledging the views of Clifford, he bluntly stated that "the stuff of the world is mind-stuff" (276). This fundamental substance is "something more general than our individual conscious minds, but we may think of its nature as not altogether foreign to the feelings in our consciousness" (ibid.).

Eddington again addressed this theme in 1939, leaning more toward conventional idealism and arguing that physics "abolishes all dualism of consciousness and matter" (1939: 150). Dualism, he claimed, contains a logical inconsistency: "Dualism depends on the belief that we find in the external world something of a nature incommensurable with what we find in consciousness." (ibid.) Since physics shows that all reality is structurally the same, it must all be commensurate with consciousness, i.e. of the nature of a mental sensation:

Although the statement that the universe is of the nature of 'a thought or sensation in a universal Mind' is open to criticism, it does at least avoid this logical confusion. It is, I think, true in the sense that it is a logical consequence of . . . our knowledge as a description of the universe. (151)

Eddington's reference to a universal Mind is somewhat Berkeleyan—matter as consciousness only with respect to an observing mind, not as a mind in itself. Eddington's argumentation comes across as a bit confused, but his intention seems clear: that the unified view of physics supports a belief that the content of reality is comparable and even equivalent to the content of mind.

The biologist Haldane speculated on mind in nature in the early 1930s. He addressed the emergence of life and mind from inanimate matter: "It is clear that aggregates of a certain kind do manifest qualities which we cannot observe in their components." (1932: 113) This is an important and subtle observation; Haldane did not say that emergent qualities do not exist in their components, but rather that we cannot see them there. He suggested that mind (and "life") may be found to exist in an unobservable form in all matter.

In fact, if consciousness were not present in matter, this would imply a theory of strong emergence that is fundamentally anti-scientific. Such emergence is "radically opposed to the spirit of science, which has always attempted to explain the complex in terms of the simple" (ibid.). Haldane

rejected this thesis, and hence was driven to the conclusion that life and mind exist to some degree everywhere:

We do not find obvious evidence of life or mind in so-called inert matter, and we naturally study them most easily where they are most completely manifested; but if the scientific point of view is correct, we shall ultimately find them, at least in rudimentary form, all through the universe. (ibid.)

Two years later Haldane offered thoughts on the philosophical implications of quantum mechanics. In "Quantum Mechanics as a Basis for Philosophy" (1934) he proposed that mind is a "resonance phenomenon" that is associated with the wave-like (as opposed to particle-like) aspect of atomic particles. This is a reasonable assertion, he claimed, because the characteristics of mind are comparable to those of atomic particles: both arise from dynamical systems, both exhibit a continuity and wholeness, both are at once localized yet spatially diffused. For example, the wave nature of an electron allows it to penetrate through an insulating barrier (the "tunneling effect"), and Haldane interpreted this as a primitive variety of "purposive behavior." He offered the suggestion that "man also has a 'wave system' which enables him to act with reference to distant or future events, this system being his mind" (89). Anywhere this resonance phenomenon occurs, there we must accept the presence of mind. Haldane speculated that this may happen even inside stars:

It is not inconceivable that in such [stellar] systems resonance phenomena of the complexity of life and mind might occur. . . . It is conceivable that the interior of stars may shelter minds vastly superior to our own, though presumably incapable of communication with us. (97)

Haldane had previously cited Plato, and one cannot help but suspect that he had Plato's "star-souls" in mind.⁴

The physicist and astronomer Sir James Jeans was likewise drawn to philosophical speculations on mind. Like Eddington, he saw evidence for mind throughout nature, and concluded that a form of idealism must be true: ". . . the universe can be best pictured . . . as consisting of pure thought" (1932: 168). Jeans was clear that this conception undermines the mechanistic worldview: ". . . the universe begins to look more like a great thought than like a great machine. Mind no longer appears as an accidental intruder into the realm of matter." (186) In a later work Jeans arrived at a strongly Berkeleyan idealism (or "mentalism"). He argued that the new physics provides three substantial reasons for seeing reality as "wholly mental": (1) Electro-magnetic fields fail to qualify as objective, and hence are effectively "not real at all; they are mere mental constructs of our own" (1942:

200). (2) The reality of the theories of physics is essentially mathematical, and therefore essentially mental. (3) As Haldane suggested, the wave-particle duality implies a view in which “the ingredients of the particle-picture are material, those of the wave-picture mental. . . . The final picture consists wholly of waves, and its ingredients are wholly mental constructs.” (ibid.: 202) Jeans’ philosophical naiveté thus pushed him toward a strong idealism, when in fact panpsychist explanations were equally viable and perhaps more reasonable.

In the early 1940s three notable British biologists ventured theories that had panpsychist dispositions. Sir Charles Scott Sherrington was noted for his research on the physiology of the brain, but in *Man on His Nature* (1941) he delved into mind-brain philosophy. Sherrington argued (much like Bruno) for a dual-aspect theory of reality, consisting of mind and energy: “. . . our world resolves itself into energy and mind. These two concepts . . . divide, and between them comprise, our world.” (348) He was agnostic about interaction between these two realms, stating that we are left with “acceptance of energy and mind as a working biological unity although we cannot describe the how of that unity. . . . The evolution of one is of necessity the evolution of the other. There is no causal relation between them; they are both inseparably one. Their correlation is unity.” (351–352) One consequence of this view is that the animate blends seamlessly into the inanimate: “We have difficulty in assigning the lower limit of the mental. It may therefore be that its distribution extends to all organisms, and even further.” (354) In other words, “it is as though the elementary mental had never been wanting” (266)—that is, present in all matter throughout the history of evolution.

The second notable voice was W. E. Agar. Agar, a follower of Whitehead’s process philosophy, was attracted to Whitehead’s concept of the “philosophy of the organism.” He sought a biological theory of the living organism that corresponded to Whitehead’s philosophy. Agar’s central thesis was that organisms are both percipient subjects and composed of elements (cells) that are themselves percipient; living cells “must also be regarded as feeling, perceiving, subjects” (1943: 8). The logic continues down the chain of being: “A cell, though a subject, must probably also be considered a nexus of living sub-agents.” (11)

Agar was clear that “Whitehead’s system essentially involves a form of panpsychism” (66), and his analysis demonstrated a deeper philosophical awareness than the other scientists discussed. Agar accepted most aspects of Whitehead’s process philosophy but disagreed on the nature of consciousness. Whitehead saw consciousness as a special and limited case of

the more general phenomenon of feeling or experiencing; Agar believed that

the more satisfying hypothesis is that . . . all experience is in its degree conscious. . . . We must ascribe consciousness to every living agent, such as a plant cell or bacterium, and even (if the continuity of nature is not to be broken) to an electron. (91)

Agar's panpsychism is thus more literal and more far-reaching than that of Whitehead, adopting a universalized conception of consciousness.

Third was Sir Julian Huxley. Arguing like the others that physics and evolution have demonstrated the underlying unity of reality, Huxley took a strongly monist perspective. Given that both mind and matter exist, monism requires that these be deeply linked. He adopted a Spinozist ontology: ". . . there exists one world stuff, which reveals material or mental properties according to the point of view" (1942: 140). The material was reality "from the outside"; the mental was "from within." If we accept the continuity of mind and matter that science imposes, "then mind or something of the nature as mind must exist throughout the entire universe. This is, I believe, the truth. We may never be able to prove it, but it is the most economical hypothesis: it fits the facts much more simply . . . than one-sided idealism or one-sided materialism." (141) This is among the clearer and more unambiguous statements of the early-twentieth-century scientists.

In fact the arguments of Huxley and the others above so closely link panpsychism with the scientific worldview that one is inclined to see panpsychism not as a *usurper* of mechanism but rather as a *logical extension* of it. All but the most dogmatic critic must allow for at least the *possibility* that matter itself possesses a mind-like dimension. On the one hand, such a quality of matter may ultimately be deemed 'objective' in some empirical sense, and thus confirmable through the methodologies of science—though perhaps in dramatically revised form. If this is the case, then science will eventually reach a conclusion that undermines its original presumptions.

On the other hand it may be that something of a Kuhnian paradigm shift will be required before acceptance of panpsychism occurs; this in fact seems the more likely alternative. In such a case the very same physical phenomena will be viewed in a new light, as possessing (perhaps) both mechanical and noetic aspects. The mind-like aspects of matter, though, would seem to have no conventional scientific consequences—and hence this paradigm shift would appear to be unlike those which have occurred in the past few centuries of Western thought. One would have to go back to the origins of

the mechanistic worldview itself in the sixteenth and seventeenth centuries to find a comparable shift in thinking.



In “Gene and Organism” (1953), the zoologist Sewall Wright (then president of the American Society of Naturalists) took up Agar’s (and Whitehead’s) argument that the concept of “organism” should apply to all structures of matter. He defined an organism as any structure in which interrelated parts communicate and cohere in a persistent and self-regulatory manner. He noted that the concept applies not only to plants and animals, but to human society, and even—anticipating Gaia theory—to the Earth’s biosystem as a whole:

. . . the entire array of plants and animals and peripherally the soil and waters of a given region [constitute] an interdependent self-regulatory system, with considerable persistence . . . Since regions [of the Earth] are connected, the entire biota and peripherally the surface of the earth form one great organism. (7)

This is one of the few acknowledgements since the work of Fechner that the Earth may be considered as a single organic entity. Furthermore, not only the Earth, but the solar system individually and the universe as a whole qualify as organisms. At the other end of the scale, atoms and molecules are to be considered organisms; subatomic particles are questionable (not having parts), but Wright felt that their “vibratory character” and persistence put them in the same general category.

As to the question of mind, Wright again invoked an argument by non-emergence, showing that mind must exist in single-celled organisms, and even in their constituent parts: “If we are not at some point to postulate the abrupt origin of mind, mind must be traced to the genes, which presumably means to nucleo-protein molecules.” (13) This has implications for humans, because it entails that “our own apparently unified stream of consciousness is somehow a fusion of the minds of the cells” of our bodies. Wright ultimately concurred with Eddington and Jeans that “the essential nature of all reality is that of mind” (16), though he did acknowledge that his was more of a pluralistic idealism: “reality consists primarily of a multiplicity of minds”—a critical issue from the panpsychist perspective.

Wright elaborated on his panpsychist views over the subsequent 20 years. Writing in *The Monist* in 1964, he explicitly argued for “dual-aspect or monistic panpsychism.” He presented a hierarchy of mind in which each level in the chain of being is enminded, and participates in higher-order

mind: "The very fact of interaction, at any level, implies . . . that minds are not entirely private. . . . They [also] exist as components of a more comprehensive mind. . . ." (1964: 284) Then in 1977 he contributed an article to Cobb and Griffin's compilation *Mind in Nature*. His article, titled "Panpsychism and Science," reiterated the same themes and placed even more emphasis on the problem of emergence: "Emergence of mind from no mind at all is sheer magic." (1977: 82) Wright asserted that dual-aspect panpsychism was the only logically consistent position.

In the 1960s and the 1970s, several other scientists began speaking out on behalf of panpsychism. In *The Nature of Life* (1961), C. H. Waddington discussed approvingly the ideas of Haldane mentioned above. Once again citing evolutionary continuity, Waddington asked:

Are we not forced to conclude that even in the simplest inanimate things there is something which belongs to the same realm of being as self-awareness? . . . Something must go on in the simplest inanimate things which can be described in the same language as would be used to describe our self-awareness. (121)

The biologist Bernhard Rensch published half a dozen pieces arguing for a panpsychic theory of mind. In *Evolution above the Species Level* (1960) he reiterated the evolutionist line that "because of [a] lack of any serious evolutionary gap" one cannot limit mental abilities to the higher organisms. The evolutionary ancestry of living organisms represents a "gapless series of phylogenetic transformations" (334) in which at no point can we logically envision the sudden appearance of psychic abilities; "it is not very probable that in the continuous process of transformation entirely new laws of psychic parallelism [i.e. a mental aspect of things] should have suddenly emerged" (ibid.). Rensch saw "sensation" as the core mental quality, and this he attributed not only to all animals but also to plants (owing to the blurring of categories at the micro-organismal level).

Even the gap between living and non-living systems is illusory:

Here again it is difficult to assume a sudden origin of first psychic elements somewhere in this gradual ascent from nonliving to living systems. It would not be impossible to ascribe 'psychic' components to the realm of inorganic systems. . . . (352)

This "hylopsychic" view, Rensch claimed, was supported by cognition theory and atomic physics. He concluded that "a hylopsychic concept is well in accord with many findings and facts of the natural sciences, and . . . is possibly the most suitable basis for a universal philosophy" (355).

In 1971 Rensch began referring to his system as *panpsychistic identism*. He generalized the conventional identity theory of mind, and attributed "protopsychical" qualities to all levels of material organization, asserting

that “all ‘matter’ is protopsychical in character” (298). Here Rensch began to treat the subject more systematically. He offered ten “facts” in support of his thesis: (1) The only reality of which we are aware is that of “experienced phenomena.” (2) Dualism is obviously false, and mind and body are an indivisible unity—a fact supported by numerous thinkers throughout history. (3) Phylogenetic development is gapless, and there is no point at which any psychical element could suddenly emerge. (4) The same process occurs in individual development, i.e. from single-celled egg to fetus to person. (5) Sudden emergence of an interactive psychic quality would violate the conservation of energy, or at least introduce an inconsistency in it. (6) Life is rare throughout the universe, and to conjecture the sudden appearance of mind is “more hypothetical” than to presume it present from the beginning. (7) Matter is really just “complexes of energy,” and hence amenable to mind-like qualities. (8) Human consciousness arises from chemo-physical brain processes, and thus it is reasonable to believe that the “molecules, atoms, and elementary particles involved are protopsychical in character.” (9) Fetal cell tissue is capable of developing into any organ, including the brain, and hence all cells have the ability to yield mind. (10) “It is impossible to point to any fact which would prove that matter is *not* protopsychical in character.” (ibid.: 299–301) Such facts, individually, are perhaps unconvincing, but for Rensch the overall picture clearly pointed to a form of panpsychism.

Rensch’s 1972 article “Spinoza’s Identity Theory and Modern Biophilosophy” compared his views to those of Spinoza, in whom he found the philosophical basis for panpsychistic identism. Then in 1977 Rensch presented five arguments for his system; four of these were reiterations from 1971, and to these he added the fact that since DNA molecules can transmit inherited psychic characteristics from generation to generation, the molecules themselves must naturally have a protopsychic nature.

Rensch’s work is notable because he sought detailed empirical, scientific evidence of a panpsychist universe. This, however, is arguably an impossible task, in view of the intrinsic nature of mental experience. Perhaps the only such route to panpsychism can be through a detailed understanding of the physiology of human consciousness. If, for example, a basis for our mental experience can be found in certain objective yet universal criteria (such as the quantum collapse theory of Hameroff and Penrose; see below) then this could conceivably serve as an objective basis for panpsychism. Apart from such approaches, one is left largely with analogical and metaphysical arguments.

8.3 Bateson

The next event of significance was the work of Gregory Bateson. Bateson researched and wrote on a wide range of subjects, including biology, anthropology, psychology, cybernetic theory, and natural philosophy. A contrarian to the trend of increasing specialization, he was uniquely qualified to comment on the interconnection between nature and mind. His vision of ecological philosophy and the relationship between organic wholes was a predecessor to the more fully developed eco-philosophies of Skolimowski, Naess, and other environmental philosophers. And his awareness of the importance of concepts like energy, feedback, and information led to new arguments for panpsychism, anticipating later developments in chaos theory and nonlinear dynamics.⁵

Bateson's inquiry into mind and nature brought him to a qualified version of panpsychism, though he seems to have ultimately abandoned it—for reasons that are not entirely clear. His first inquiries in this area occurred in 1968, in the article "Conscious Purpose vs. Nature." Here, not unlike the other scientist-philosophers of the century, he expressed his belief that "the study of evolution might provide an explanation of *mind*" (35). His first point of note was that mind is essentially a natural phenomenon, bound up with the complexity of matter. He cited approvingly Lamarck's view that "mental process must always have a physical representation" (36); and furthermore, "wherever in the Universe we encounter [a certain degree] of complexity, we are dealing with mental phenomena" (*ibid.*). In an attempt to elaborate this issue, Bateson observed that complex dynamic systems involve a process of feedback through which they are self-corrective. Examples of natural self-corrective systems include the individual organism, a society of organisms, and the self-sustaining ecosystem. All these levels of organization embody comparable system dynamics, and—by implication—should exhibit qualities of mind. To use his example, a forest ecosystem such as an "oak wood" is fundamentally like an individual organism, reflecting mind from within its bodily, material structure. Bateson referred to this kind of embodiment as "total mind": "This entity [i.e. the individual organism] is similar to the oak wood and its controls are represented in the *total* mind, which is perhaps only a reflection of the total body." (40) But he dropped the matter here, only later following up on the implications.

Bateson's 1972 compilation *Steps to an Ecology of Mind* includes the above article as well as a number of other important pieces. Preeminent among these is "Form, Substance, and Difference," originally published in 1970. It was in this article that Bateson first presented his famous but vague defini-

tion of *information* as “difference which makes a difference” (1970: 7). He attempted to relate the phenomenon of mind to feedback systems of energy circulation, and he decided that it was “pure difference” that mattered most.

Bateson was adamant that it was the *circular feedback system itself* that was important—that it was in such a system that we observed what could rightly be called “mind.” He was quite explicit:

The elementary cybernetic system with its messages in circuit is, in fact, the simplest unit of mind; . . . More complicated systems are perhaps more worthy to be called mental systems, but essentially this is what we are talking about. (1972: 459)

We get a picture, then, of mind as synonymous with cybernetic system. . . . (460)

Cybernetic feedback systems are ubiquitous in nature. They exist at all levels of organization, from molecular to galactic—anywhere parts interact and persistent structures appear. Therefore, cybernetic mind must be present throughout the universe. This in fact was Bateson’s conclusion: “. . . we know that within Mind in the widest sense there will be a hierarchy of subsystems, any one of which we can call an individual mind” (*ibid.*).

Bateson’s elaboration makes clear that his conception of mind extends not only to small cybernetic systems but also to large-scale ones:

It means . . . that I now localize something which I am calling “Mind” immanent in the large biological system—the ecosystem. Or, if I draw the system boundaries at a different level, then mind is immanent in the total evolution structure. (*ibid.*)

The individual mind is immanent but not only in the body. It is immanent also in pathways and messages outside the body; and there is a larger Mind of which the individual mind is only a subsystem. This larger Mind . . . is still immanent in the total interconnected social system and planetary ecology. (461)

It is not just a universal Mind, but mind at all levels of existence—true pluralistic panpsychism.⁶

Still, Bateson qualified his view. The only exceptions for him are the fundamental atomic particles (“atomies”). These particles, being without parts, lack the dynamic feedback interrelationships that Bateson saw as necessary for the process of mind. One of his notes is interesting:

I do not agree with Samuel Butler, Whitehead, or Teilhard de Chardin that it follows from this mental character of the macroscopic world that the single atomies must have mental character or potentiality. I see the mental as a function only of complex *relationship*. (465)⁷

This relatively minor issue did not substantially affect Bateson’s generally panpsychist outlook.⁸

In 1979 Bateson came out with his most philosophical book, *Mind and Nature: A Necessary Unity*. In this work he seems to back away from the panpsychist implications of his earlier writings—though maintaining the same theory of mind, with presumably the same consequences. Mind still exists in the interrelationship and interaction between dynamic parts. But now this is only a necessary, not sufficient condition for mind. He lays out six somewhat-cryptic criteria⁹ for complex systems to possess mind, and notes that *any* system meeting these criteria must be designated as such. The criteria are very general, and would seem to apply to any dynamic system whatsoever. Yet he excludes not only (as before) subatomic particles, but other physical systems as well:

There are, of course, many systems which are made of many parts, ranging from galaxies to sand dunes to toy locomotives. Far be it from me to suggest that all of these are minds or contain minds or engage in mental process. The . . . galaxy may become part of the mental system which includes the astronomer and his telescope. But the objects do not become thinking subsystems in those larger minds. The [six] criteria are useful only in combination. (1979: 104)

This puzzling statement is potentially inconsistent with Bateson's own standards. If the criteria are valid, they should be valid universally. They appear to occur in combination everywhere. Bateson backed away from the logical implications of his own theory, implications that he had accepted a few years earlier. Whether he was able to construct a cohesive and consistent theory of mind remains an open question.

8.4 Recent Scientific Interpretations

In a break from the evolutionary-continuity approach, the physicist A. Cochran (1971) extended Haldane's suggestion, and argued that the laws of quantum mechanics in themselves support a panpsychist philosophy.¹⁰ In an ingenious approach, Cochran observed that the elements of organic compounds (carbon, hydrogen, nitrogen, and oxygen) have among the lowest atomic heat capacities, which corresponds to a high degree of "wave predominance" (as opposed to "particle predominance"), and hence are the most endowed with the qualities of consciousness. He suggested that "the quantum mechanical wave properties of matter are actually the conscious properties of matter," and therefore "atoms and fundamental particles have a rudimentary degree of consciousness, volition, or self-activity" (236).

Beginning in the early 1970s, the biologist Charles Birch wrote a series of essays (1971, 1972, 1974, 1994) and a book (1995) presenting a new inter-

pretation of process philosophy, arguing for a panexperientialist form of panpsychism. For example, in his 1974 essay he claimed that panpsychism represents a form of evolutionary teleology in which the primordial psychic phenomena of atoms and molecules in the early universe foreshadowed the later appearance of mind and consciousness. And his 1994 essay presented six reasons for adopting the panexperientialist viewpoint; in a word, they are (1) biology points away from crass mechanism, (2) the process view of true individuals as possessing experience makes intuitive sense, (3) panexperientialism avoids the emergence category mistake, (4) the “doctrine of internal relations” suggests that true individuals possess unique experiential phenomena, (5) computers and other mechanisms are not organisms, and thus are inherently limited in their ability to model consciousness, and (6) the reality of subjectivity suggests that it has a fundamental place in the universe. Birch’s work influenced the later (and better-known) process panexperientialism of Griffin, and to a lesser extent De Quincey.

In *Disturbing the Universe* (1979), the physicist Freeman Dyson presented his views on a range of subjects, from physics and cosmology to politics and economics. In the penultimate chapter he examined the mechanistic philosophy and the concept of the universe as a clockwork device. He noted that as one descends the ladder of complexity things at first appear more “mechanical,” but then at the level of molecular physics this process *reverses*: “If we divide a DNA molecule into its component atoms, the atoms behave less mechanically than the molecule. If we divide an atom into nucleus and electrons, the electrons are less mechanical than the atom” (248). At the quantum level the observer is intimately bound up with physical events, and thus “the laws [of physics] leave a place for mind in the description of every molecule” (249). The logical continuity of nature then presses us to accept that mind is present and active at all levels of existence:

In other words, mind is already inherent in every electron, and the processes of human consciousness differ only in degree but not in kind from the processes of choice between quantum states which we call “chance” when they are made by electrons. (ibid.)

Dyson readily admitted that such a view is antithetical to conventional science. He cited Monod as typical of the conventional view, noting that Monod holds out “the deepest scorn” for such an “animist” conception of the world (see Monod, *Chance and Necessity*). But Dyson was unfazed. For him the “importance of mind in the scheme of things” is undeniable, whether one considers the role of mind in the electron or in a conception of the world-soul.

Chronologically speaking, Bohm's writings of the 1980s were the next significant events. This discussion is deferred to the following section dedicated to his work.

Two books of note appeared in 1990. The first was *The Quantum Self* by Danah Zohar. Zohar's overall approach was to use concepts from quantum mechanics to illuminate issues of selfhood, society, consciousness, and religion. In a chapter titled "Are Electrons Conscious?" she put forth a "cautious or limited" form of panpsychism based (apparently) on a dual-aspect neutral monism. Recalling ideas from earlier in the century, she emphasized that the wave-like nature of quantum particles may be interpreted as mind, and hence "the wave/particle duality of quantum 'stuff' becomes the most primary mind/body relationship in the world" (80). Yet this fact evidently has no bearing on macro-scale inanimate objects, "as there is nothing whatever about modern physics to suggest that mountains have souls or that dust particles possess an inner life" (39). This somewhat gratuitous comment seems intended to deflect the standard criticisms of strong panpsychism, and yet it leaves Zohar open to the question "Precisely which objects have dual-aspect minds, and why?" To this she offered no resolution. The second was *The Rebirth of Nature* by Rupert Sheldrake. Sheldrake, a biologist, challenged the mechanistic worldview at its core by attacking the view of matter as dead, insentient, and inert. He argued for a "new animism" which incorporates a strong version of the Gaia hypothesis: "If Gaia is in some sense animate, then she must have something like a soul." (130) This soul he conceives as the unified field of the planet, of which aspects include the magnetic and gravitational fields that science recognizes. More generally, it is the "morphic field" (135) of the Earth, an entity that organizes, integrates, and coordinates the activities of things in accordance with a preordained teleology.

Morphic fields are not limited to the Earth; "such fields animate organisms at all levels of complexity, from galaxies to giraffes, and from ants to atoms" (135). They also allow a kind of communication or resonance with other, similar forms of being—whether on the Earth or across the universe. Thus, Sheldrake saw the cosmos as embracing a teleological synchronicity that unifies and animates all things. This is the foundation for his new animism.

As a scientist he seems to have recognized that such a view has no direct bearing on scientific inquiry. The effects of this new worldview are to be found exclusively in our relations with the world. Sheldrake cited three effects:

First of all, it undermines the [anthropocentric] humanist assumptions on which modern civilization is based. Second, it gives us a new sense of our relationship to the natural world, and a new view of human nature. Third, it makes possible a resacralization of nature. (173)

Thus Sheldrake's unique form of panpsychism focused on the ethical and axiological benefits in a manner reminiscent of Fechner, though without Fechner's extensive analogical argumentation. Sheldrake did not develop much of a systematic philosophy; instead he relied on basic assumptions and interpretations about the nature of reality—another form of the First Principles argument.

The most recent articulation of a scientific approach to panpsychism, again from quantum theory, was introduced by Stuart Hameroff. Hameroff, working with mathematician Roger Penrose, developed a theory of human consciousness that was centered on the coordinated collapse of superposed quantum conditions in the brain. Their initial articulations of the theory (Hameroff 1994, Penrose 1994a, Hameroff and Penrose 1996) indicated that quantum collapse might be associated with a "moment of experience" in the Whiteheadian sense.¹¹

According to standard theory, atomic and sub-atomic particles appear to evolve into multiple simultaneous (superposed) states. When an act of measurement is performed, the condition of superposition collapses randomly into one of the states, which then appears as the actual state of the particle. At present there are conflicting views on whether reduction happens in reality, or whether it is some kind of artificial or illusory phenomenon. Hameroff and Penrose take it as fact, and further suggest that it happens not merely upon measurement by a subjective observer but *independently*—as an objective, self-reduction that they call *objective reduction* (OR).

They argue that certain microstructures of neurons—tubular skeletal structures called microtubules—serve as the sites for sustained quantum superposition. Microtubules also allow for a coordination between individual tubulin molecules that results in a large-scale "orchestrated OR" that may produce a large-scale sense of consciousness. Large numbers of tubulin molecules coordinating their effects, and collapsing repeatedly on the order of every 0.5–5 milliseconds, are said to account for the apparently continuous stream of consciousness that we normally feel.

On their theory, superposed states must be maintained until a quantum gravity threshold is reached; only at this point can OR, and thus conscious experience, take place. A system of fewer elements (fewer neurons, or fewer tubulin molecules) requires a longer, and therefore less likely, time in which

to reach the threshold. Complex living organisms are ideal for the OR process, since they possess large numbers of quantum-coherent structures.

Hameroff and Penrose's analysis is primarily focused on the brain and its neurons, but they point out that, at least, such a process could appear anywhere microtubules are present. Since they are universally present in all living cells, from animals to plants to one-celled life forms, all living beings would presumably experience some degree of consciousness. Fewer tubulin molecules, though, would imply a longer period of time between state collapses, and thus a longer time between moments of experience.¹²

Hameroff proceeded to further develop the philosophical implications of the OR theory, linking this process of quantum collapse to a realization of "proto-conscious" events occurring ubiquitously in the quantum realm (1998a,b) and suggesting that "perhaps panpsychists are in some way correct and components of mental processes are fundamental, like mass, spin or charge" (1998a: 121). This would seem to be the logical extension of the Hameroff/Penrose theory, although for his part Penrose seems reluctant to admit to it. (Penrose apparently holds that only *certain* collapse conditions, namely those occurring upon reaching a quantum gravity threshold, count as "conscious"; and yet it is hard to see what is ontologically unique, with respect to mind, about this particular mode of collapse.¹³) Hameroff (1998b) adds that his theory "suggests that consciousness may involve a self-organizing quantum state reduction process occurring at the Planck scale [i.e., 10^{-33} cm]," and that "in a panexperiential Platonic view consistent with modern physics, quantum spin networks encode proto-conscious 'fundamental' experience." With many developments continuing in quantum theory in general, such a view of mind is likely to undergo continual progression in the near future.

8.5 Bohm and the Implicate Order

Like Wheeler, David Bohm had a long-standing interest in developing the philosophical implications of quantum physics. He wrote numerous pieces on the philosophy of physics, and seems to have been especially interested in the process of mind. More than any other scientist-philosopher of the twentieth century, Bohm developed and openly endorsed a form of panpsychism that was grounded in fundamental physical laws (i.e. the laws of quantum mechanics).

Bohm's interest in panpsychism began as early as 1957, as shown in his book *Causality and Chance in Modern Physics*. Here he made just one passing reference to the concept, in the midst of a discussion of his idea of strong

emergence, i.e. that “new qualities and new laws” can appear because of the “universal process of becoming” (1957: 163) that dominates the universe. Bohm noted that processes of living matter do not fundamentally differ from those of nonliving matter: “. . . when one analyzes processes taking place in inanimate matter over long enough periods of time, one finds a similar behaviour [to living processes]. Only here the process is so much slower . . .” (ibid.) Such a standpoint recalls the arguments of Royce.

Bohm edged closer to panpsychism in *Wholeness and the Implicate Order* (1980). He stated that quantum theory presents a fundamental challenge to mechanism because it (A) exhibits radically discontinuous (quantized) behavior, (B) displays simultaneously wave-like and particle-like properties, and (C) demonstrates extreme non-locality—a phenomenon in which coupled particles form an instantaneous relationship over any distance whatsoever (leading to a form of communication that exceeds the speed of light). In fact he noted that the structure of the universe “is much more reminiscent of how the organs constituting living beings are related, than it is of how parts of a machine interact” (175).

Bohm went on to argue for a form of neutral monism wherein “both inanimate matter and life [are comprehended] on the basis of a single ground, common to both” (193). It was this common ground that he designated as the “implicate order.” Repeating his earlier observation, he commented that “even inanimate matter maintains itself in a continual process similar to the growth of plants” (194). In the same way that this common ground unites living and non-living, so too does it unite mind and “no-mind”: as Bohm put it, “the implicate order applies both to matter and to consciousness” (196). Both sets of dualities were seen by him as false and fundamentally mistaken. Consequently there is a sense in which all matter is both alive and conscious. In Bohm’s words, “in a wide range of . . . important respects, consciousness and matter in general are basically the same order (i.e. the implicate order as a whole)” (208).

Something approaching panpsychism is a natural consequence of such a view. Consider memory, for example. “The recurrence and stability of our own memory . . . is thus brought about as part of the very same process that sustains the recurrence and stability in the manifest order of matter in general.” (ibid.) The persistent structures of mass-energy that we see around us thus reflect an ongoing process of recollection by the implicate order.

Bohm explained his theory in less technical terms in a 1982 interview in the journal *ReVision*. He spoke of a deeper ground underlying both the explicate and the implicate order. When asked if this ground is self-aware, he replied “Yes . . . since it contains both matter and mind, it would have in

some sense to be aware.” (1982: 37) Repeating again his view that “thought and matter have a great similarity of order,” he went on to state that “in a way, nature is alive, as Whitehead would say, all the way to the depths. And intelligent. Thus it is both mental and material, as we are.” (39)

In March of 1985, Bohm gave an important speech titled “A New Theory of the Relationship of Mind And Matter” at a meeting of the American Society for Psychological Research.¹⁴ This speech combined a direct endorsement of panpsychism with Bohm’s first explicit use of the concept of participation as related to a new worldview. Beginning with the panpsychist aspect, there were several passages in which Bohm clearly asserted that mind is found in all systems that contain “information content,” i.e. all dynamically coherent particles or subsystems. This new emphasis on information recalled Bateson, though Bohm did not specifically cite him.

Recognizing that the term ‘information’ implies both a meaning and a consciousness able to perceive that meaning, Bohm noted first of all that, on his interpretation of quantum theory, all physical systems embody information. On his view, “the notion of information [is] something that need not belong only to human consciousness, but that may indeed be present, in some sense, even in inanimate systems of atoms and electrons” (1986: 124–125). Because of the “basic similarity between the quantum behavior of a system . . . and the behavior of mind” (130), Bohm argued that mind and matter are intimately connected at all levels of being:

. . . the mental and the material are two sides of one overall process. . . . There is one energy that is the basis of all reality. . . . There is never any real division between mental and material sides at any stage of the overall process. (129)

The conclusion of the paper was a pluralistic panpsychism that reached up and down the ontological hierarchy:

I would suggest that both [mind and body] are essentially the same. . . . That which we experience as mind . . . will in a natural way ultimately reach the level of the wavefunction and of the “dance” of the particles. There is no unbridgeable gap or barrier between any of these levels. . . . It is implied that, in some sense, a rudimentary consciousness is present even at the level of particle physics. It would also be reasonable to suppose an indefinitely greater kind of consciousness that is universal and that pervades the entire process [of the universe]. (131)

For Bohm, this panpsychism fit together with a description of the world as fundamentally participatory in nature: “. . . the basic notion is participation rather than interaction” (113). As he saw it, matter is participatory because of the quantum nature of atomic particles. These particles, even if assumed to be point-like entities (as Bohm did), are seen to exist proba-

bilistically: an electron in an atom has a high chance of existing in its so-called proper orbit, but it also has a non-zero chance of existing outside that orbit, across the room, or even across the universe. Each particle exists, in a very real sense, *everywhere in the universe at once*. Because of this, every particle is in contact with every other particle. All particles thus “dance” together, to a greater or lesser degree. We can clearly see this phenomenon in special cases like superconductivity (wherein “electrons are thus *participating* in a common action based on a common pool of information” (122)), or in non-local experiments. But even where it is not apparent, this interconnection is always present. Echoing a view as old as Anaxagoras, Bohm wrote, “the whole of the universe is in some way enfolded in everything and . . . each thing is enfolded in the whole” (114).

On this view of reality, the objectivist stance of an observer dispassionately making observations is fundamentally inadequate. Interaction becomes participation:

. . . such a complex process of participation evidently goes far beyond what is meant by a merely mechanical interaction. It is therefore not really correct to call what happens a measurement. . . . Rather, it is a *mutual transformation* of both systems. . . . (124)

Each system changes the other—an idea reaching back to Hartshorne, Schiller, and even Campanella. Bohm concluded, like Wheeler, that

the mechanical notion of an interactive universe is seen to be inadequate. It is in need of replacement by the notion of an objectively participative universe that includes our own participation as a special case. (126)

In 1990 Bohm reissued the article with substantial changes (though, confusingly, under the same title). In the new version he clarified his philosophical terminology without abandoning his central view. He stated, for example, that “quantum theory . . . implies that the particles of physics have certain primitive mind-like qualities . . . (though of course, they do not have consciousness)” (1990: 272). He was clearly refining his ideas, no longer being satisfied to attribute “rudimentary consciousness” to elementary particles.

So for Bohm, participation occurred both within the material realm (down to the quantum level), and also between the processes of mind that occur at all levels of being. Bohm described “the essential mode of relationship of all these [levels of mind] as participation” (284), a fact that bears on the human scale of existence as much as the atomic scale: “For the human being, all of this implies a thoroughgoing wholeness, in which mental and physical sides participate very closely in each other.” (ibid.) Bohm’s ontology deeply unified panpsychism with the concept of

participation, and thus may be best described as a form of participatory panpsychism.

Bohm's last significant philosophical work (co-written with B. J. Hiley) was *Undivided Universe* (1993). This was primarily a technical work in quantum physics, but it included a well-developed philosophical analysis that elaborates on earlier themes. The philosophical conclusions at the end of the book are taken largely verbatim from Bohm 1990 and so do not add anything substantially new. Regardless, the further articulation of the quantum side of participatory panpsychism was a substantial accomplishment.



At the present time, we thus have two general science-based approaches to panpsychism: the quantum-theory approach, as articulated in various forms by Bohm, Dyson, Zohar, and Hameroff; and the information-theory approach, as initiated by Bateson and further elaborated by Bohm, Wheeler, and Chalmers (1996). Of these the quantum approach is the more active and seems to hold more promise, though a possible joint theory (as suggested by Bohm) is also likely to receive further attention in the coming years.

9 Panpsychism in the Twentieth Century, Part II: 1950–Present

The previous chapter detailed some recent ideas and approaches to panpsychism from within the scientific tradition, broadly conceived. From a philosophical perspective, panpsychism of the mid and late twentieth century followed a number of different routes; these are the subject of the present chapter.

First there was the ongoing development of the Whiteheadian process view, which achieved clarity and articulation in the work of Hartshorne. His writing was complemented by that of several other process philosophers, most notably Griffin but also including Ford, Birch, De Quincey, and others. The process philosophers have been the most consistent and vocal advocates of panpsychism over the past 50 years, and they deserve credit for keeping the topic alive within philosophical discourse.

Second there was the part-whole hierarchy (or “holarchy”) view first envisioned by Cardano in the sixteenth century. Koestler took up this concept in the 1960s and laid out what appeared to be a clearly panpsychic system, though he denied that implication. Wilber’s recent work has further elaborated the idea, openly accepting a form of panpsychism that he refers to as “pan-depthism.”

Several other individuals developed theories that described some form of dual-aspectism. These ranged from the ambivalent panpsychism of Feigl and Nagel, to the psychological dual-aspect theory of Globus, to the popular essays of Berman and Abram, to Plumwood’s “intentional panpsychism,” to Chalmers’ further elaboration of the Bateson-Bohm information theory.

The newest approach was that from nonlinear dynamics and the sensitivity of complex systems. Peirce initiated the idea in 1892, but it lay dormant until the emergence of chaos theory in the 1980s. Several writers made connections between chaotic dynamics and mind, but always within the human context. It was not until the 1990s that Skrbina developed a panpsychist theory of mind that made use of those concepts.

9.1 Hartshorne

Apart from Whitehead, the prominent process philosopher of the twentieth century was Charles Hartshorne, who died recently at the age of 103. Hartshorne was a sort of counterculture figure in the world of philosophy. He was, to a degree, shunned by mainstream philosophers, both for his failure to embrace the analytic/linguistic tradition and for his open advocacy of panpsychism and theological philosophy. On the other hand, he was seen as too radical by conventional theologians, primarily because of his pantheistic process view of God. Though clearly in the vein of Whitehead's philosophy, Hartshorne's writing is in a sense its mirror image—he wrote clearly and elegantly, avoided abstruse technical phrases, and was very direct and personal.

Hartshorne was the first Western philosopher to extensively employ the term 'panpsychism', and thus he may be credited with bringing the word into something approaching mainstream philosophical discourse. He was open and explicit about his panpsychist beliefs; panpsychism, he claimed, offers the only viable third way between mechanism and vitalism. It also treads a middle ground between "extreme materialism" (eliminativism) and Cartesian dualism. And it allows for a new, more naturalistic vision of God—approaching a form of pantheism. Writing very much like James (with echoes of Empedocles and Campanella), Hartshorne argued that panpsychism offers a sympathetic view of the world, and in particular a sympathetic epistemology that holds great promise for society.

All these views were introduced in one of Hartshorne's first major works, *Beyond Humanism* (1937). The entire book is written in a panpsychist light, but there are two major chapters on the issue: "Mind and Matter" and "Mind and Body: Organic Sympathy." The former begins with a critique of science and the scientific method, which, Hartshorne says, treats objects in nature not as individuals but as "crowds," "swarms," and "aggregates." Mind and sentience are not to be found in aggregates, but only in true individuals, and thus science overlooks the possibility of panpsychism—interpreted as meaning that all true individuals possess minds. The latter chapter outlines a panpsychist epistemology in which the mind knows the body through "organic sympathy" with sentient cells.

The issue of *aggregates* versus true individuals is central to Hartshorne's interpretation of panpsychism. In fact some philosophers (such as Griffin) claim that this point is crucial to the entire process view, as it allows Whitehead's system to avoid potentially fatal criticisms of standard dual-aspect panpsychism. It furthermore directly addresses an issue that is

central to virtually all panpsychist theories—an issue that Seager (1995: 280–283) called the combination problem: How can a unified collective consciousness arise from the mental qualities of lower orders of matter, such as atoms or subatomic particles? Hence, this problem requires further examination, beginning with a brief historical review.



There is a significant historical context to this issue of aggregates that the process philosophers have generally neglected. The problem relates to the notion of substance, which began with Democritus' atomic theory. Since Democritus held that only atoms and the void were real, he was compelled to argue that all ordinary large-scale objects only appeared to be solid substances. A rock, a tree, and a human being were only fancy aggregations of imperceptibly small atoms; their unity was real only in the sense that they *appeared* as one. "The objects of sense are supposed to be real and it is customary to regard them as such, but in truth they are not." (fragment 9, Smith 1934: 40) The solidity of all objects is taken strictly "by convention" (*ibid.*). Aggregates thus have no true unity.

Bruno read Democritus and embraced his ideas. Yet Bruno also believed in the world-soul and in a universe animated throughout all its parts. He wrote that "all the forms of natural things are souls," and that all things "possess life, or at least the vital principle" (1584a/1998: 44). As cited earlier, he saw that so-called inanimate objects, like a table or items of clothing, are not animate as wholes, but that "as natural things and composites, they have within them matter and form," and thus "part of that spiritual substance." This spiritual substance or vital principle is a kind of latent soul that becomes fully animate when, for example, absorbed into the body of a plant or animal. Since the vital principle is present in the smallest portions of matter, Bruno concluded that all atoms, or monads, must be in some sense ensouled: "Here is the monad, the atom: and the whole Spirit extending hence upon every side." (in Singer 1950: 74) Since all things are made of monads, all things have, at least, this atomic soul in them. But the object as a whole, if it is "inanimate," possesses no unified higher-order soul.

Leibniz was also well acquainted with Democritus and cited him often. And he was likely familiar with Bruno's work, though he apparently never mentioned it. Recapping Leibniz's views: In his monadic system he created a pointillist, atomistic world; everything was reducible to monads.¹ Like Democritus, he held that solidity of ordinary matter was only an appearance, an "accidental unity," a "phenomenon," something like a rainbow.

Democritus believed that soul was connected to the round soul-atoms, Bruno that it was connected to all atoms. Leibniz followed Bruno in attributing mental qualities to all monads. But this left him with some daunting problems. First, he had to explain why such things as rocks and tables, though composed of sentient monads, were not in themselves somehow animate. Bruno simply made a flat assertion that this was so, but offered no real argument. The second, and related, problem, which Democritus and Bruno completely bypassed, was an accounting of the human soul, or mind: How could a single, large-scale, unified mind arise from monadic souls (i.e. the combination problem)?

Leibniz attempted to address both problems directly. Objects were collections of monads, and some of these objects—the ones (such as animals and plants) with “a thoroughly indivisible and naturally indestructible being” (1686b/1989: 79)—possessed a unifying and dominant monad. This served as the soul or mind of the individual. Such individuals were considered both “living beings” and “composite substances.” The other, non-dominant monads composed the body of the living being, and were linked to the dominant soul/mind monad either by pre-established harmony or (in his later theory) by the *vinculum substantiale*.

Yet it must be admitted that Leibniz never gave any explanation of how the dominant monad came to be, or why it only appeared in living beings such as animals. His discussion of borderline cases is informative. Only once did he directly address the issue of larger-scale objects: “. . . if I am asked in particular what I say about the sun, the earthly globe, the moon, trees, and other similar bodies . . . I cannot be absolutely certain whether they are animated, or even whether they are substances. . . .” (1686b/1989: 80) His uncertainty about trees (and presumably all plants) apparently subsided soon thereafter; by 1687 he clearly included plants among the sentient. He wrote: “I do not dare assert that plants have no soul, life, or substantial form. . . .” (1687/1989: 82) Later he added this:

. . . it seems probable that animals, which are indeed analogous to us, and similarly plants, which correspond to animals in many ways, are not composed of body alone, but also of soul, by which the animal or plant, the single indivisible substance . . . is controlled. (1690/1989: 104)

Near the end of his life, Leibniz observed that “the limbs of [each] living body are full of other living beings, plants, animals, each of which also has its entelechy, or its dominant monad” (*Monadology*, section 70). The issue of plants is relevant because Hartshorne, citing (dubiously) Whitehead and ignoring Leibniz, pointedly excluded them from the ranks of the animate.

Two hundred years later, Whitehead developed his theory of the organism as the model for reality. He seemed to have employed some of Leibniz's ideas. But, like Leibniz, Whitehead had an ambiguous conception of the aggregate. Whitehead was faced with the same issue as the monadists—how to account for combination and unity of the human mind. In his system, point-like occasions of experience with both physical and mental poles were likened to monads with windows—i.e. were considered capable of interaction. But Whitehead did not say clearly *how* they were unified, or in *what types* of beings.

Consider Whitehead's last four major philosophical books: *Science and the Modern World* (1925), *Process and Reality* (1929), *Adventures of Ideas* (1933), and *Modes of Thought* (1938). There is virtually no discussion of Leibniz's ideas, in particular his notion of aggregates. Leibniz's dominant monad theory is largely ignored, except for a few passing mentions in *Process and Reality*. This is rather surprising in view of the generally high regard Whitehead seems to have had for Leibniz. Furthermore, the discussion of aggregates (or, as Whitehead prefers, 'societies') is sporadic and obtuse throughout these works. *Science* and *Adventures* have virtually no mention of the topic. *Process and Reality*, by contrast, goes into a lengthy dissertation on the nature of a society. The one consistent theme is that all objects, from atoms to stones to humans, are in reality "societies of [point-like] actual occasions," just as Leibniz saw things as aggregates of point-like monads. However, Whitehead offers nearly a dozen different categories of society, including "electromagnetic," "corpuscular," "structured," "specialized," "stabilized," "living," and "subordinate." In the midst of this plethora the reader is never clear which ones possess a unified sentience and which do not. Some passages in *Process and Reality* seem vague and conflicting:

- The critical passage on "the ultimate metaphysical principle"—the "advance from disjunction to conjunction," or, more succinct, "the many become one, and are increased by one" (1929/1978: 21)—seems to apply to any aggregate of occasions. Whitehead bears the burden of explaining why, though an ultimate principle, this advance to unity does not occur in all things.
- "Structured societies" are those that have both "dominant" and "subordinate" sub-societies. The overall structure provides a protected environment that sustains the sub-societies. "Molecules are structured societies, and so in all probability are separate electrons and protons. Crystals are structured societies. But gases are not. . . ." (99) Elsewhere he includes "crystals, rocks, planets and sun" (102) in this list. Structured societies have two ways

of creating a protective environment: First, by “massive average objectification of a nexus,” which would appear to apply to stones and such. However, “this mode of solution requires the intervention of mentality”; further, “this development of mentality is characteristic of the actual occasions which make up the structured societies we know as ‘material bodies’” (101). Whitehead adds that “such mentality represents the first grade of ascent,” possessing “some initiative of conceptual integration, but no originality in conceptual prehension” (ibid.). Apparently there is a latent mentality in even the simplest structured society. The second way is “appetition,” i.e. the ability to “originate novelty to match the novelty of the environment” (102). This ability ranges from “thinking” (in higher organisms) to “thoughtless adjustment of aesthetic emphasis” (in lower). Societies that act in this second way are deemed living or organic, the others inorganic. However, “there is no absolute gap between ‘living’ and ‘non-living’ societies” (ibid.). Thus, they seem to exist on a continuum of mentality—again, mentality in all.

- The standard view of post-Whitehead process philosophers is that atoms, molecules, and individual cells are included among the sentient. On the one hand, the above point suggests this. On the other, Whitehead explicitly notes that “a cell gives no evidence whatsoever of a single unified mentality” (104). Later he goes further: “In the case of single cells, of vegetation, and of the lower forms of animal life, we have no ground for conjecturing living personality.” (107)
- However, Whitehead suggests elsewhere that all aggregates can be seen as individuals in their own right: “. . . there is the . . . potential aggregation of actual entities into a super-actuality in respect to which the true actualities play the part of coordinate subdivisions. In other words, just as . . . one atomic actuality can be treated as though it were many coordinate actualities, in the same way . . . a nexus of many actualities can be treated as though it were one actuality. This is what we habitually do in the case of the span of life of a molecule, or of a piece of rock, or of a human body.” (286–287)

Then in *Modes of Thought* we find other passages that conflict with the standard view. Whitehead initially informs us that “a vegetable is a democracy; an animal is dominated by one, or more centers of experience” (1938: 24). Unfortunately, he adds that “our statement is oversimplified,” because “the distinction between animals and vegetables is not sharp cut. Some traces of dominance can be observed in vegetables, and some traces of democratic independence can be found in animals.” (ibid.)

Whitehead continues by articulating four types of aggregations: (1) the “lowest” or “nonliving,” which is “dominated by the average”—though even here he allows that “flashes of selection” are possible, if only “sporadic and ineffective” (ibid.: 27), (2) “vegetable grade,” which “has added coordinated, organic individuality to the impersonal average of inorganic nature” (ibid.), (3) “animal grade,” with “at least one central actuality,” and (4) “human grade,” with “novelty of functioning.” He reiterates a similar sequence at the end of the book, again emphasizing “the aspect of continuity between these modes” (ibid.: 157). The conclusion would seem to be either that Whitehead was trying to articulate a tremendously complex theory of the aggregate, or that he in fact saw some degree of mentality in all things *as wholes*, and not simply in the mental poles of their constituent occasions.



Reading Whitehead in light of Leibniz’s monadology,² Hartshorne claimed that only things with a deep organic unity qualify as true (or “genuine”) individuals. In the absence of a clear theoretic structure, Hartshorne concluded that precisely which objects qualify is not definable a priori, but is rather a function of empirical study.³ Generally speaking, true individuals exhibit some—if even very slight—degree of spontaneity and unpredictability, which is indicative of a unifying, dominant force. Aggregates, on the other hand, behave very predictably and mechanistically. They display absolutely no degree of unified action. Any inherent dynamics (such as those of the atoms) are averaged out by the aggregate, leaving no net force to serve as a unified individual.

Based on his rough empirical assessment, and drawing from certain passages in Whitehead, Hartshorne determined that not only humans but all animals clearly display spontaneous unified behavior, even down to the level of one-celled creatures. At the level of the micro-constituents of matter, Hartshorne included molecules, atoms, and sub-atomic particles; their unpredictability and their spontaneity were confirmed by then-recent advances in quantum theory and by the probabilistic behavior of such particles.

At the higher end of the scale, Hartshorne jumped directly from humanity to the universe as a whole, including it among the ranks of animate beings. And he explicitly excluded virtually everything else, including all inorganic objects (rocks, tables, houses, and so on). Also excluded were all higher-order systems (a forest, a social group, the Earth as a whole), even

though these contain sentient parts. Even individual plants were excluded; apparently basing his view on Whitehead's "vegetables are a democracy" statement, Hartshorne saw plants as colonies of (sentient) cells rather than as truly integrated individuals. Hence, *all* aggregates, even though composed of sentient atoms, molecules, and perhaps cells, are not *in themselves* sentient. Only the genuine individuals, as determined empirically, are unified animate beings.

In this sense, process philosophy in fact advocates a dualistic theory of mind. Objects and structures classified as true individuals possess mind and have experiences; all others do not. Experience or sentience is posited as a fundamental, ontological characteristic of reality, and thus there exists a clear divide between the experiencers and the non-experiencers. Griffin (1998: 169–198) attempts to downplay this distinction, characterizing it as upholding a form of monism because the aggregates are not "true beings." But the distinction is there nonetheless. There is no clear ontological separation between the mere aggregates and true individuals. And this point is important because (as Griffin notes) it is offered up as the way out of a number of critical attacks against process panpsychism—more on this below.

Like Leibniz and Whitehead, Hartshorne did not offer much in the way of argumentation for his particular list of animate things. The reliance on empiricism is a matter of epistemological concern, but says nothing about the theoretical and ontological basis for such a divide. Why should it be that only certain aggregates are blessed with mind and experience, while others are not? And what is the ontological basis by which a dominant (or "regnant") monad takes control and serves as the mind? Are these to be taken as unfathomable mysteries? Are they simply brute facts of reality? One is led to suspect that process theory is significantly incomplete on this matter.

Ultimately this dichotomy between true individuals and aggregates seems entirely too arbitrary. If one postulates a fundamental distinction in nature, then one ought to have a compelling reason for doing so.⁴ Both a rock and an animal are aggregates of (sentient) atoms, yet one is seen as sentient in its own right and the other is not—what is the difference? They of course differ in many ways—internal complexity, dynamic relation to the environment, etc.—but they are alike in their constitution *as aggregates*. A living aggregate is clearly different from a non-living aggregate, but not in its aggregate-ness. The process view argues not merely that they are different in degree, but are *ontologically* different, different in kind; the true individuals are said to possess something real and fundamental that the others do

not. Even on a priori principles it seems that any two coherent and persistent structures of mass-energy should share certain core characteristics, and unless one is prepared to argue for eliminativism, that mind would be among these (this is essentially Schopenhauer's argument).



Apart from the problem of aggregates, Hartshorne tackled the issue of “proving” panpsychism. Rather than attempting to prove it, he adopted Paulsen's tactic and turned the question around. First he asked whether science, which is in the business of proofs, can disprove panpsychism. He answered No, both because it treats things primarily in aggregate form, and also because it cannot distinguish the fact *that* an object feels from *how* it feels. He went on to explain that philosophical reasoning offers no inherent basis for rejecting panpsychism. Quite the contrary: there are “great philosophical advantages” (1937: 175) to panpsychism, including explaining the relation between sensation and feeling, and deeper comprehension of the concepts of space and time—relying on a Bergsonian argument for memory in all aspects of reality, he stated that “the idea of time is unintelligible unless panpsychism is true” (174).

Hartshorne argued that panpsychism has been damaged by its association with idealism. In the 1930s, as the views of Kant and Berkeley were being discredited by the rising positivist philosophy, panpsychism too was disparaged. Moore and Perry were among the leading critics. Yet it should be clear that panpsychism, while conceivably a form of idealism, is substantially different from a Berkeleyan or Kantian position. Hartshorne rather associated it with the so-called idealism of Leibniz and Whitehead, which is almost a realist or even objectivist view.⁵ The “absurdity of [traditional] idealism,” Hartshorne said, “has no bearing upon panpsychism” (177).

Hartshorne went on to claim that organic sympathy (and the accompanying panpsychism) is capable of resolving six major philosophical problems: mind-body, subject-object, causality, the nature of time, the nature of individuality, and the problem of knowledge.⁶ Very briefly: the human mind results from a “sympathetic participation” or “sympathetic rapport” with the sentient cells of the body—whose sentience is itself a product of the rapport with the sentient atoms. The relation of subject to object is similarly an exchange between enminded participants, without which knowledge would be impossible. More generally, all causality is manifested through such a resonance between two minds. Moments in time are a “sympathetic bond” between past and future, much as Bergson and Whitehead described. The

“individual” is a result of a balance between the integrative power of sympathy and the disintegrative power of its opposite, antipathy; in the manner of Empedocles, Hartshorne asserted that pure sympathy would destroy individuality (by merging all into one), and that pure antipathy would not allow for any structure or knowledge at all.

These ideas, and especially the emphasis on panpsychism, recurred throughout Hartshorne's long career. They appeared in one of his discussions of freedom and free will,⁷ and they were featured in his entry on panpsychism in *A History of Philosophical Systems* (1950: 442–453).⁸ Then, in the late 1970s, Hartshorne published some important articles directly arguing for panpsychism. The most notable of these was “Physics and Psychics: The Place of Mind in Nature” (1977), in which Hartshorne again presented panpsychism (now preferring to call it psychical monism or psychicalism) as a third way between dualism and materialism: “Psychical monism avoids the most obvious demerits of its two rivals. It is a monism, yet it is not a materialism.” (1977: 90) He offered a straightforward case for panpsychism, beginning with four reasons why inanimate objects appear devoid of mind: (1) apparent inactivity or inertness, (2) lack of freedom and initiative, (3) no clear distinction between parts and the whole (if a chair has a mind, what about each leg, joint, and nail?), and (4) lack of purpose. He disposed of these four reasons by relying primarily on his view that only true individuals possess mind. Rocks and chairs are, he said, not sentient individuals but only aggregates of sentient atoms and molecules. Matter is not inert but continuously active and dynamic at the atomic level. Quantum indeterminacy is a kind of freedom. And “purpose” is likely reflected over varying lengths of time, which may be exceedingly short or exceptionally long. It would require superhuman abilities to grasp this full range and to declare definitively that purpose was nonexistent.

On the positive side of the argument, Hartshorne asked “What are the advantages of giving up the notion of mere dead, mindless physical things?” He conceded that these advantages are mostly philosophical, but he argued that doing so “enable[s] us to arrive at a view of life and nature in which the results of science are given their significance along with the values with which art, ethics, and religion are concerned” (92). In other words, the spiritual and reverential values are strengthened by such a worldview. More specifically, Hartshorne cited some strictly philosophical advantages: (1) The problem of how matter produces mind is dissolved. (2) It supports the intuitive view that organic and inorganic substances lie along one continuum of existence. (3) The problem of causality is resolved by taking account of memory and perception (or anticipation). (4) It provides the

most satisfactory solution to the mind-body issue (describing it as “a relation of sympathy”). (5) It solves the old problem of primary and secondary qualities by ascribing secondary (subjective) qualities to all things. (6) It provides for an account of behavior of all things in psychical terms (relating to perception, emotion, memory, etc.).

In the final analysis, Hartshorne concluded, panpsychism/psychicalism has little direct bearing on matters of science *per se* but does profoundly influence our human attitudes, and consequently—indirectly—our actions. “For logical, aesthetic, and religious reasons our view of the general [panpsychic] cosmic status of quality (and value) influences our behavior, and in this sense its consideration is pragmatically significant.” (1990: 397) It is, after all, the most viable ontology available to us—certainly preferable to an utterly unintelligible materialism: “. . . the concept of ‘mere dead insentient matter’ is an appeal to invincible ignorance. At no time will this expression ever constitute knowledge.” (1977: 95)

9.2 Developments in the 1960s and the 1970s

In the last half of the twentieth century, apart from Hartshorne, a number of philosophical voices argued for variations of panpsychism. Not surprisingly, most of them were from outside the mainstream of traditional academic philosophy. Academic philosophy, having become thoroughly immersed in the analytic and linguistic disciplines, seems to have largely abandoned the deeper, more penetrating, more metaphysical questions of mind. Modern philosophy, as practiced in the major universities, primarily serves to perpetuate a positivistic, mechanistic worldview. As James said, philosophy is ultimately about vision. The vision of modern philosophy is predominantly an analytical one, and thus largely sterile and inert: a world of passive matter acted on blindly by forces that inexplicably give rise to life and mind.

Scattered references to panpsychism continued to appear into the 1960s and the 1970s, though often of a confused and ambivalent nature. Consider the widely respected philosopher Herbert Feigl. In 1958 he published a lengthy and influential article, “The ‘Mental’ and the ‘Physical,’” in which he argued for a form of the identity theory that has been interpreted by certain writers as a kind of panpsychism. Identity theories equate at some level the physical states of the brain with mental states, typically stating directly that the mental states *are* the brain states. Thus, a (physically) changed brain state necessarily implies a changed mental state, in a kind of one-to-one relationship. Such a mind-brain identity presents a

number of difficulties (as Feigl pointed out), one of which is the precise meaning of 'identical'.⁹ Under most interpretations, 'identical' means that the mental is somehow dependent or supervenient on the physical.

If mental states are physical brain states, and if the physical brain (neural) states are seen as not fundamentally unlike physical processes in general, then one is strongly inclined toward a panpsychist view. If one accepts an identity theory and yet denies panpsychism, then one necessarily accepts that there is something ontologically unique about the physical processes occurring in the brain that give rise to consciousness or mind—a position which is difficult to defend, and smacks of a kind of neo-vitalism.

Feigl seems to have recognized this dilemma, and yet wavered between the two horns. After ruling out many common descriptors of 'mental', he determined that "direct experience" (i.e. qualia) and "intelligence" are the two most definitive characteristics. Both are required, because if intelligence alone were chosen "as the sole criterion of mentality, then it would be hard to draw a sharp line anywhere within the realm of organic life. Even in the kingdom of plants . . . we find processes [characteristic] of purposive behavior." (1958: 411–412) Furthermore, the notion of intelligence "may be attributed not only to the higher animals but also to the 'thinking machines' [i.e. computers]" (419).¹⁰ Other putative characteristics of mind are inappropriate: "mnemonic, teleological, holistic, and emergent features are not adequate as criteria of mentality, because these features characterize even inorganic processes and structures" (415)—apparently implying that panpsychism cannot be true, by definition.

This all leaves the "raw feels" of direct experience, i.e. qualia or sentience, as the critical factor. Sentience can be attributed to things, Feigl argues, only by analogy: "I have no doubt that analogy is the essential criterion for the ascription of sentience." (427) Analogy, of course, is the panpsychists' primary argument. Feigl noted this but then claimed that "the panpsychists' hypothesis is inconsistent with the very principles of analogy which they claim to use" (451). This statement is based on "the enormous differences in behavior" between, for example, humans and insects. But this is no real counterargument. Panpsychism in general accepts large differences in both qualia and behavior; it merely claims that all structures possess *some* qualia, even if unimaginably slight. It is thus not clear exactly how or why the panpsychist hypothesis is inconsistent. Feigl's wavering is especially evident later in the article. On the one hand, "the identity theory regards sentience . . . and other [unexperienced] qualities . . . as the basic reality" (474). Yet he seeks to avoid "the unwarranted panpsychistic generalization." However, "one is tempted, with the panpsy-

chists, to assume some unknown-by-acquaintance qualities quite cognate with those actually experienced” (475).

Feigl’s position has been interpreted in varying ways. Even in 1958 it was apparent to many that Feigl was implicitly arguing for panpsychism. He reacted shortly thereafter: “Well-intentioned critics have tried to tell me that [my position] is essentially the metaphysics of panpsychism. . . . It is not panpsychism at all—either the ‘pan’ or the ‘psyche’ has to be deleted in the formulation.” (1960: 31) After adding that in his view “nothing in the least like a psyche is ascribed to lifeless matter” (32), he concluded that the term ‘pan-quality-ism’ “come[s] much closer to a correct characterization than ‘panpsychism’” (ibid.).

And yet Feigl was never able to shake the panpsychist implications of his view. Popper (1977: 200) made him out to be a virtual panpsychist. Sprigge characterized his position as “to all intents and purposes, panpsychist” (1984: 7). Chalmers (1996: 166) classed him with Russell as a sympathizer of panpsychism. Privately, Feigl seems to have accepted this close association. Maxwell (in Globus et al. 1976: 320) recalled him as having said “If you give me a couple of martinis, a good dinner, and a couple of after-dinner drinks, I would admit that I am strongly tempted toward (a rather watered-down, innocuous) panpsychism.” If true, this is indicative of Feigl’s deep-seated conflicts about the subject—a phenomenon especially prevalent in the past few decades.

Another implicit reference to panpsychism came in 1967 with Arthur Koestler’s book *The Ghost in the Machine*. Koestler’s theory in this book is centered on a triple-aspect hierarchical structuring of reality. On his view each well-defined structure or thing possesses three essential characteristics: each is (a) composed of parts at lower levels of existence, (b) a whole in itself, and (c) a part of larger wholes. In this system (which closely reflects, but does not acknowledge, Cardano’s outlook) each thing so conceived is referred to as a “holon.” Atoms are holons, as are cells, animals, social groups, the Earth, and so on.

Koestler was clear that such an ordering encompasses living and nonliving systems, and implies a certain common dynamic interaction with the world. The interactive mode of humans relates to our minds, and thus there is the implication that all holons relate to the world in a somewhat mind-like manner:

As we move downward in the hierarchy . . . we nowhere strike rock bottom, find nowhere those ultimate constituents which the old mechanistic approach to life led us to expect. *The hierarchy is open-ended in the downward, as it is in the upward direction.* (1967: 61–62)

Each holon struggles to maintain its own order of existence (“self-assertive tendency”) and yet also seeks to participate in larger-order structures (“participatory or self-integrative tendency”). This much is perhaps clear as it applies to living organisms, but Koestler was compelled by his own theory to acknowledge them at all levels of being. He saw this at once, yet he recoiled at the panpsychist implications:

It would, of course, be grossly anthropomorphic to speak of ‘self-assertive’ and ‘integrative’ tendencies in inanimate nature, or of ‘flexible strategies’. It is nevertheless true that in all stable dynamic systems, stability is maintained by the equilibrium of opposite forces, one of which may be centrifugal or separative . . . representing the holistic properties of the part, and the other a centripetal or attractive or cohesive force which keeps the part in its place in the larger whole. . . . (62–63)

In the appendix Koestler wrote that each level of being attains progressively greater consciousness: “Each upward shift is reflected by a more vivid and precise consciousness of the ongoing activity; and . . . is accompanied by the subjective experience of freedom of decision.” (347) So, in spite of his denial of panpsychism, he clearly ascribed mental-like qualities to all levels of existence. Like Feigl, he seems to have been torn by his own conclusions.

Koestler appears never to have resolved this conflict. Eleven years later he explicitly addressed the topic of panpsychism. In *Janus* he observed (incorrectly) that “panpsychism and Cartesian dualism mark opposite ends of the philosophical spectrum” (1978: 229). His “holarchic” system, he claimed, “replaces the panpsychist’s continuously ascending curve from cabbage to man by a whole series of discrete steps—a staircase instead of a slope” (230). Yet each step represents some level or degree of mentality:

In the downward direction we are faced with a multiplicity of levels of consciousness or sentience which extend far below the human level. . . . The hierarchy appears to be open-ended both in the upward and downward direction. (ibid.)

So Koestler accepted open-ended downward (and upward) levels of sentience, yet denied that his system was a form of panpsychism. The two views are difficult to reconcile.

Koestler’s theory has been championed recently by the transpersonal philosopher Ken Wilber. Wilber takes the basic system of Cardano/Koestler and marries it with elements of Teilhard, Plotinus, Spinoza, process philosophy, and various Eastern philosophers,¹¹ producing an ontology which is explicitly panpsychist—in the sense that all individuals have an “interior” (“depth” or “Emptiness,” as he prefers). Wilber’s system, laid out in detail in his 1995 book *Sex, Ecology, Spirituality*, is reflected in a number of his

other works (especially *The Eye of Spirit* and *Integral Psychology*). He envisions reality as a four-part structure, based on the distinctions of individual/social, and interior/exterior; each holon is at once an individual and a part of a social system, and has both an exterior (physical) aspect and an interior (“mental,” loosely) aspect.

As explicit as his system is, Wilber has two concerns about the term ‘panpsychism’. First, he is concerned that most panpsychists ascribe consciousness, or some related variant of human experience, to all things. His “depth” is “literally *unqualifiable*” (1995: 538), and hence cannot be described in terms relating to our human phenomenology. Qualities like sensation or feeling or even psyche emerge at certain points in the hierarchy of being, and are only different forms of the more general “depth”: “I am a pan-depthist, not a pan-psychist, since the psyche itself emerges only at a particular level of depth.” (ibid.: 539) He reiterates this in *Integral Psychology* (2000: 276–277). Second, like the process philosophers, Wilber’s ‘pan’ is not so extensive as to include literally all physical things. Aggregates, he explains, have no depth:

I agree entirely with Leibniz/Whitehead/Hartshorne/Griffin that only the entities known as compound individuals (i.e. holons) possess a characteristic interior. Holons are different from mere heaps or aggregates, in that the former possess actual wholeness . . . Heaps [consist of] holons that are accidentally thrown together (e.g. a pile of sand). Holons have agency and interiors, whereas heaps do not. (2000: 279–280)

Wilber goes on to observe that “the common panpsychist view . . . is that, for example, rocks have feelings or even souls, which is untenable” (ibid.). Thus—apart from misreading the “common view” of panpsychism—Wilber, like Hartshorne and Griffin (and Leibniz), draws the burden of explaining just how and when an interior appears in, say, a molecule of salt when one does not exist in the Na and Cl pair just before bonding,¹² or, for that matter, how a *new* interior of a brain is created from the union of independent interiors of the neurons. Leibniz’s dominant monad (or Whitehead’s dominant occasion) was never a satisfactory solution, and unfortunately Wilber offers no better explanation.

The psychiatrist and philosopher Gordon Globus developed a panpsychist reading of the identity theory in the early 1970s. Starting from Feigl’s conception, Globus determined (as has been noted) that there is no ontological divide between neural events and general physical events. “The present biological perspective,” he wrote, “suggests that physical nonneural events and those physical neural events identical with consciousness *per se* have similarity *qua* events.” (1972: 299) Thus he was led to ask “Could

consciousness per se . . . be in some way equivalent to the ultimate physical events which comprise reality?" (ibid.) His initial conclusion was that they are, if not identical, at least "congruent."

In 1973 Globus wrote that mind is the process of embodying a physical event. The brain performs this function very well, and in fact "its capability for thus embodying events is identical with its capability of mind" (1134). But the brain is only a special, highly evolved, instance of a physical structure. Other systems embody events as well; "less evolved organs, organisms, and machines have only a 'protomind' to the extent that they are capable of embodying events" (ibid.).

This theory became explicit panpsychism in Globus' 1976 article "Mind, Structure, and Contradiction." Seeking to avoid a naive, animistic panpsychism, Globus articulated a "psychoneural structural identity thesis" that associates mind with all physical structures. Adapting and modifying the Cartesian position into a dual-aspect theory, he argued that mind is "unbounded," brain is "bounded," but each refers to the same structure of the underlying reality. The structure of the mind and the structure of the brain are "*one and the same*, even though the 'stuff' structured is unbounded in the first case and bounded in the second" (282).

As an example Globus mentioned the sense of sight, in which a pattern of light reflects off some object and reaches the eye:

. . . the electromagnetic waves impinging on the retina . . . conserves the structure of the "object" from which it has been reflected. . . . Further, the "stuff" structured varies: from whatever the object "stuff" is, to a light "stuff," and finally to a neural "stuff"—but the structure *per se* is (more or less) maintained. (287)

Structure is thus embodied in many different forms. In humans we recognize mind as one aspect of this. More generally it is an "intrinsic perspective" that varies only according to the particular embodiment. Another of Globus' examples was the following:

. . . a brain and a rock are systems differing enormously in "richness" of structure, and the respective "minds" accordingly differ enormously. . . . Although I appreciate that most will consider it ridiculous to attribute awareness to a rock, for my purposes, I choose to emphasize the awareness intrinsic to rock. (290)

Globus employed an old argument, the argument from Continuity: "At heart, the issue is just that there is no place to unarbitrarily draw a line (or even a range) in a hierarchy of systems increasing in complexity, above which we can say that mind occurs and below which it does not." (ibid.) The whole notion of mind as emerging only in high-complexity structures is "human chauvinism at its worst." Acknowledging that such a panpsychic

worldview is “almost impossible to fathom” from within the scientific mindset, Globus concluded his “defense of panpsychism” with an appeal to intuitive and even mystical insight as necessary for full comprehension. Clearly panpsychism lies fundamentally outside the framework of contemporary mechanistic materialism, and therefore a radical break of some kind is required to deeply grasp and adequately assess such a view.

9.3 Mind in Nature: Panpsychism and Environmental Philosophy

Any metaphysical system that views all natural objects as endowed with mind-like qualities will have clear implications for one’s attitude toward nature and the environment. The growing awareness of environmental problems that occurred in the 1960s, the 1970s, and the 1980s coincided with the emergence of ecological philosophy and the field of environmental ethics. Thinkers in these areas developed a variety of philosophical systems that attempted to create a deeper and more intimate connection between humanity and nature; these included indigenous-culture worldviews, Gaia theory, spiritualism, eco-theology, and various forms of pantheism.

Of particular interest are those philosophical systems that were grounded in animist or panpsychist ontologies. Such panpsychist eco-philosophies have their historical roots in a variety of individuals, some of whom were discussed above. One of the earliest was Francis of Assisi, who saw the Spirit of God in all natural things and thus treated everything with the greatest reverence. In the sixteenth century, Bruno’s pantheistic and panpsychist metaphysics implied a deeper integration of humanity into the natural order. His system put forth a “call for a healing of the division between nature and divinity decreed by Christianity” (Ingegno 1998: xxi). Another recent commentator reflected on Bruno’s “effort to reattach the self to its broader natural context—something perhaps which eco-philosophy is attempting to achieve” (Calcagno 1998: 208). Leibniz demonstrated evident compassion toward even the smallest of creatures. Kant, in a passage titled “Duties to Animals and Spirits” (1784–85), mentions that “Leibniz put the grub he had been observing back on the tree with its leaf, lest he should be guilty of doing any harm to it.” The vitalistic materialism of LaMettrie supported his sensitivity and passion for nature; the person who sees all things as animate “will cherish life . . . ; he will be full of respect, gratitude, affection, and tenderness for nature . . . ; and, finally, happy to know nature and to witness the charming spectacle of the universe” (1747/1994: 75). Schopenhauer was pessimistic about humanity but

displayed both admiration and concern for nature; he wrote against cruelty to domestic animals and lamented the damage caused by the advance of industrial society. Goethe's panpsychic worldview was deeply intermingled with his romantic sensitivity to the natural world. And Fechner, of course, grounded his ecstatic love of nature in a thoroughly panpsychic vision of the universe, and deserves to be held as a founding father of the modern environmental movement; certainly he anticipated much of Gaia theory, more than a century before Lovelock.

In the middle of the nineteenth century, Henry David Thoreau's intimate awareness of nature led him to a kind of pantheism in which the Earth and all of nature were alive and animate, as a single living organism (see "A Winter Walk," or "Succession of Forest Trees" in *Walden*). Perhaps his most explicit writing on the subject is to be found in the journal entry dated December 31, 1851:

. . . there is motion in the earth as well as on the surface; it lives and grows. It is warmed and influenced by the sun—just as my blood by my thoughts. . . . The earth I tread on [in winter] is not a dead inert mass. It is a body—has a spirit—is organic—and fluid to the influence of its spirit—and to whatever particle of that spirit is in me. . . . Even the solid globe is permeated by the living law. It is the most living of creatures.

Thoreau's sympathies pointed to a cosmos of universal animation. And if the Earth is seen as animate in itself, what consistent ontology could refrain from accepting full panpsychism?

A more explicitly panpsychist outlook came from Thoreau's younger contemporary, John Muir. Muir developed a profoundly non-anthropocentric philosophy in which all living things possessed the right to self-realization and happiness: "Nature's object in making animals and plants might possibly be first of all the happiness of each one of them, not the creation of all for the happiness of one [i.e. man]." (cited in Teale 1976: 317) More than this, Muir considered the possibility that all objects of nature were in some way sensitive and aware:

Plants are credited with but dim and uncertain sensation, and minerals with positively none at all. But why may not even a mineral arrangement of matter be endowed with sensation of a kind that we in our blind exclusive perfection can have no manner of communication with? (*ibid.*)

Such musings led Muir to a Franciscan outlook on nature: ". . . every rock-brow and mountain, stream, and lake, and every plant soon come to be regarded as brothers" (321).

In the twentieth century, Aldo Leopold, “father of environmental ethics,” also developed strong sympathies toward panpsychism. Leopold was deeply influenced by the panpsychist Russian philosopher Peter Ouspensky. He cited Ouspensky in an early essay, “Some Fundamentals of Conservation in the Southwest” (ca. 1920/1979). Considering “conservation as a moral issue,” Leopold found the organismic view of the Earth compelling. In the natural processes of the Earth we find “all the visible attributes of a living thing” (139). Furthermore, from this standpoint follows “that invisible attribute—a soul, or consciousness—which not only Ouspensky, but many philosophers of all ages, ascribe to all living things and aggregations thereof, including the ‘dead’ earth” (ibid.) Leopold is clear that such a view can serve as the foundation for an environmental ethic: “Philosophy, then, suggests one reason why we cannot destroy the earth with moral impunity; namely, that the ‘dead’ earth is an organism possessing a certain kind and degree of life, which we intuitively respect as such.” (140) This declaration constitutes the first invocation of pan-spirituality as a potential remedy for healing the ecological damage brought on by modern industrial society.

Thoreau, Muir, and Leopold were not academic philosophers, and thus they may be excused for relying more on intuitive insight than learned philosophy in expressing panpsychist sympathies. But there is no doubt that such beliefs underlay much of their attitudes toward nature.

A deeper union of philosophy, environmentalism, and panpsychism occurred in the work of Albert Schweitzer. In *The Philosophy of Civilization* (1949), Schweitzer outlined his views on history, culture, nature, and the problem of religious pessimism. He was heavily influenced by Schopenhauer in two respects. First, he adopted Schopenhauer’s ontology of all things as manifestations of pure will—specifically, the “will to live.” Second, he inverted Schopenhauer’s notorious pessimism, seeing in the will-to-live a profoundly optimistic and altruistic worldview.

Following, like Thoreau and Ouspensky, the ancient Greek conception of life, Schweitzer viewed all things in nature as alive in an extended sense of the word, as manifestations of a dynamic and spiritual cosmos:

The essential nature of the will-to-live is determination to live itself to the full. It carries within it the impulse to realize itself in the highest possible perfection. In the flowering tree, in the strange forms of the medusa, in the blade of grass, in the crystal; everywhere it strives to reach the perfection with which it is endowed. In everything that exists there is at work an imaginative force. (1949: 282)

From such a worldview derives the ethical imperative of *reverence for life*: “Reverence for life means to be in the grasp of the infinite, inexplicable,

forward-urging Will in which all Being is grounded." (283) The universal will-to-live, which is manifest in humans as reverence for life, is realized in the rest of nature as a kind of elemental, life-affirming force: "Nature knows only a blind affirmation of life. The will-to-live which animates natural forces and living beings is concerned to work itself out unhindered." (290) Schweitzer's passionate blend of quasi-mystic reverence for nature with a rational philosophical analysis placed him at the leading edge of environmental philosophy, and his use of panpsychist metaphysics to support an ethic of nature foreshadowed the later writings of White, Nash, Hartshorne, Sprigge, Plumwood, Mathews, and others.



A reawakening of the connection between panpsychism and attitudes toward nature came in 1967 with the publication of a seminal article by Lynn White Jr.: "The Historical Roots of Our Ecologic Crisis." In assessing the cultural and religious basis for Western attitudes toward nature, White focused on the inherently alienating aspects of Christianity. In the first place, it virtually banished spirit from the natural world—excepting, of course, the human soul, and this as only a temporary condition. Second, it put humanity at the head of the corporeal hierarchy. Humans were thus placed as radically distinct, and radically superior, to all earthly things. With nature despiritualized, humanity was free—even encouraged—to manipulate and exploit nature: "By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects. . . . The spirits *in* natural objects, which formerly had protected nature from man, evaporated." (1967: 1205) It was in this sense that White called Christianity "the most anthropocentric religion the world has seen" (*ibid.*).

Yet White saw salvation even within the Christian tradition, in (not surprisingly) the radical views of Saint Francis. Francis' "unique sort of panpsychism" (1207) could serve as a spiritual basis for natural reverence: "The profoundly religious, but heretical, sense of the primitive Franciscans for the spiritual autonomy of all parts of nature may point a direction." (*ibid.*) This follows up on Leopold's suggestion that something like a panpsychist outlook could heal the damage to the natural world.

White's article had an immediate and considerable influence in environmental and theological circles, and it remains standard fare in college courses on environmental ethics. In 1973 he offered a few further reflections on the original 1967 piece. He observed that the ultimate drivers of

social behavior are the core value structures of a given society, especially as reflected in that culture's religion. Religion—whether in the overt, classical meaning of the word or in a more subtle, secular sense—embodies society's core values. White reiterated his view that techno-Christian values have led to environmental destruction, following from a denial of spirituality to the objects of nature. He reaffirmed his view that a respiritualization of nature is vital to resolving the situation: "The religious problem [now] is to find a viable equivalent to animism." (1973: 62) White noted that recent advances in science, specifically with respect to an understanding of viruses, have "smashed the artificial conceptual frontier between organic and inorganic matter" (*ibid.*). As before, he observed that such an understanding leads to greater natural reverence. Anticipating debates to follow, he asked "Do people have ethical obligations toward rocks?" (63) But he recognized the inherent difficulties in even posing such a question: ". . . today to almost all Americans . . . the question makes no sense at all. If the time comes when to any considerable group of us such a question is no longer ridiculous, we may be on the verge of a change of value structures that will make possible measures to cope with the growing ecologic crisis. One hopes that there is enough time left." (*ibid.*)

In early 1970, shortly after the publication of White's original article, Gregory Bateson gave a lecture, titled "Form, Substance, and Difference," in which he explicitly located mind in all natural feedback ("cybernetic") systems and furthermore identified mind as the fundamental unit of evolutionary biology: "This identity between the unit of mind and the unit of evolutionary survival is of very great importance, not only theoretical, but also ethical." (1970/1972: 460) Bateson continued: "It means, you see, that I now localize something which I am calling 'Mind' immanent in the larger biological system—the ecosystem." The ethical implications of such a panpsychism are, for Bateson, clear. If, he says, you adopt the conventional objectivist materialist view of mind, then "you will logically and naturally see yourself as outside and against the things around you. And as you arrogate all mind to yourself, you will see the world around you as mindless and therefore not entitled to moral or ethical consideration. The environment will seem to be yours to exploit." (462) Continue in this objectivist mode too long and "your likelihood of survival will be that of a snowball in hell" (*ibid.*). Later in the lecture Bateson reiterated this theme:

. . . when you separate mind from the structure in which it is immanent, such as human relationship, the human society, or the ecosystem, you thereby embark, I believe, on fundamental error, which in the end will surely hurt you. . . . You decide that you want to get rid of the by-products of human life and that Lake Erie will be

a good place to put them. You forget that the eco-mental system called Lake Erie is a part of *your* wider eco-mental system—and that if Lake Erie is driven insane, its insanity is incorporated in the larger system of *your* thought and experience. (484, 485)

The beginning of a cure for such insanity, then, is a recognition and deep appreciation for the mind immanent in the natural world.

In 1975 Roderick Nash took up White's suggestion that we, as a society, must find a way to envision the granting of rights to inanimate nature, even to rocks. Nash recounted Leopold's hierarchy of expanding rights that culminated in recognizing the rights of "the land" itself. Acknowledging that "the transition from life to the non-living environment is the most difficult part of ethical evolution," Nash was nonetheless confident: ". . . it is possible to conceive of the rights of rocks" (1975/1980: 160). Noting "there are several intellectual and emotional roads" by which to reach this point, he discussed just two. The first was the Eastern view of a "divine spirit which permeates all things, living and non-living." The second, implicitly preferable, was the view that "rocks, rightly seen, *are* alive, hence deserving of the full measure of ethical respect accorded to all life" (ibid.). Nash suggested that the current conception of "life" was too restricted—"perhaps there are ranges of life that also transcends our present state of intelligence."

Nash then touched on the practical matter of how we are to act toward inanimate things that have been granted rights, especially given that we are generally in a poor position to assess their wants or needs:

What, after all, do rocks want? Are their rights violated by quarrying them for a building or crushing them into pavement or shaping one into a statue? . . . For the time being, the only way out may be to assume rocks and everything else want to stay as they are. Living things want to live; rocks want to be rocks. (160–161)

Nash thus argued for a kind of self-realization of all things in nature, of letting them play their natural role in the ecosystem. But to take this approach seems to require, for him, a panpsychist stance; it is something he called an "essential underpinning" (ibid.) of an environmental ethic.

In 1977 Nash explicitly returned to the subject in an article titled "Do Rocks Have Rights?" Briefly reviewing the history of an expanded moral domain, including the ideas of Leopold, Nash argued that rocks can fall within the realm of moral regard even without themselves existing as moral beings: "Rocks may not be moral beings, but moral beings can attribute rights to them, claim rights for them, and represent them in the quest for such rights." (1977: 8) He then discussed some ways in which we can understand the notion of rock rights. One is to assume that rocks have intrinsic interests for themselves. There are several ways to envision such interests,

ranging from Eastern mystical philosophy to indigenous or native world-views to a straightforward pragmatic approach in which such interests are taken as a “convenient fiction.” Of the latter point, Nash asked (10): “Pragmatically speaking, if it works to produce good results, why not believe it?” This is an interesting approach because it suggests, indirectly, a potential new argument for panpsychism: If a belief in the rights, the interests, and even the psyche of rocks leads to a better world, then it would be in our interest to adopt it. (This is related to the “Greater Virtue” argument discussed in chapter 10 below.¹³)

Beginning in 1979, the journal *Environmental Ethics* published a number of articles addressing such notions as intrinsic value, nonhuman rights, and moral considerability of natural objects. Some of these drew from panpsychist theories for their justification. The first was a piece by Hartshorne titled “The Rights of the Subhuman World” (1979). He briefly reiterated his view, that “every singular active agent [i.e. every true individual] . . . resembles an animal in having some initiative or freedom in its activity,” and hence each such agent possesses “inner aspects of feeling, memory, and expectation” (53). Furthermore, “where there is feeling there is value in a more than instrumental sense” (54). Thus, all individuals possess intrinsic value, and so are worthy of moral consideration. Yet there is the lingering problem of the Whiteheadian view, that certain broad classes of natural entities like rocks, plants, mountains, and ecosystems are not seen as true individuals, and hence presumably have less standing than other fully integrated beings (like atoms, cells, and animals). The implications of this dichotomy for environmental ethics are still open.

In 1982 the environmental philosopher Baird Callicott published an article comparing European and Native American attitudes toward nature. The animist worldview of indigenous Americans is well known, and they have traditionally (though not uncritically) been attributed a deep-seated respect for the natural world; it is obvious to connect the two. Most commentators have described this connection in a dispassionate, third-person manner. Not Callicott. After elaborating something of the Indian view (“earth, rocks, water, and wind . . . ‘are very much alive’. . . . Natural entities . . . have a share in the same consciousness that we human beings enjoy.”—1982: 300–301), he immediately declares his personal endorsement of the view:

The Indian attitude . . . was based upon the consideration that since human beings have a physical body *and* an associated consciousness . . . , all other bodily things, animals, plants, and, yes, even stones, were also similar in this respect. Indeed, this strikes me as an eminently reasonable assumption. . . . The variety of organic forms . . . is continuous with the whole of nature. Virtually all things might be supposed,

without the least strain upon credence, like ourselves, to be “alive,” i.e. conscious, aware, or possessed of spirit. (301–302)

He adds the observation, similar to that of Leopold and Hartshorne, that such a view is conducive to an environmental ethic:

Further, and most importantly for my subsequent remarks, the pervasiveness of spirit in nature, a spirit *in everything* which is a splinter of the Great Spirit, facilitates a perception of the human and natural realms as unified and akin. (ibid.)

Callicott thus advocates a very strong form of panpsychism, approaching that of traditional animism, in which “all features of the environment . . . possessed a consciousness, reason, and volition, no less intense and complete than a human being’s” (305). Apart from a few similar comments by Royce (1898/1915: 230), such a standpoint is virtually unique in Western philosophy.

In 1983 *Environmental Ethics* published an article by McDaniel titled “Physical Matter as Creative and Sentient.” Drawing, like Hartshorne, on both Whitehead’s process philosophy and ideas in quantum physics, McDaniel argued for a “theology of ecology” based on a view of ordinary matter as “life-like, albeit in an unconscious and primitive way” (1983: 292). Much of the article was a reiteration of standard ideas in process theory and quantum physics, but near the end McDaniel began to draw out some ethical implications: “[The fact that] a rock exhibits unconscious reality-for-itself means that the rock has intrinsic value, for *intrinsic value* is nothing else than the reality a given entity has for itself, independent of its reality for the observer.” (315) The ethical implications arising from such a view are reflected in the values of “reverence” and “empathy”—reverence because all things have intrinsic value and thus are worthy of moral consideration, and empathy because all things are, like ourselves, enminded.

Continuing in the line of argumentation initiated by Hartshorne, the philosophers Armstrong-Buck (1986) and O’Brien (1988) sought to ground the concept of intrinsic value in a panpsychist ontology. Armstrong-Buck pursued McDaniel’s theme, further exploring Whitehead’s ideas in the environmental context. (Although she frequently cited his notions of true individuals as “experiencers” who are creative, self-enjoying, and self-actualizing, she characterized the assertion that Whitehead was a panpsychist as “inaccurate.”) Armstrong-Buck’s hesitation followed from an assumed definition of panpsychism as meaning all things are conscious. As she read Whitehead, “intrinsic value resides only in the experiencing of value.” Since all things (i.e. true individuals) are said to be experiencers, then all possess intrinsic value. O’Brien—taking that other great twentieth-

century panpsychist metaphysician, Teilhard—spelled out similar conclusions. Plunging right into Teilhard’s panpsychist worldview, O’Brien recounted the thesis that “consciousness exists at all levels in hierarchical degrees” (1988: 332). This is presented as a central reason why all natural objects are “good in themselves” and thus worthy of moral consideration. As in the case of Whitehead, this is more of an interpretation rather than a direct reading of original works.

In a 1986 lecture (published in 1991 as “Are There Intrinsic Values in Nature?”), Tim Sprigge repeated the view that panpsychism is a basis (in fact, the “only basis”) for intrinsic value in nature.¹⁴ Sprigge claimed that “there cannot be intrinsic value where there is nothing at all akin to pleasure and pain, joy and suffering” (1991a: 41). Nature, he said, is intimately bound up with mind. This can only be realized by means of Berkeleyan idealism (which he dismissed too implausible) or (more reasonably) by means of a Whiteheadian panpsychic view of nature in which “the inner ‘noumenal’ essence of all physical processes consists in streams of interacting feeling” (ibid.). Panpsychic-based intrinsic value, combined with a human-centered aesthetic value, constituted Sprigge’s dual-aspect system of ecological ethics.¹⁵

Also in 1986, something of an ironic twist occurred in a work of analytical philosophy by Martin and Pfeifer, “Intentionality and the Non-psychological.” This article was to prove relevant to Plumwood’s biocentric “intentional panpsychism” of the 1990s (discussed below). Intentionality, meaning a sense of aboutness or directedness, has been seen by many philosophers, since the work of Brentano in the late nineteenth century, as constituting an essential, perhaps *the* essential, marker for mentality. Martin and Pfeifer offered up some rather shocking news: that virtually all extant theories of intentionality fail to fundamentally discriminate humans from natural objects in general, and thus intentionality—and hence mind—would seem to be omnipresent:

We will show that the most typical characterizations of intentionality, including . . . Lycan’s own suggested characterization and John R. Searle’s more extended treatments of the concept all fail to distinguish intentional mental states from non-intentional dispositional physical states. Accepting any of these current accounts will be to take a quick road to panpsychism! (1986: 531). [Heavens to Murgatroyd! —D.S.]

Martin and Pfeifer saw panpsychism as a *reductio ad absurdum* and thus concluded that the standard view of intentionality was defective. Their analysis of current theories, though largely technical, was centered on the fact that “recognition” and “awareness of satisfaction” are needed as basic aspects of intentionality. They argued that if a thing meets certain “satisfaction

conditions" resulting from environmental stimuli, "then clearly that aspect of awareness of satisfaction conditions is something mindless physical objects are equally capable of" (ibid.: 544). Citing the notorious thermostat example, they added that such devices have a "causal disposition" to act in certain ways once various conditions have been satisfied. Plants also exhibit a similar "satisfaction capacity." Consequently, plants and thermostats would have to be conceded intentionality and mind.

Recognizing the dreaded conclusion that "someone might interpret it as an argument for panpsychism" (and noting sarcastically that "for some, this may be a happy result"), they quickly set out to fix intentionality by redefining the essential role that it plays in truly sentient beings. The degree to which they succeeded is debatable, and so the theory of intentionality retains something of the larger panpsychic implications.

One environmental philosopher who did take intentionality as a basis for panpsychism was Val Plumwood. In *Feminism and the Mastery of Nature* (1993) she devoted a full chapter to critiquing the conventional mind/nature dualism of mechanistic, Cartesian philosophy. Finding issue with the concept of strong panpsychism ("the thesis that consciousness is fully present everywhere" (1993: 133)), Plumwood opted for a form of weak panpsychism (something she later called "intentional panpsychism") in which "*mindlike* qualities" are found throughout nature. She adopted a broad conception of intentionality, treating it as an umbrella term that includes such mind-like qualities as "sentience, choice, consciousness, and goal-directedness" (134). So conceived, it applies equally well to objects ranging from humans to other living creatures to natural processes and systems. Employing the Continuity argument, she observed that "intentionality is common to all these things, and does not mark off the human, the mental, or even the animate" (135).

Plumwood's intentional panpsychism is centered on the self-realization of all natural things. She cites notions of growth, function, directionality, goal-directedness of a self-maintaining kind, and, generally, "flourishing" as indicative of the teleology of nature:

Mountains, for example, present themselves as the products of a lengthy unfolding natural process, having a certain sort of history and direction. . . . Trees appear as self-directing beings with an overall 'good' or interest and a capacity for individual choice in response to their conditions of life. Forest ecosystems can be seen as wholes whose interrelationship of parts can only be understood in terms of stabilizing and organizing principles, which must again be understood teleologically. (135-136)

Such a worldview has a clear bearing on the realm of human ethics:

Human/nature dualism has distorted our view of both human similarity to and human difference from the sphere of nature. . . . When this framework of discontinuity is discarded, we can see [support for a worldview] in which nature can be recognized as akin to the human. . . . We can recognize in the myriad forms of nature other beings—earth others—whose needs, goals and purposes must, like our own, be acknowledged and respected. (137)

Plumwood's thesis came under criticism from John Andrews in 1998. Andrews primarily addressed issues tangential to Plumwood's main contention, such as her critique of moral hierarchy, her relatively broad interpretation of intentionality, her discussion of machine intentionality, and her use of the concept of agency (Andrews 1998: 381–392). In the end he made no substantial criticism against either the concept of panpsychism or its use as a basis for environmental ethics. In a footnote, Andrews touched on the heart of the matter, the conflict of worldviews:

Where parties to a philosophical dispute disagree over the fundamental intuitive touchstones to which appeal should be made to test the adequacy of a claim, or theory, it becomes difficult to know how to proceed further. . . . I can imagine a stone as mindlike . . . or I can locate myself within a metanarrative that sees all nature as suffused with mindlike qualities—but [are these] appropriate to the way the world is or [are they] mere anthropocentric projection? What other way of answering this do we have other than to appeal to the very fundamental intuitive touchstones that are at stake? (395)

The answer, it would appear, is “None.” In fact, Andrews' use of the phrase “the way the world is” betrays his own objectivist outlook. To suggest that reality exists in only one way, that there is only one absolute truth to the world, is to adopt a very restricted and almost naive form of realism. The nature of reality has changed countless times and will change countless more. Reality is as varied as the sensitivity and subtlety of the mind that perceives it.

Plumwood responded ably to Andrews in the same journal issue (see her 1998). But she did appear to soften her stance on panpsychism. She rearticulated her “thesis that elements of mind (or mindlike qualities) are widespread in nature” (1998: 400). But she disavowed the view that Andrews attributed to her, namely that “each natural entity has its own distinctive mindlike properties,” her concern being on the terms ‘each’ and ‘own’. In a footnote she added the following:

I would not be happy to say of such items as mountains that they ‘have minds’ or ‘have mental states,’ . . . although I am willing to say that mountains express or exhibit elements of mind, or have mind-like qualities. (417)

Most definitively, she labeled as “absurd” the view “that each *individual* natural entity has its own distinctive kind of mind” (400).

Again, it is not at all clear why such a view is absurd. Plumwood merely assumes this to be the case. Of course, if one were to define mind as something like a fully developed, fully aware, human-like consciousness, few would accept it. But given that there is no consensus on such a definition of mind, there is no a priori reason why it would be absurd. Furthermore, Plumwood is suggesting that perhaps *not every* individual thing has elements of mind, but if so, which do and which do not? And why? Drawing such distinctions presents major ontological problems. It would seem that her theory of intentional panpsychism requires further elaboration before it can be fully evaluated *as a theory of mind*. Yet her view, even loosely articulated, has value *as an ethical theory*. As she said, the stance of intentional panpsychism is one of “openness to or recognizing the intentionality [or mind-like-ness] of the world” (403). Accordingly, we must be “prepared to recognize the other’s intentionality as a necessary condition for developing richer experiential, communicative and ethical frameworks and relationships” (*ibid.*). Such an attitude can clearly be adopted even in the absence of a fully articulated theory of mind.

Plumwood’s *Environmental Culture* (2002) includes two chapters on the subject, the first (“Towards a Dialogical Interspecies Ethics”) largely a repeat of her 1998 article. The other chapter (“Towards a Materialist Spirituality of Place”) includes no specific mention of panpsychism but hints at it with talk of nature “participating in mindfulness” (2002: 223), of “a fusion of mind and matter” (226), and of “the world as another agent or player” (227).

The latest development of ecological panpsychism is in the work of the Australian eco-philosopher Freya Mathews. In her article “The Real, the One and the Many in Ecological Thought” (1998) and in her book *For Love of Matter* (2003), she develops a sympathetic metaphysical system in which all things participate in the Mind of the cosmos. She criticizes conventional materialism as being unable to account for the reality of the world: “. . . the *deanimated* conception renders *realism* with respect to the world untenable” (2003: 29). She proceeds to adopt a form of panpsychism and then articulate a metaphysical worldview that follows from it, emphasizing “encounter” and “eros” as ways of sympathetically interacting with nature. Her work is notable in that it moves beyond mere analysis; Mathews sees both an ecological and axiological imperative in viewing the world from the panpsychist perspective.

9.4 Recent Thoughts, Pro and Con

Apart from the relatively isolated examples mentioned in this chapter and in chapter 7, panpsychism rarely engaged philosophical discourse in the twentieth century. Its supporters wrote their defenses, but few seemed willing or able to refute them. There was a minor flurry of articles in the early years of the century,¹⁶ but this seems to have had limited effect. The general feeling appears to have been that panpsychism was such an (apparently) minority view that it could be dismissed with a passing comment, or conveniently ignored. Hence the major portion of the twentieth century passed without significant discussion or debate.¹⁷

The relative silence by critics of panpsychism was broken in 1967 with the initial publication of the *Encyclopedia of Philosophy*.¹⁸ General editor Paul Edwards assigned himself to write the putatively objective entry on panpsychism. In one of the more astounding examples of biased writing in modern philosophy, Edwards ridicules panpsychism at every turn. He makes the panpsychist philosophers out to be fools, charlatans, or mystics, incapable of grasping the most basic elements of common sense. He calls panpsychism “unintelligible” and a “meaningless doctrine.” He makes ludicrous arguments centered on “the ‘inner’ nature of a tennis ball.” Sneering at any supposed consequences of the view (“Is a bricklayer who has been converted to panpsychism going to lay bricks more efficiently?” (1967b/1972: 30)), he likens its adherents to religious fanatics. And Edwards gratuitously allows that panpsychism may be useful “in a pedagogical sense, [to] help school children to understand what a chemist is talking about” (ibid.).

Hartshorne (1990: 393) called Edwards’ piece “astonishingly biased,” and “only trivially informative.” Griffin (1998: 96) called it “irresponsible” and took Edwards to task for virtually ignoring the process view of Whitehead and Hartshorne. Unfortunately for intellectual integrity, this article served as the official view on panpsychism for more than 30 years, until the 1998 release of the *Routledge Encyclopedia of Philosophy*.¹⁹ As bad as Edwards’ piece was, it did serve (until recently) as a nominally useful starting point for the study of panpsychism—though it mentions less than half of the relevant philosophers and thinkers. And it did present one of the first detailed sets of arguments against panpsychism; see the discussion in the following chapter.

Anti-panpsychist sentiments have recurred sporadically since then. Madden and Hare, in their discussion of James’ theory of causality (in which volition or will is required for direct awareness of causal power), referred to panpsychism as “an unmitigated disaster in the eyes of a great

many contemporary philosophers" (1971: 23). Popper (1977: 69, 71) denounced it as "fantastic" and "baseless," and McGinn (1997: 34) called it "metaphysically and scientifically outrageous"; to their credit, both Popper and McGinn gave reasoned arguments on behalf of their view.²⁰ Madell (1988: 3) observed, misleadingly, that panpsychism "has [no] explanation to offer as to why or how mental properties cohere with physical"; this may be true of panpsychism per se, but any intelligible version of the view includes a positive theory of mind that *does* offer to explain the connection between mind and matter. Humphrey perpetuated this misleading view of panpsychism, calling it "one of those superficially attractive ideas that crumble to nothing as soon as they are asked to do any sort of explanatory work" (1992: 203).

Strawson considered "briefly" (but only briefly) the topic of panpsychism in his 1994 book *Mental Reality*. He viewed panpsychism as a desperation move, justified only because of the inherent difficulties in understanding the nature of conscious experience. Strawson allowed that one version of panpsychism ("experience-realizing"), in which material reality is primary to experiential reality, "seems coherent enough" (76), but apparently not coherent enough to merit further discussion.²¹

More recently, Searle debated the topic with Chalmers in the *New York Review of Books*. Without supplying substantive arguments, Searle dismissed panpsychism out of hand, calling it "breathhtakingly implausible" and "absurd" (1997: 48) and adding that "there is not the slightest reason to adopt panpsychism" (50).²² Evidently, Searle has been granted more penetrating insight into the nature of mind than many of the greatest philosophers in history. More likely, of course, he is simply unaware of the extensive body of writings on the subject.



In spite of this occasional hostility toward panpsychist theories over the past three decades, a few individuals have continued to put forth sympathetic views. Some, like Birch, Sprigge, Plumwood, and Mathews, did so within the field of environmental philosophy; others within the realm of more conventional philosophy. In 1979 Thomas Nagel published *Mortal Questions*, which included a chapter titled "Panpsychism." As Nagel wrote, "panpsychism appears to follow from a few simple premises, each of which is more plausible than its denial" (1979: 181). The premises are these:

- (1) physical reality consists solely of rearrangeable particles of matter;
- (2) mental states are neither reducible to, nor entailed by, physical states;

- (3) mental states are real; and
- (4) there are no truly emergent properties.

This argument constitutes perhaps the first analytic argument on behalf of panpsychism, and the first in at least a century to arrive at it deductively. The only other well-developed positions of the twentieth century—those of Whitehead and Teilhard²³—were based on initial, radical metaphysical conjectures rather than commonly accepted premises.

Following Feigl and Koestler, Nagel equivocates. On the one hand he finds the four premises individually compelling. However, after some discussion he concludes “I . . . believe that panpsychism should be added to the current list of mutually incompatible and hopelessly unacceptable solutions to the mind-body problem” (ibid.: 193). And yet at the end he suggests that a form of panpsychism might be viable, one in which the “[material] components out of which a point of view is constructed would not in themselves have to have points of view” (194). In other words, atoms may somehow carry with them “proto-mental properties” which, though not mental, combine to create experience and points of view. (This is a kind of atomistic parallelism that recalls Clifford’s mind-stuff theory.) Nagel thus leaves the door open, but offers no positive theory as to how it may be realized.

He continued to be sympathetic in *View from Nowhere* (1986), though without significantly developing his ideas on the matter. He noted in the introduction that “the general basis of this [mental] aspect of reality is not local, but must be presumed to inhere in the general constituents of the universe and the laws that govern them” (8). In a nod to the philosophical viability of such a radical notion as panpsychism, Nagel commented that “nothing but radical speculation gives us a hope of coming up with any candidates for the truth” (10) about mind and body. He advocated a neutral monist, dual-aspect theory of mind, which is necessarily close to the panpsychist view. In a short section titled “Panpsychism and Mental Unity” he acknowledged as much, but then added that the combination problem—the accounting for mental unity—is a major concern. But he left it at that.

Nagel addressed the topic a third time in his 2002 book *Concealment and Exposure*. This book includes the essay “The Psychophysical Nexus,” in which he argues for the irreducibility of consciousness. After rejecting both substance dualism and property dualism, Nagel explored alternative solutions that would account for the “necessary connection” between mind and body. His preferred solution—a kind of non-reductive, dual-aspect neutral monism—again appears amenable to a panpsychist interpretation. He

noted similarities to the work of Spinoza and Russell, observing that the latter “holds that physics contains nothing incompatible with the possibility that all physical events, in brains or not, have an intrinsic nature of the same general type” (2002: 209).

Near the end of the essay Nagel tackled the sticky issue of how far down, below the level of the brain, one might be able to push this dual mind-matter relation. He noted that the brain must consist of numerous conscious subsystems that somehow combine to form the complex, unified whole, and that, because of this fact, we are logically compelled to consider pushing the mind-matter duality down to the lowest levels of matter:

. . . the active brain is the scene of a system of subpersonal processes that combine to constitute both its total behavioral and its phenomenological character. . . . This differs from traditional functionalism...in that the ‘realization’ here envisioned is not to be merely physiological but in some sense mental all the way down. . . . (230)

But he declined to elaborate:

I leave aside the question of how far down these states might go. Perhaps they are emergent, relative to the properties of atoms or molecules. If so, this view would imply that what emerges are states that are in themselves necessarily both physical and mental. . . . If, on the other hand, they are not emergent, this view would imply that the fundamental constituents of the world, out of which everything is composed, are neither physical nor mental but something more basic. (231)

This might appear suggestive of panpsychism, but Nagel immediately denied this possibility: “This position is not equivalent to panpsychism. Panpsychism is, in effect, dualism all the way down. This is monism all the way down.” (ibid.) And yet, it is clear that there are many forms of dual-aspect monism that are panpsychist, so simply labeling panpsychism as “dualism” does not negate the possibility that Nagel’s own system could consistently be conceived as a form of panpsychism. The most that Nagel will allow is that all matter may have “mental potentialities,” which are “completely inert in all but very special circumstances” (234). Whether the concept of ‘universal inert mental potentiality’ qualifies as a form of panpsychism is clearly open to debate.

Panpsychism, in the guise of animism, entered somewhat of a popular sphere with the release of Berman’s book *The Reenchantment of the World* (1981). In a rather simplistic depiction of Western civilization, Berman argues that a fundamental shift in consciousness occurred around the time of Descartes. Our original mode of interaction, “participating consciousness” (defined roughly as an animistic, holistic, magical way of thinking), changed over to a mechanistic, non-participatory mindset. This modern

form of consciousness “recognizes no element of mind in the so-called inert objects that surround us. . . . One of [my] goals . . . is to demonstrate that it is this attitude, rather than animism, which is misguided.” (69–70)

Berman recounts how Newton and Descartes succeeded in overthrowing the final remnants of animistic and occultist thinking. He then claims that participating consciousness reemerged only relatively recently, in the ideas of quantum mechanics: the uncertainty principle, loss of classical determinism, Wheeleresque interactions between observer and observed, and even panpsychist attribution of mind to quantum particles.

The animistic dimension of participation finds support, Berman explains, in the work of the psychologists Karl Jung and Wilhelm Reich. They held that the mind is in the body and that material objects possess a kind of indwelling unconsciousness. People comprehend with their entire physical being; the brain is merely a “thought amplifier” that accentuates what the body knows. Reich’s work is particularly relevant:

Reich supplies that missing link [between animism and participation]. For if the body and the unconscious are the same thing, the permeation of nature by the latter explains why participation still exists, why sensual knowledge is a part of all cognition, and why the admission of this situation is not a return to primitive animism. (180)

Berman concludes with a fairly detailed look at the ideas of Bateson as a viable path to recovery of the “alchemical world view.” There are in fact some strong elements of panpsychism in Bateson, as discussed previously, but Berman only indirectly alludes to these.

In 1983 the philosopher Timothy Sprigge published *Vindication of Absolute Idealism*, in which he argued somewhat obtusely for an idealist form of panpsychism. Sprigge (1984, 1991a,b, 1998a) has been one of few recent philosophers to regularly and sympathetically address panpsychism, but overall his theory seems not to have engaged discussion to the degree that, for example, the traditional process view has. On the negative side, it may be seen to perpetuate the mistaken view that panpsychism is necessarily a form of idealism.

An important development came in 1988 with the publication of *The Reenchantment of Science*, David Ray Griffin’s compilation of articles on “constructive postmodernism” in science. Griffin himself contributed two of the more significant pieces: “Introduction: The Reenchantment of Science” and “Of Minds and Molecules.” The former presents a series of arguments showing that the modernist ontologies of materialism and dualism are both unintelligible, and in fact have led to the disenchantment of

both science and the natural world. The latter offers up the concept of pan-experientialism as a new postmodern paradigm.

Griffin is a process philosopher and theologian, directly in line with the views of Whitehead and Hartshorne. He has emerged, with the passing of Hartshorne, as the leading process philosopher emphasizing the panpsychist aspects of Whitehead's ontology. His work resulted in another important article in 1997 ("Panexperientialist Physicalism and the Mind-Body Problem"), and a major milestone in panpsychist philosophy: the 1998 book *Unsnarling the World-Knot*, discussed below.²⁴



Regarding new positive approaches to a panpsychist theory of mind, Skrbina gave a talk in 1993 in which he introduced a new argument for panpsychism²⁵ that made use of concepts from chaos theory and nonlinear dynamics (Skrbina 1994; significantly elaborated on in *Participation, Organization, and Mind*, Skrbina 2001). Following (independently) the approach of Churchland (1986), Skrbina proposed that the brain be viewed as a single interconnected feedback system that is describable by a classical mathematical technique known as phase-space analysis. Any dynamical system, no matter how complex, can be depicted in its entirety by the movement of a *single point* in a multi-dimensional mathematical space. This is an established scientific tool, and is employed in a number of technical areas.²⁶

In the case of the brain, Skrbina proposed—as did Churchland (1997)—that the synapse voltage serve as the primary element in defining the phase space; this, it is suggested, captures essential energy dynamics at a level appropriate for grasping something of the mind-brain relationship. The physical brain state is thus defined as the instantaneous, simultaneous value of all synapse voltages. These myriad voltages are represented by a single point in phase space, which depicts the dynamically changing states of the brain. As the neural voltages change in real time, the phase space point moves correspondingly through a multi-dimensional phase space.

Skrbina then conjectured that this point be associated with the "unity point" of consciousness. This leads to a number of striking correlations between phase space dynamics—in particular, the nature of the so-called strange attractor—and common-sense notions of the behavior of mind. For example, it helps to explain how the processes of mind can be unpredictable in detail, and yet demonstrate long-term stability—as shown in the notion of personality. It suggests a novel reading of the notion of causality

between mind and brain.²⁷ It offers one of the first concrete definitions of qualia; different regions of phase space would correspond to different qualitative experiences. And it provides a reasonable accounting for both “mental unities”: that of our instantaneous unified conscious experience, and of our singular, quasi-stable personality.

More important for the present study, it naturally leads to a system of panpsychism. Since all physical systems are describable in terms of the motion of a point in phase space, and if this point is to be interpreted as the “consciousness” or mind of the system, then clearly *all* physical systems, i.e. all real objects and collections of objects, possess a mind in an analogical sense. Mind is thus viewed as existing in a non-physical space (described by us in terms of phase space) that is proportional in size and complexity to the size and complexity of the corresponding physical system. This conception in turn suggests a new reading of the notion of *emergence* of mind, one that is compatible with panpsychism.²⁸



Philosophical debate on panpsychism was given a boost in 1995 with the publication of an article by Chalmers titled “Facing Up to the Problem of Consciousness.” Chalmers offered an outline of a nonreductive, dual-aspect theory of mind based on a Batesonian reading of the concept of information. Broadly interpreted, information consists of any change in a physical system, and would thus appear to be omnipresent; as Chalmers says, “information is everywhere.” “An obvious question,” he adds, “is whether *all* information has a phenomenal [i.e. mental] aspect” (1995: 217)—the answer to which, he implies, is Yes. Without mentioning panpsychism by name, he cautiously suggests that “experience is much more widespread than we might have believed.” The panpsychist conclusion is “counterintuitive at first, but on reflection . . . the position gains a certain plausibility and elegance.”

Chalmers significantly elaborated his theory in *The Conscious Mind* (1996), though retaining his ambivalence toward panpsychism. He dedicated eight or nine pages to addressing the question “Is experience ubiquitous?” (293–301). His approach was focused on the ancient Continuity argument; he observed that “there does not seem to be much reason to suppose that phenomenology should wink out” (294) as one descends the ladder of physical complexity. He concluded that it is reasonable to assign experience and even consciousness to a simple feedback system like a thermostat. Chalmers correctly noted that there are no knockdown arguments

against this view: "Someone who finds it 'crazy' to suppose that a thermostat might have experiences at least owes us an account of just *why* it is crazy." (295) As to even simpler physical systems, like rocks and electrons, he allowed that "if there is experience associated with thermostats, there is probably experience *everywhere*" (297).

Following in the footsteps of Feigl, Koestler, and Nagel, Chalmers seesaws between endorsing a panpsychist view and hedging his bets. He seems unsure how to label the inner nature of simple physical objects: "I would not quite say that a rock *has experiences*, or that a rock *is conscious*. . . . It may be better to say that a rock *contains* systems that are conscious: presumably there are many such subsystems. . . ." (ibid.) 'Mind' is not the right word either (see 300). He notes that he "[does] not generally use the term" panpsychism, chiefly because that view (he claims) typically implies a system in which simple and fundamental experiences are summed together to form more complex, higher-level experiences; presumably he is concerned here with the combination problem that Seager and others have argued is a major roadblock to a viable panpsychism. (Without supplying specifics, he says on p. 299 that "complex experiences are [perhaps] determined more holistically than this.") "With these caveats noted," Chalmers writes, "it is probably fair to say that the [not 'my?'] view is a variety of panpsychism. I should note, however, that panpsychism is not at the metaphysical foundation of my view. . . . Panpsychism is simply one way that [things] might work. . . . Panpsychism is just one way of working out the *details*." (ibid.) Panpsychism is "surprisingly satisfying" (298), but its viability "seems to be very much open" (299). It is a view Chalmers advocates (340), yet he is "unsure whether the view is true or false" (357). Yet on any objective reading of the dual-aspect information theory it seems inevitable. One is tempted to ask, in just what *other* ways might one reasonably work out the details?

Chalmers' view of mind is closely linked to the panpsychism of Spinoza, Bateson, and Bohm: Spinoza's dual-aspect naturalism, with mind as the inner and physicality as the outer; Bateson's "message" and "information" as the basis for ubiquitous mind (see his 1970 work); and Bohm's "information content" as consciousness, present in all physical systems (see his 1986 work). Yet Chalmers seems unaware of these links; he does not cite Spinoza, only once mentions Bateson, and discusses Bohm only in context of his quantum theory. Had he examined these connections, he may have been less hesitant to adopt the panpsychist perspective.

If Searle (1997) has one valid point, it is that Chalmers is unwilling to follow through explicitly on the consequences of his own theory: information

is postulated to have a phenomenal aspect, and information is everywhere, then so is experience. If Chalmers is only suggesting that information is the basis for experience, or only suggesting that it be correlated with consciousness, then he really is putting forth no definitive theory of mind, beyond what Bateson and Bohm have done.

Bill Seager explicitly addressed the topic of panpsychism in the same 1995 issue of the *Journal of Consciousness Studies* that Chalmers wrote in, as a reply to Chalmers' piece. For Seager, the combination problem was a showstopper to any viable reading of panpsychism.²⁹ But he saw in quantum theory a way around this problem, in the phenomenon of superposition. Superposed combination occurs in an instantaneous and non-mechanistic fashion, and thus could conceivably account for the combining of elements of proto-mind into macro-scale mental systems.³⁰ This concept, combined with the recent efforts of Bohm, Hameroff, Penrose, and others to articulate a positive theory of mind in terms of quantum mechanics, is among the more promising scientific approaches toward panpsychism at present.



Four other significant books addressing panpsychism have emerged since the mid 1990s.

In *The Spell of the Sensuous* (1996), David Abram argued from a phenomenological basis for a return to an animistic worldview as a remedy for the radical separation of humanity from nature, a separation resulting from Cartesian and mechanistic philosophies. More poetic essay than detailed philosophical inquiry, Abram's objective was simply to provoke "new thinking" among intellectuals, and to suggest a new conceptual approach "to alleviate our current estrangement from the animate earth" (1996: x). Panpsychist outlooks in fact have significant potential to alter our philosophical worldview, as they get to the root of the inert-matter view held by mechanists. To his credit, Abram recognized this; however, he failed to address its substantial philosophical underpinning. Of all the Western philosophical schools addressing the issue of panpsychism, phenomenology is among the least relevant—at least, as found in the writings of its leading advocates.

Far more substantial, from a philosophical standpoint, is Griffin's *Unsnarling the World-Knot* (1998). Culminating a series of articles (Griffin 1977, 1988a,b, 1997), he gives a full and scholarly exposition of the process view of panexperientialism. Along the way he provides a detailed critique of both materialism and dualism, observing that the panpsychist

approaches have the potential to resolve a number of otherwise intractable problems. Even though the emphasis throughout is on the process view, much of Griffin's analysis applies to panpsychism generally. As the first book-length treatment of the subject, it is an undisputed milestone in the history of panpsychism.

Following Leibniz, Whitehead, and Hartshorne, Griffin offers a contemporary reading of the process theory of mind and its panpsychist implications. His central concerns are the meaning of the compound individual and the nature of freedom. 'Compound individual', a term of Hartshorne's, means an "organism containing organisms" (1936/1972: 54)³¹—that is, a sentient individual composed of lower-order individuals such as cells, molecules, atoms, and ultimately "occasions of experience."

This of course gets back to the issue of aggregates, as elaborated in the previous discussions on Leibniz and Hartshorne. As we saw, the earlier aggregationists had to invoke unsatisfying metaphysical assertions to account for the restricted appearance of the dominant monad and its unifying power. Griffin attempts to further illuminate the matter, though with arguable success. Ultimately he runs up against the aggregationists' double bind: (1) How do low-order experiences sum up to form a single, complex, high-order experience (i.e. the combination problem)? (2) What is ontologically unique about mere aggregates that differentiates them from true individuals?

First take the combination problem: how the numerous occasions of experience within (say) the human body are unified into a single, but complex, conscious entity. On the process view, occasions begin in a subjective or experiential mode, exist for a short period of time, and then pass away into an objective state. The objective mode is in turn the ground or basis for the next moment of subjectivity. Somehow, one (or one series) of these occasions becomes dominant and serves as the integrator of the other sub-experiences. This dominant experience is taken as the consciousness or mind of the person. Specifically, Griffin relates the mind to the experiences of the neurons:

The brain at any moment is composed of billions of neuronically occasions of experience, whereas our conscious experience at any moment belongs to a 'dominant' occasion of experience, which is a new higher-level 'one' that is created out of the 'many' neuronically experiences. . . . (1998: 179)

The unification occurs only *after* the neuronal occasions are completed, and in their objective state of being. Then the dominant experience comes along and unifies the many objective modes into a single, high-level, moment of conscious experience. It is, Griffin says, "only in the objective

mode that they are a ‘many becoming one’” (ibid.: 180). The whole process is endlessly repeated, on very short time intervals: neuronic experiences, becoming objective modes, becoming unified by a dominant experience into a single conscious moment.³² The string of conscious moments accounts for our colloquial “stream of consciousness.”

We do not know much about this dominant experience, other than that it, unlike the Leibnizian monads, is subject to causal influence. It is both caused by the antecedent objective modes of the neurons, and is causal on them in its power to unify. This two-way causality between the dominant experience, or mind, and the sub-experiences of the brain is the basis for Griffin’s interpretation of freedom. And yet we have not much in the way of theoretical explanation about how or why this happens. The originator of this notion, Whitehead, provided little definitive elaboration.

Then there is the second part of the bind: Why don’t all collections of occasions have unified experiences? From a theoretical basis there appears to be no clear reason why only certain systems come to possess a dominant experience. Griffin implies that there is *no* theoretical basis for determining this a priori. Following Hartshorne, he believes that it is strictly an “empirical question” (186). Apparently this distinction between aggregates and true individuals, which Griffin describes as “crucial,” is simply a brute fact of existence.

And yet *nothing of importance seems to turn on this fact*. What if all aggregates possessed dominant experiences? What if the nature of this dominant experience was determined by the nature and dynamics of the aggregate—such factors as the complexity of its hierarchy, the speed at which it interacted, and the quantity of internal sub-experiences? Would we think less of our own minds? Or of the theory itself? Again, this whole distinction seems entirely too *ad hoc*; it comes off as a convenient means to deny mind to things that “obviously” do not have it. If there is no theoretical basis for denying this power of unification to all aggregates—and there is nothing in Leibniz or Whitehead that indicates so—then it would seem most reasonable to accept the full implications of the theory.

In the end, Griffin does an outstanding job of elaborating the traditional process theory of mind and the general case for panexperientialism, though he is bound by the inherent limitations of that view. More broadly he succeeds in presenting the case for panpsychism with respect to materialism and Cartesian dualism, capturing many aspects of the contemporary debate (such as it is).

Two recent books of note are Christian De Quincey’s *Radical Nature* (2002) and David Clarke’s *Panpsychism and the Religious Attitude* (2003).

De Quincey—adopting, like Griffin, the process view of the world—gives a concise reading of panpsychism throughout history, relating it at many points to the insights of Whitehead and Hartshorne. *Radical Nature* tackles many issues relating to the origins of the panpsychist worldview, and gives the most readable and thorough accounting of it since Paulsen's *History of Philosophy* in 1892. Excepting perhaps the present work (an elaboration of Skrbina 2001), no other book offers a better overview of the complete phenomenon of panpsychism in the West.

Clarke—taking yet another process perspective—presents an abbreviated overview of the concept of panpsychism, and seeks to identify it as “the most plausible justification that can be given of religious belief in the eternity of mentality” (2003: 6). Clarke is a hard-line Whiteheadian. He denies the intelligibility of non-process forms of panpsychism, and relegates them to a virtual non-existence; he claims, unjustifiably, that “the principal figures in the panpsychist tradition have been careful to exclude such aggregate objects as planets, rocks, and artifacts” (ibid.: 3). Given his very cursory treatment of all panpsychists before Leibniz, and his quick leap to the twentieth-century figures of the process school, Clarke's statement is perhaps not surprising. This book again underscores the dominance that process philosophy seems to hold over the discussion of panpsychism; perhaps the present work will serve to diversify perspectives on the subject.



To summarize the two preceding chapters: As philosophy moves into the 21st century, we may distinguish five viable approaches to panpsychism: (1) that of *quantum physics*, as initiated by Haldane in the 1930s and elaborated by Bohm, Seager, Hameroff, and others, (2) that of *information theory*, as developed by Bateson, Bohm, and Chalmers,³³ (3) that of *process philosophy*, originating from ideas of Bergson and James, articulated in detail by Whitehead and further elaborated by Hartshorne, Griffin, and others, (4) that of *part-whole holarchy*, as envisioned by Cardano and developed by Koestler and Wilber; and, most recently, (5) that of *nonlinear dynamics*, as begun by Peirce and articulated by Skrbina.

All five areas are under active development. In many aspects they are complementary, or at least potentially so. This suggests that there may yet emerge a more comprehensive unified theory of panpsychism.

Panpsychism is a distinctive metaphysical worldview. As such, it stands in an awkward relationship with conventional positivist, mechanistic thinking. It can seem inconsequential, or even incomprehensible. And yet these

are the very hallmarks of new worldviews; anything less would imply a superficial or minor revision. Panpsychism offers a fundamental challenge to emergentism and mechanism. And as Nagel, Searle, and others have noted, the problems of mind and consciousness are so difficult, so intractable, that “drastic actions” are warranted—perhaps even as drastic as panpsychism.

The final step, then, is to consider as a whole the arguments for and against panpsychism, assessing each in light of a deeper sensitivity to the nature of metaphysical worldviews. We may then begin to see, and better appreciate, the broader implications of the panpsychic view.

10 Toward a Panpsychist Worldview

10.1 An Assessment of the Arguments

To reiterate a point I made in chapter 1: Panpsychism is a meta-theory of mind. It is a statement about theories of mind, not a theory in itself. It only claims that all things (however defined) possess some mind-like quality; it says nothing, *per se*, about the nature of that mind, nor of the specific relationship between matter and mind.

This point lies behind many of the criticisms directed at panpsychist philosophies. The view that it “crumbles to nothing” (Humphrey) when pressed to do explanatory work is a consequence of the lack of a corresponding concept of mind—a point, in fact, on which several noted panpsychists are guilty. To be fully intelligible, the panpsychist outlook must be joined with a positive theory of mind—yet, this is *not* to say that, lacking such specifics, the concept is useless. Any articulation of panpsychism carries broad metaphysical and axiological implications.

An assessment of the intelligibility of panpsychism starts from a review of the established arguments for and against it. These arguments center on fundamental aspects of epistemology. We can identify four basic ways of acquiring knowledge about mind: (1) *empirically*, by observation and experiment, (2) *rationally*, through a process of reason, (3) *intuitively*, as a kind of “direct seeing” and introspection, and (4) *mystically*, through some kind of divine revelation or meta-rational insight. Even though some panpsychist philosophers (Fechner is the prime example) border on mysticism, this fourth way of knowing can be largely set aside for present purposes. The other three approaches, though, are involved with virtually every conception of mind. Knowledge of one’s own mind comes from introspection, and this is the starting point for any theory. Empirical data are often involved. And the act of formulating any theory, or any argument, is in itself a rational process. It is also true that there are arguments that are *primarily*

empirical, or *primarily* rational, but none that are exclusively so—at least among those considered in the present work.

In the preceding eight chapters I have attempted to demonstrate something of the breadth and depth of panpsychist thought over the past 2,600 years. In the process of doing so, I have identified several distinct arguments in support of panpsychism. To briefly recapitulate them:

(1) Argument by Indwelling Powers—all objects exhibit certain powers or abilities that can plausibly be linked to noetic qualities.

(2) Argument by Continuity—a common principle or substance exists in all things; in humans, it accounts for our soul or mind, and thus by extrapolation it infers mind in all things. Also expressed as a rejection of the problem of “drawing a line” somewhere, non-arbitrarily, between enminded and supposedly mindless objects.

(3) Argument from First Principles—mind is posited as a fundamental and universal quality, present individually in all things; this is a kind of “panpsychism by definition.”

(4) Argument by Design—the ordered, complex, and/or persistent nature of physical things suggests the presence of an inherent mentality.

(5) Argument from Non-Emergence—it is inconceivable that mind should emerge from a world in which no mind existed; therefore mind always existed, in even the simplest of structures. Also expressed as “nothing in the effect that is not in the cause.” Sometimes called the “genetic” argument—see below.

(6) Theological Argument—God is mind and spirit, and God is omnipresent, therefore mind and spirit are present in all things. Or, all things participate in God and thus have a share in spirit.

(7) Evolutionary Argument—A particular combination of Continuity and Non-Emergence arguments. Claims that certain objects (e.g. plants, the Earth) share a common dynamic or physiological structure with human beings, and thus possess a mind; and, points to the continuity of composition between organic and inorganic substances (i.e. anti-vitalism).

(8) Argument from Dynamic Sensitivity—The ability of living systems to feel and to experience derives from their dynamic sensitivity to their environment; this holds true for humans and, empirically, down to the simplest one-celled creatures. By extension, we know that all physical systems are dynamic and interactive, and therefore all, to a corresponding degree, may be said to experience and feel. Additionally, other aspects of dynamical systems theory supports the panpsychist view (a combination of the Indwelling Powers, Continuity, and Non-Emergence arguments).

(9) Argument from Authority—Not a formal argument, but a potentially convincing claim nonetheless. Writers as diverse as Bruno, Clifford, Paulsen, and Hartshorne have cited the large number of major intellectuals who expressed intuitive or rational belief in some form of panpsychism. And in fact the whole of the present work makes this claim.

Two further matters regarding these arguments deserve mention here. First, most of them (except perhaps 3, 6, and, indirectly, 9) rely on an *analogy with the human*. The root assumption is that humans possess a mind, and this fact is taken in connection with other points to show that all things possess mind. Analogy is made by common abilities, or common underlying substance, principles, or structure. So the claim that an individual is making an “argument by analogy” for panpsychism may be true but is insufficiently vague; further articulation is required. Second, these arguments address in different degrees the notion of a positive theory of mind. To say that mind is a *pyr aeizoon* or that it derives from an atomic swerve is to provide a positive (if not entirely convincing) account of mind. To say that mind “cannot have emerged” is an argument for panpsychism, but one that offers no explanation of the nature of mind. Epicurus, therefore, presents us with both a claim and a meta-claim: mind derives from atomic swerve, and mind cannot have emerged. When Fechner tells us that the structure of the Earth is like the structure of the human body, and thus that each must possess *eine Seele*, he is not really providing a positive theory of mind; implicitly he may be suggesting that mind is a correlate of physical structure, but he gives no positive accounting of this. Both the arguments and the meta-arguments have validity, but in different ways. They vary considerably in their ability to do explanatory work, and this must be taken into account in any discussion of such arguments.



The above nine arguments constitute the historical case for panpsychism. Recent studies of the subject have identified arguments that are nominally different but substantially the same. Edwards (1967), for example, establishes two general categories of arguments: (1) those that presuppose a specific metaphysical or epistemological system (which corresponds to the First Principles argument above) and (2) those that are purely empirical or inductive. He then immediately disregards arguments of the first type, claiming that they cannot be assessed without a detailed inquiry into the metaphysical system itself. This is perhaps true, but it neatly dodges a fundamental philosophical problem, namely, on what basis can we accurately assess

other worldviews? From within a materialist paradigm, all non-materialist metaphysics will seem incomprehensible. As Edwards clearly places himself in the materialist tradition, he is subject to this inherent bias—as evidenced by the overall hostile tone of his piece.

Of the second category, Edwards identifies two sub-groups. The first of these is the class of “genetic” arguments—the term arising from the genesis or emergence issue. This sub-group is essentially a class of Non-emergence arguments, as cited above (item 5). Edwards presents two examples of such arguments—Paulsen, and, of all people, Waddington—and then proceeds to refute them (more on his refutation below). The second sub-group he calls “analogical” arguments, which are based on the physical (compositional) or structural similarity between humans and other natural objects. This corresponds to the Continuity argument above (item 2). Edwards correctly cites Paulsen and Fechner as relying on this approach.

Hartshorne and the process philosophers have made many arguments, including some not mentioned above, for their panpsychism (psychicalism, panexperientialism). Griffin (1998: 89–92) supplies the best and latest summary. He lists nine reasons, though some pertain only to the process view, and others only reply to certain restricted criticisms and thus do not qualify as general arguments for panpsychism. Two of his points, though, condense and explicate some fairly common implications, and thus may be considered as distinct arguments. To the above list we may add the following:

(10) Panpsychism “truly naturalizes mind,” because it deeply integrates mind into the natural order of the world. Furthermore it does so in a way that no other theory does. Though this basic feeling has been expressed by others, it has not been presented as a core argument. I will designate this as the Naturalized Mind Argument.

(11) In light of “the ‘terminal’ failure of the approaches built on the Cartesian intuition about matter,” panpsychism stands as the most viable alternative. This is an important point, and one that has been neglected in the past. If intensive critical inquiry of dualism and materialism over the past, say, few hundred years has failed to produce a consensus theory of mind, then it stands to reason that a third alternative like panpsychism, in some positive formulation, should gain in viability. This “negative argument” for panpsychism may be called, for want of a better name, the Last Man Standing Argument.

Griffin’s other arguments include the following contentions about panpsychism/panexperientialism: (1) It is a “naturalistic form of realism.” This points to Whitehead’s view that experiences are actual, objective enti-

ties. It also addresses Griffin's contention that panpsychism is a form of realism, not idealism. But, in itself, this claim, though perhaps true, does not provide a general and compelling argument for panpsychism. (2) It is "truly monistic (in the qualitative sense)." Even though the process philosophers distinguish between true individuals that are capable of experience and aggregates that are not, Griffin insists that his is essentially a monistic ontology. Apart from this aggregate/individual issue, the claim that panpsychism or panexperientialism is monistic is not a general argument for it. This point has validity only for someone who holds that any viable theory of mind must be monistic. (3) It can "handle Berkeley's question—"What is matter in itself?"—without resort to idealism." This applies chiefly to the process view, and is only valid for those who insist that idealism is false. Again, not a general argument. (4) It provides "a new basis for the ontological unity of science." The unity Griffin refers to is the mind/matter unity found in all "true individuals." He presumes that this is a virtue, but this is so only if one is already convinced of the intelligibility and viability of panpsychism. (5) It must be evaluated only by examining "all the alternatives," i.e. considering all forms of panpsychism. Griffin rightly observes here that critics of panpsychism often take one or two weak forms of the thesis as representative of the position as whole. He naturally asks that critics give the process view full due. As has been noted, this issue is symptomatic of the failure to distinguish between panpsychism as a meta-theory on the one hand, and positive panpsychist theories of mind on the other. The point is taken, but this is again no argument per se. (6) Panpsychism "provides a concrete example of the 'radical speculation'" that Nagel (1986: 10), McGinn (1991: 104), Strawson (1994: 99), and others have called for. True, perhaps, but again this is a weak argument because of its non-specificity. Certainly not just any radical speculation is warranted, but rather speculation of the sort that has passed some tests of analysis, durability and authority. For that matter, in light of the present study it is even debatable how radical panpsychism is. (7) Finally, the "most important reason" is that panpsychism "provides hope of actually solving the mind-body problem." Dualism and materialism have utterly failed, and a positive theory of panpsychism/panexperientialism is the most viable alternative at this point. This is essentially a re-articulation of the Last Man Standing argument.

Seager's 2001 entry in the online Stanford Encyclopedia of Philosophy captures many of the arguments identified above. Seager starts from Edward's distinction between genetic and analogical arguments, and adds two further categories, "Intrinsic Nature" and "Methodological" arguments.

Genetic arguments are divided between “a priori” (e.g. Nagel), and “empirical” (e.g. Wundt, the evolutionary argument of Clifford). His discussion of analogical arguments focuses on quantum mechanics and information theory, as in the ideas of Bateson, Bohm, Chalmers, and Hameroff.

Seager’s third category identifies those theories that posit an “interior” or intrinsic nature to all things. This would seem to follow, by analogy, from our personal experience, and hence qualify as an analogical argument, but he breaks it out as a distinct category. Arguments by Leibniz, Whitehead, and Sprigge are included in this group. In terms of the arguments defined at the beginning of this chapter, an intrinsic nature could be part of continuity, design, or first principles arguments.

The fourth (methodological) category includes those arguments in which panpsychism is considered advantageous because it avoids the methodological problems of emergentism. As such, this is a re-articulation of the genetic or Non-emergence argument.

In sum, we can note that these eleven arguments for panpsychism overlap at certain points and thus are not absolutely distinct. Most panpsychists have employed more than one of these in making their case; and in nearly every instance they have combined elements of intuitive, rational, and empirical epistemologies. I again emphasize that virtually every argument is “analogical” in some sense, if only that it is based on first-hand knowledge of the existence and nature of one’s own mind.



Among this diversity of approaches, is it possible to articulate what might be described as a core argument for panpsychism? Consider the following:

Mind is real. I know this because I experience it first hand, and I hold it as an indubitable feature of reality (against eliminativism). Body is real. Rationally, intuitively, and empirically I have reason to believe that my body is a physical, material thing, situated in a physical universe (against pure idealism). There is thus both a material and a mental aspect to my existence; at my deepest, most fundamental level of being, I am a ‘thinking thing.’ Some aspects of my physical being are clearly not widely spread in this world—aspects such as ‘male’, ‘homo sapiens’, or ‘alive’. But my *material nature* seems to be universal. Similarly, some aspects of my mental being are unique to me, or to others of my kind. But this does not preclude the possibility that something like a *mental nature* is universal. For both rational and empirical reasons I am convinced that I am not ontologically unique. Since my mentality is fundamentally connected to, or related to, my material body, I have good reason to believe that mentality, in some form, is connected to all material beings. Therefore panpsychism must be true. QED.

Such an argument goes back to Plato's discussion in *Philebus*, but actually underlies a number of panpsychist positions. The argument is certainly disputable. Humans are, after all, in many ways utterly unique among natural objects; perhaps, as many suggest, we are unique in our possession of a mind. And yet even the barest application of the Continuity argument seems to overcome this barrier. If we grant that chimpanzees, say, or dogs, or dolphins possess even a *kind of* consciousness, or a *kind of* mind, then it seems that mind, as a *generalized phenomenon*, must exist in all things—because who could countenance drawing a line just *there*?¹

The most consistent counter-view, it seems, is the hard line case: humans alone have mind, humans are ontologically unique (perhaps because of their evolutionary status, or complex physiology, or divine creation), hence everything else in the cosmos is absolutely mindless. Descartes, John Eccles, and John Searle are among the few who make this claim. Apart from them, who will advocate such a view, and make a convincing claim of it?

10.2 Opposing Views

Opposing arguments have been historically very rare. Perhaps the first philosophical counter-argument came with Aquinas circa 1260 CE. As I discussed in chapter 2, Aquinas argued against hylozoism by redefining the concept of life. For him life was the power of self-generating motion, something that only plants and animals possessed. Clearly, of course, one can rule out hylozoism or panpsychism by appropriate definition. But this is avoiding the issue, and not addressing those lifelike or mind-like properties that may be shared by all things.

From Aquinas we must jump some 500 years to Kant's *Critique of Judgment* (1790). The passage cited in chapter 4 demonstrates that Kant ultimately rejected hylozoism. He claimed that “the possibility of living matter cannot even be thought; its concept involves a contradiction, because lifelessness (inertia) constitutes the essential character of matter.” Kant too dodged the issue, relying on the etymological definition of ‘inertia’ as *inactivity*. He apparently viewed matter's inability to internally change its “quantity of motion” as indicative of lack of vital power. As to something more akin to panpsychism, Kant's suggestive comment in the *Critique of Pure Reason* leaves open—but unresolved—a possible panpsychist ontology. One might therefore conclude that his opposition to hylozoism was stronger than to (a form of) panpsychism.

In the twentieth century we find sporadic exchanges and counterarguments. For example there was the short but lively debate early in the century

(Bakewell 1904a; Bawden 1904; Strong 1904b; Bakewell 1904b; Prince 1904). Another such case, from 1922, was Yale philosopher Charles Bennett's review of Frutiger's *Volonte et Conscience* (1920). Frutiger advocated a panpsychist "spiritual monism," following the thinking of leading panpsychists of the day. Bennett (1922: 89) questioned "the general value of a theory of panpsychism" such as the one offered by Frutiger, and in doing so touched on the pragmatic and utilitarian worth of any panpsychist theory:

Frutiger contends that in a universe so interpreted, morality and religion can breathe more freely; but he has overlooked a most serious objection. The value of . . . 'dead matter' surrounding us is that it gives us a world indefinitely plastic, indefinitely usable. . . . Put me in a world where all is in some sense (however obscure) spirit, . . . and you embarrass me strangely. Now I no longer feel free to treat any part of the material world merely as means. The coal for the furnace, the stone that goes into our houses, the steel that goes into our machines—these are now, after some mysterious fashion, my own kith and kin. I must treat them differently now. But how? To that question the panpsychist gives no answer—in which case I have been robbed of a vitally important conception of matter; or else he defines the amount of freedom and spontaneity in the material world so that it is always less than the amount required to make any practical difference. . . .²

Two points stand out here. First, Bennett assumes that panpsychism must have some tangible, practical consequence to be meaningful—something that is arguably untrue. He is looking for mechanistic implications, when it is just such a mechanistic mindset that panpsychism is challenging. He gives no credence to it simply as a metaphysical theory of mind. Second, he inadvertently touches on what we may call the ecological issue: panpsychism strongly implies a revaluation of the natural world. (In this sense, it does in fact have meaningful implications in the sphere of human action, though it is not entailed by such.) A new-found sensitivity, respect, and empathy toward natural things has been, for many philosophers, a natural corollary to the panpsychist view—as the discussion at the close of this chapter demonstrates. Bennett complains that he may no longer employ the stuff of nature as mere means to human ends, which of course is exactly the point. In the pre-environmental era of the 1920s it is clear that crude anthropocentrism was the philosophical order of the day.



Recent substantial objections to panpsychism are documented in five main sources: Edwards 1967, Popper 1977, McGinn 1997, Seager 1995,³ and Griffin 1998.

Edwards' refutation of panpsychism begins with the genetic or non-emergence issue. Edwards' view is clearly that mind has emerged at some point in time; hence the issue is, in what sense can we say that mind appeared as something "absolutely new"? To this most vexing of philosophical problems Edwards has a "simple answer." He argues that the concept of non-emergence means either (1) every phenomenon has a cause, or (2) any property in an effect must have also been present in the cause. The emergentist, he tells us, can affirm (1) while denying (2). In other words, the sudden appearance of mind at some point had a definite cause, but nothing requires this cause to be mind-like in any way. By arguing so, Edwards puts mind in the same ontological category as material properties—the standard reductive materialist view. Clearly, if one assumes that mind is a material property, or an epiphenomenon entailed by the physical, then this objection is cogent. The problem is that panpsychists (typically) reject this assumption, and thus the objection is inadequate.

Edwards' position is clearly that of epiphenomenalism. "Granting that awareness *is not* a physical phenomenon," he writes, "it does not follow that it *cannot be produced* by conditions that are purely physical." (1967/1972: 27) This, though, opens the door to the problem of physical causality on the non-physical—how can a physical process affect something that is itself not physical? Edwards denies the causal closure of the physical world, and yet treats this as a "simple" matter that is without need of argumentation. Neither he, nor any epiphenomenalist before or since, has provided an adequate account of how this could be possible.

Edwards then turns to the "analogical" arguments, what we have identified above as the Continuity argument. Panpsychists like Fechner and Paulsen argued that lower animals, plants, and even rocks and atoms are dynamic systems of matter not essentially unlike the higher animals and humans. The human shades into the higher animal, the higher into the lower, the animal into the plant, and the plant into the inorganic; thus there is no point at which to draw the line. Edwards objects that "the analogies are altogether inconclusive" (ibid.: 28); we may call this the Inconclusive Analogy objection. Edwards notes the obvious point that there are both similarities and differences between rocks and humans; but asks, why should the similarities be associated with psychic abilities? This is a fair question. In reply, we may note that, first, any answer relates to the specific positive theory of mind at issue. There are many potential bases for analogy, and some will be more compelling than others. Also, this question gets to the ontological status of mind. If mind is just another physical feature, as the materialists would have it, then certainly it could be unique to

humans. On the other hand if mind has a distinct ontological standing, apart from the physical, then the objection falls apart. It is much harder to see how a unique ontological category can be associated with one very limited part of the physical realm.

Yet this is not his final word. Edwards proceeds to object that such arguments are not empirical in nature, and not subject to objective confirmation. Suppose, he says, that rocks and humans were proven to be composed of fundamentally different substances, thus voiding any possible analogy by continuity. Would such a fact count against panpsychism? Based on his reading of history, Edwards contends that the panpsychist would answer No. The panpsychist can always claim that e.g. the rock has a mind, just a radically different one than humans. Edwards' point is that no amount of counter-evidence would turn the panpsychist against his view.

He then asks: what kind of conceivable empirical evidence could prove the case against panpsychism? The answer he gives, to which many would agree, is "None." Panpsychism seems to be inherently non-testable.⁴ He in fact acknowledges that "it would probably be pointless to try to 'prove' that panpsychism is a meaningless doctrine" (ibid.). Mind is an internal phenomenon, and no external evidence can detect it—call this the Not Testable objection. This is really just a wider application of the problem of other minds, and it pertains to humans as well—how do we know that *any other person* has a mind? We cannot prove it; other minds can only be inferred to a lesser or a greater degree of doubt.

More to the point, what we infer in other people is not the presence of mind per se, but rather the presence of a *particular high-grade* mentality. The existence of mind is always given together with the quality of that mind. At best we can infer only the presence of other minds of comparable scale and complexity. Minds that may be larger and more complex, or subtler and less complex, than humans are progressively harder for us to sense. At some relatively near point on the scale of complexity, we lose the ability to infer mental existence. We may say with Plato, when he contemplated the psyche of the sun, that non-human mind cannot be known empirically, only rationally. Thus, we may reasonably infer that other humans have a mind like our own, and that rocks do not have a mind like our own, but this does not imply that they have no mind at all. Any such mind may have to be discovered through the use of our powers of reason—if not our powers of intuition.

Finally, Edwards objects that "the panpsychists do not succeed in asserting any new facts and in the end merely urge certain pictures on us" (ibid.).

Citing Schiller's writings about the psyche of a stone, he asks "How does the stone's awareness 'in its own way' differ from what other people would refer to as absence of awareness?" (30) The difference is one of interpretation. The panpsychist and materialist see the same physical event or fact, but they each interpret it in a different way. This is the classic case of conflicting paradigms. Two individuals, each observing nature from the perspective of different worldviews, will reach different conclusions about the meaning of reality. Edwards clearly has not taken Kuhn's thesis to heart. In this case there are no new facts, just new interpretations. And furthermore there is great difficulty in properly assessing other worldviews. All judgments are colored by one's own perspective, especially one's judgment *about* one's perspective, or another's perspective. Edwards may not *like* the panpsychist perspective, but, lacking sensitivity to the paradigm shift, he is in poor position to judge it "unintelligible."

In sum: Edwards offers no objection to the so-called metaphysical or First Principles arguments simply because he declines to examine them at all. He objects to the Non-Emergence argument by claiming that emergence is possible, though he does so by denying the causal closure of the physical world. The weakness of this position undermines any cogent objection. He objects to the Continuity or analogical argument by claiming that any proposed analogy is "altogether inconclusive" (Inconclusive Analogy objection). The strength of this objection rests on the degree to which one holds mind to be ontologically distinct. If mind is simply another physical-based feature, then the objection potentially has merit; if mind is a unique ontological category, then the objection is much weaker. Finally he employs the Not Testable objection: Panpsychism proposes no empirically verifiable criteria, nor does it offer any "new facts" by which it can be evaluated. This is cogent if testability is considered a requirement. By this measure, though, virtually any metaphysical theory will fail.



Ten years later Karl Popper offered his views on the subject, presenting three arguments against panpsychism (1977: 69–71). He first objected to the Non-Emergence argument by supporting a thesis of radical emergence. By way of example he noted that liquids have no such latent property called solidity, and yet they suddenly become solid at the appropriate (low) temperature. Therefore solidity is radically emergent. We may call this the Physical Emergence objection. In response the panpsychist could say (A) in fact solidity (and liquidity, and gaseousness) *is* inherent in the atomic

make-up of the material. A given atomic structure has a predetermined propensity to become solid, liquid, or gas under certain conditions. Any such phases are present in the substance at all times, although only one of which is actualized; and (B) Popper implicitly assumed that mind is a physical property like solidity. This is far from certain.

Popper's second example was based on human ontogenesis. As a baby grows to adulthood, he claimed, its mind grows correspondingly, and gradually. Yet this does not imply that the food the baby eats is somehow proto-mental. The panpsychist may grant this point but then ask, what about the fetus? Does it have a mental life? What about a week old clump of cells? What about a single egg, either before or after fertilization? Presumably Popper would deny mind to a single cell. Thus, he appears to be committed to radical emergence at some point in ontogenesis. Where and how this radical emergence is supposed to happen Popper did not say.

His second objection is in essence an elaboration of the first. He argued that the jump from inorganic to organic matter is a large discontinuity, and the corresponding mind (on the panpsychist thesis) must also make a correspondingly large emergent jump. Hence mind, at least complex mind, must emerge. In reply it may be noted that virtually all panpsychists accept gradations in mind that correspond with structural complexity. They would thus agree that new *levels* or *intensities* of mind emerge—but this is not radical emergence. The jump between any two levels is incomparably less than the jump from no-mind to mind. Popper's objection does rightly point out that the panpsychist must account for the emergence of levels of mind, but this would be related to the specific positive theory of mind that is put forth.

Third, mind requires memory, and atomic particles have none, because all such particles are "physically identical." Therefore they have no mind. More to the point, Popper claimed that "consciousness or awareness" requires memory. He seems to be guilty of an anthropic projection, of placing the demands of human consciousness on inanimate particles. Certainly anything like the human mind requires a human-like memory, but this is relevant only for complex organisms. It is not reasonable to demand that atomic particles have anything like the memory capability of the human being, or even any physical instantiation of something like memory. Minds of atoms may conceivably be, for example, a stream of instantaneous memory-less moments of experience. Or their memories may be realized in their space-time trajectories, which change as a function of their interactions. In any case, taking into account these three

objections and a minimalist survey of history, Popper concluded that panpsychism is “baseless.”



Colin McGinn also presented three objections, first published in 1982 and then updated for a second edition (1997: 34–35). (The following discussion refers to the latter.)

First, things such as rocks and atoms exhibit no signs of mind-like qualities or mental properties. This is a re-articulation of Edwards’ Not Testable objection (sometimes referred to as the No Signs objection). Unlike Edwards, McGinn seems to have accepted causal closure of the physical. Thus, any putative mind in rocks or atoms must be acausal, i.e. epiphenomenal. However, the implication is that *human* mind is causal on the physical, and this causality is firm evidence that human mind exists. (How human mind can be causal on the physical, and not itself epiphenomenal, McGinn did not say).

McGinn further implied that inanimate objects exhibit predictable and law-like behavior, and that this precludes the presence of mind. This reaction, dating back to Kepler, is understandable. The only mind we deeply know, the human mind, is for us unpredictable and creative. We take these as essential characteristics of mind, and hence when we prove predictability or law-like behavior, we feel justified in excluding or denying mental processes. And yet this is a base assumption, grounded in our anthropocentric outlook. As panpsychists (e.g. Royce and Peirce) have observed, vastly simpler minds may in fact appear to us as law-like. Thus, it is no substantial argument against panpsychism.

Second, McGinn argued that panpsychism cannot explain supervenience—the entailment or dependence of mind on body. This is so because either “it only pushes the problem back a stage, or else it undermines its own motivation” (ibid.: 34). Regarding the first point, McGinn said that panpsychism cannot explain the supervenience of the human mind on the human body because, if invoked, it would leave open the problem of (say) supervenience of atomic mind on atomic body. If on the other hand the panpsychist tried to deny the requirement of supervenience, then, he said, “there would be nothing for panpsychism to explain” (35). McGinn’s premise is that mind is in fact supervenient on body, but the panpsychist is not bound to such a view—Spinoza and Leibniz being two cases in point. The denial of supervenience in no way leaves nothing to explain, and affects human mind no less than the mind of a stone or an atom. This objection holds *only if* one accepts

the premise of supervenience *and if* one accepts that panpsychism has the burden to explain this. Thus, it is no general objection.

McGinn's third objection followed from Popper's idea that complex mental properties must be seen as emerging from simpler ones, hence mind emerges, hence the Non-Emergence argument is undermined. McGinn added nothing particularly new, and the above response applies here as well. He did insist that the panpsychist owes an explanation as to the "precise character of this proto-consciousness" (ibid.). This is quite a challenge, considering the difficulty that countless philosophers have had in even determining the "precise character" of their *own* mind. That aside, McGinn seems unable to imagine degrees of experience. Thus, he offered such dubious statements as "Either elementary particles experience pain or they do not." (ibid.) This kind of black-and-white view of mental qualities is certain to undermine any conceivable panpsychist view a priori. In the end McGinn offered no new viable objections.



Seager's 1995 article "Consciousness, Information and Panpsychism" was the first sympathetic piece to discuss distinct objections to panpsychism. In order of ascending difficulty: There is the Not-Mental problem, which denies that the conjectured inner nature of (say) an atom is anything we can reasonably call mental. This is a variation on Edwards' Inconclusive Analogy objection. As before, it depends on the specific positive theory of mind that the panpsychist puts forth. The theory would have to elaborate on the similarities between human and non-human mind.

Next is the No Signs problem, largely reiterating the Not Testable objection of Edwards. Seager's third issue is what he calls the Completeness problem. This is also related to the Not Testable objection; it suggests that mental activity should be causally efficacious, and thus evident. These issues have been discussed above.

The fourth objection is the Unconscious Mentality problem. This objection is raised against those panpsychists (such as von Hartmann) who claim that the mentality of the inanimate world is more an *unconsciousness* than consciousness. The objection then is another emergence issue: How can consciousness emerge from unconsciousness? This objection, to the extent that it is valid, would apply only to highly specific versions of panpsychism.

Seager's final and "most difficult" objection is the Combination Problem, which Seager claims was originated by James (1890/1950: 158–160). As concisely formulated by Seager (1995: 280), it is the problem of "explaining

how the myriad elements of 'atomic consciousness' can be combined into a new, complex and rich consciousness such as that we possess." Grant that an atom has some degree of proto-consciousness or proto-mind. Does the molecule have a mind? If it does, how does this mind relate to the minds of its constituent atoms? What about the mind of a macromolecule, or a single cell, or an entire organism? Are larger-scale minds a sum of the atomic minds, or a synthesis, or a super-hierarchy, or something else? Without an acceptable explanation for this compounding of mind, the panpsychist risks falling into another emergence theory of the kind he was seeking to avoid.

Seager suggests that this summing mechanism may reside in the phenomenon of quantum superposition. This is plausible at the atomic or molecular level, but seemingly less so at macro-scales. (Penrose and Hameroff's theory of mind suggests one way that superposition could in fact act at macro-scales.) Generally speaking, the panpsychist does need to relate sub-minds to super-minds in a plausible way. But this is a consequence of the particular positive theory of mind. Hence the Combination Problem is perhaps better seen as a call for details.



Finally, there are some ten objections discussed by Griffin (1998: 92–99). Many of these are valid only in the face of certain limited assumptions. Griffin identifies, for example, the objections that panpsychism is (a) a form of supernaturalism, (b) a form of vitalism, (c) a form of idealism, and (d) a form of acausal parallelism, thus denying freedom of will. From the bulk of the material above it should be clear that these are not general objections. Other of Griffin's points were addressed above; these include the objection from "unintelligibility," which relates to the worldview shift that Edwards found so problematic.

One general objection, implicit in much of the above, is the "Implausibility" objection: panpsychism is simply so radical, so extreme, so opposed to common sense, that it cannot be true. It is this objection that e.g. Searle has recently raised, with apparent glee, against Chalmers' sympathetic treatment of the subject (see Searle 1997: 49–51). Griffin notes that, on this objection, panpsychism "violates our intuitions about the physical world" by implying that "things such as rocks and telephones have experiences" (1998: 94, 95).⁵ The objector would essentially argue that "no intelligent person acquainted with scientific facts and philosophical standards of acceptability could believe it" (93). This latter point is of course

directly countered by the Argument from Authority, as demonstrated in the present work. Furthermore, as Griffin rightly observes, there are a great many implausibilities in every theory of mind, yet we do not reject them all on that basis. As with the Combination Problem, the Implausibility objection cannot be addressed without an examination of the specific theory of mind that the panpsychist puts forth. Certainly some incarnations are more implausible than others, and we may agree that this places an added burden of proof. Yet this burden is not inherently insurmountable.

Griffin's final objection is centered on an argument implied by McGinn: (1) The mind-body problem is so intractable that it is fundamentally beyond human ability to resolve; hence any putative solution must be false by that fact alone. (2) Panpsychism offers up a solution to the mind-body problem. Therefore, (3) panpsychism is false. We may call this the Eternal Mystery objection. Griffin gives an extended discussion of this matter (*ibid.*: 98–116), arguing that in fact we are capable of envisioning the radical solution demanded. McGinn's claim is empirical. He can point to the fact that hundreds of years of work have not resolved the issue to the point of general consensus. Yet the same could be said of any number of scientific claims that were debated for an equally long period of time before being resolved by some theoretical or experimental breakthrough. Whether the mind-body problem is *in principle* different, and *in principle* undecidable, may never be known. It does seem likely that at some point in time a general consensus is attainable. What that consensus will be, we do not know.



To recapitulate: We may identify six cogent and substantial objections to panpsychism generally.

- (1) Inconclusive Analogy—The purported analogical basis between humans and other objects is groundless.
- (2) Not Testable—There are no “new facts” or empirical basis on which to evaluate the panpsychist claim. Also known as the No Signs objection. This includes the assumption that non-verifiable theories are invalid in some fundamental sense.
- (3) Physical Emergence—Emergence is in fact possible because we see it in other realms of the physical world; mind is not ontologically unique; hence emergence of mind is conceivable.
- (4) Combination Problem—Sub-minds, such as those of atoms, cannot be conceived to combine or sum into complex, unified minds such as humans have. Hence panpsychism is not an adequate account of mind.

- (5) Implausibility—Panpsychism is so implausible and counter-intuitive that it cannot be true. Also known as the *reductio ad absurdum* objection.
- (6) Eternal Mystery—The mind-body problem is unsolvable in principle, and hence panpsychism, which purports to offer a solution, must be false.

10.3 Into the Third Millennium

Arguments offered, objections countered—to what end? Panpsychism, perhaps to a greater degree than most other philosophical concepts, seems to ultimately rely on fundamental intuitions about the world. Those who are struck by an intuitive appreciation of panpsychism will formulate supportive and coherent arguments, or express their beliefs in poetic or metaphorical language. Those who find it impossible, unintelligible, and outrageous will offer their objections—without a whit of concession from the other side.

The mechanistic worldview is deeply imbedded in our collective psyche. For several hundred years the dominant orthodoxy has implicitly assumed that inanimate things are fundamentally devoid of mental qualities. This view has become integrated into our science, our literature, and our arts. Ultimately it has incorporated itself into our deepest social values, and thus become reflected in our collective actions. We treat nature as an impersonal thing or collection of things, without spontaneity, without intrinsic value, without “rights” of any kind. Natural resources, plant and animal species have been exploited for maximal short-term human benefit. Such mindless entities are seen as deserving of no particular respect or moral consideration. They exist to be collected, manipulated, dissected, and remade.

The mechanistic worldview once liberated humanity from religious dogma. Now, some would say, it has outlived its usefulness. It has become its own dogma, more stifling and destructive than the one it usurped. As has happened before, we may again be approaching one of those epic periods in history when fundamental assumptions about the world change. The Greeks came into prominence in a mytho-poetic world full of gods and mysteries. They imposed an order, a *logos*, on the world, putting reason and rational thinking into a position of preeminence. And yet, as we have seen, they never completely abandoned their earlier panpsychic notions. Rather they incorporated them into the *logos* framework and transcended the older worldview. The preeminence of reason and the drive to find unifying principles preceded and anticipated the development of Judeo-Christian monotheism. This was in essence another new worldview, one that placed

faith and spirituality above logic and reason. Once again, the Greek *logos* was not discarded but absorbed and transcended. The Scholastics took the work of Aristotle and Plato as core truths, and incorporated and reinterpreted their ideas in a Christian framework. This basic outlook on the cosmos too held for several hundred years, until the Renaissance when principles of reason and logic reasserted themselves in the investigations of Copernicus, Galileo, Bacon, Kepler, Descartes, and Newton. They rearticulated the world as a clockwork mechanism, devoid of spirit and mind. Yet these men were no atheists. They accepted basic Christian principles, and still were able to construct a worldview that was compatible with them. God was placed on high and relieved of any burden to intervene with the workings of the universe. As before, a new worldview—in this case, mechanism—incorporated and transcended the preceding one. Even through the present day we find many supposedly hard-core materialists, physicists, and other scientists who hold traditional religious beliefs.

The mechanistic outlook has three main pillars. One, all nonliving things, and most living things, are utterly devoid of sentience and mind. Two, there is an objective aspect to all things, such that a physical and mathematical description is possible for the whole of the visible universe. The third pillar relates to the human psyche. In earlier times the soul was God-given and eternal; it mysteriously interacted with the body and the physical world. In later times the soul was replaced by mind; mind was a mysterious product of physical processes, having mysteriously emerged at some point in evolution, and (still) mysteriously interacting with the body and the physical world. A consequence of these three pillars was that humanity became radically estranged from nature, a unique product of God or evolution, and virtually alone among natural beings.

A successful worldview is one that transcends its predecessor by discarding certain outmoded aspects, and building others into the foundation of a new cosmological order. Panpsychism may be poised to fill this role. Its emphasis on mind and “spirit” is in one sense a return to the spiritual perspective on nature, in counterpoint to the mechanistic materialism of the past. Panpsychism has been advocated by many great scientists and other thinkers who clearly did not discard *all* aspects of mechanism. *They rejected the first pillar of mechanism, retained the second, and reinvented the third.* They found conventional science very useful in certain areas of inquiry. Yet their larger worldview rejected the fundamental mechanistic belief that lower animals, plants, and nonliving material objects were mindless things. Clearly it was possible for them to incorporate elements of a mechanistic approach to nature while maintaining a deeper view of all things as

enminded or ensouled. And to the extent that they developed positive new theories of mind, they were able to create new visions of mind and matter and their interrelationship.



Several great thinkers were very explicit that they saw panpsychism as the foundation for a fundamentally new outlook on reality. Epicurus advocated an atomistic ontology and yet saw in the atomic swerve the basis for human will, and hence for the very possibility of virtuous action. Saint Francis and Campanella followed a theological form of panpsychism that demonstrated the presence of spirit in the world, and consequently served as a basis for moral action. Leibniz was an early contributor to the mechanistic worldview, but his quanta of the universe, the monads, were mind-like entities. Newton was willing to consider the possibility that all matter was alive. LaMettrie was a notorious mechanist, but for him mechanism was no cause for concern. On the contrary, a properly *vitalistic* mechanism was a way of deeply integrating humanity into nature:

Whoever thinks in this way will be wise, just, and tranquil about his fate, and consequently happy. He will await death neither fearing nor desiring it; he will cherish life . . . ; he will be full of respect, gratitude, affection, and tenderness for nature in proportion to the love and benefits he has received from her; and, finally, happy to know nature and to witness the charming spectacle of the universe, he will certainly never suppress nature in himself or in others. (1747/1994: 75)

Fechner was another who saw panpsychism as the basis for understanding the world. As he said, it “decides many other questions and determines the whole outlook upon nature” (1848/1946: 163). James came to support “a general view of the world almost identical with Fechner’s” (1909/1996: 309). This “pluralistic panpsychic view of the universe . . . threatens to short-circuit” the cynical worldview of the mechanists, and replace it with something greater, higher, and more sympathetic.

In the twentieth century, Bateson too came to reject the standard worldview. If, he said, you adopt the conventional objectivist materialist view of mind, then “you will logically and naturally see yourself as outside and against the things around you. And as you arrogate all mind to yourself, you will see the world around you as mindless and therefore not entitled to moral or ethical consideration. The environment will seem to be yours to exploit.” (1972: 462) Bateson lived in the years when the ecological crisis of the present day was becoming apparent. It was clear to him that this situation was rooted in a defective conception of mind. His outlook was shared

by Plumwood and by other thinkers who saw a subtle form of panpsychism as the foundation of a new, more compassionate, less confrontational environmental ethic.

One of the most poetic expressions of the panpsychic worldview was one of the earliest. Recall Empedocles' beautiful fragment 110, in which panpsychism is seen as the key to revelations about reality:

If thou shouldst plant these things in thy firm understanding and contemplate them with good will and unclouded attention, they will stand by thee for ever every one, and thou shalt gain many other things from them; . . . for know that all things have wisdom and a portion of thought.

Here Empedocles demonstrates a reverential, almost mystic belief in the power of the panpsychist worldview to reveal the truth. It is, he suggests, simply the most enlightening and virtuous standpoint from which to view the cosmos.

The beliefs of Empedocles, Fechner, James, and Bateson constitute a twelfth and final argument for panpsychism, which I will call the Greater Virtue argument: Panpsychism is the superior worldview because it leads to a more integrated, compassionate, and sympathetic cosmos. It is, they suggest, life-affirming and life-enhancing. It leads to positive, sustaining values for humanity. It stands in stark contrast to the cynical, isolating, manipulative values of mechanistic materialism. To the extent that these mechanistic values have contributed to our current environmental and social crises, panpsychist values may begin to reverse this process and heal the damage.

To judge the value of something as far-reaching and fundamental as a metaphysical worldview is a difficult prospect. It takes years, centuries, for the full effects of a worldview and its corresponding values to be realized. The mechanistic outlook took some 350 years before the negative effects became apparent. Thus, we are likely not able, today, to adequately judge the net worth of a panpsychist worldview. And yet the imperative of the present calls for change. Mechanism is evidently defective; something will take its place. This new *Weltanschauung* must, for our sake and the sake of the planet, be sustainable and compassionate. The evidence is encouraging. Of the dozens of thinkers examined in the present work, virtually without exception,⁶ every panpsychist thinker has adopted an optimistic, life-affirming, sympathetic perspective on the world.

Granting all this, the cynical materialist can still ask "Yes, but is it *true*?" If, after all, panpsychism is just some happy delusion we are surely not better off adopting it, or simply pretending it is true. Yet it must be emphasized

that truth is only assessable from within a given worldview. The materialist, being fundamentally committed to an anti-panpsychist view, has no unbiased standpoint from which to make a judgment. Thus, a ruling of “unintelligible” or “false” is meaningless. Christians have long denounced animism and polytheism as untrue, and accused their adherents of living in a child-like cosmos of omnipresent spirits and ghosts. Likewise, materialists have accused Christians and other theologically minded individuals of buying into a “happy myth” that had no scientific basis. And of course many others today blame the materialist mindset as the root cause of many of our present social and environmental problems. Objectivity, moral neutrality, and inanimateness are mechanistic assumptions about the world, presumed but never proven. Mechanistic materialism can be seen, like the rest, as a happy myth, one that liberated humanity from stifling theology, and yet now has reached the end of its useful life.

The evolution of worldviews is one of the great stories of human existence. Worldviews are born, and they are liberating and visionary. They help to define what is true and what is good. They expand to encompass many aspects of society. They undergo gradual evolution and refinement. At some point they grow rigid and inflexible. Ultimately they become self-justifying, self-perpetuating, and finally, destructive. Materialism, and the accompanying analytical and logical philosophy, seems to have reached this terminal stage.

Panpsychism appears able to provide the foundation for a new worldview in a way that deeply addresses the root issues. It is easy to abuse dead, inanimate matter, or unconscious forms of life. The human who alone has mind, or in whom mind is a contradiction or unfathomable mystery, has no sense of being at home in the cosmos. As a consequence he is likely to feel alienated, frightened, angry, or foolish. It need not be so. Philosophers have envisioned alternative views that have equal claim to validity. We as a civilization need only summon our collective wisdom and courage, learn the lessons of history, and transcend the crude, destructive, and ultimately dehumanizing materialist worldview.

Notes

Chapter 1

1. Some would expand this definition of panpsychism to also include the view that “all things are fundamentally reducible to mind” (Sprigge 1998b: 663). This, however, is essentially the definition of classical idealism. It seems only to confuse matters to link the two, especially as they are disjoint concepts (i.e. one can be an “idealist panpsychist,” or a “non-idealist panpsychist,” or an “idealist non-panpsychist”). Thus, the present work will hold to the more restricted definition.

Also, there are some panpsychist positions that hold that not literally every object, but rather *most* objects, or the *most fundamental* objects (such as atoms), possess mind. The panexperientialism of Hartshorne and Griffin is the primary case in point. These will be examined later.

2. There are certainly other conceivable alternatives, ones that would permit both panpsychism and emergentism. E.g.: (1) Mind did not exist until some sufficiently complex biological organism suddenly acquired consciousness. Then, whatever that creature cast its attention on was drawn into a “conscious system,” and thereby attaining mind. (2) Mind did not exist until some Supreme Being decided to grant it to all things. However, no known thinker has advocated either such view.

3. See Parmenides, fragment 3: “thought and being are the same thing” (Smith 1934: 15).

4. For an elaboration, see James’ *Essays in Radical Empiricism* (1912/1996: 4, 39–91).

5. Of course, the analogy does not technically hold; a real shadow does have causal efficacy, as it affects any light-sensitive object (such as a human eye, or a photo-sensor) that it crosses.

6. This last point is contentious, as it directly conflicts with the process view of panpsychism. Yet there seems to be no convincing argument to exclude systems (otherwise known as “aggregates”). More on this issue in the discussion of Hartshorne’s philosophy.

7. Nagel (1974) suggests that the notion of “what it is like to be something” is applicable even to entities for which we can have no analogous feeling (i.e. bats). By similar reasoning, the panpsychist may offer the argument that it is “like something” to be *anything*—but that this is (perhaps) nothing that we humans can comprehend.
8. For a recent example of an alternative, see Plumwood 1993: 135.
9. The views of Agar and Haldane are discussed in detail in later chapters.

Chapter 2

1. Additionally, there were many other lesser figures, including Xenophanes, Alcmaeon, Hippasus, Melissus, and Archelaus. They will not be addressed here.
2. Democritus was actually younger than Socrates, but he is typically grouped with the other pre-Socratics because of his close connection to Leucippus. The text here will follow tradition and refer to the “Democritean theory of atomism,” even though it is likely that Leucippus originated some of the concepts.
3. Heraclitus, though, does use the adjective ‘*zoe*’ to describe his *arche* of fire. In fragment 30 he refers to the *pyr aieazon* (ever-living fire).
4. Guthrie 1962–1981, volume 1: 140–145.
5. The rough equivalency of the terms ‘mind’ and ‘soul’ continued at least through the time of Lucretius, who wrote in *The Nature of Things* “Be sure that under one name you join the two, and when . . . I say ‘the soul’, believe that the word will mean ‘the mind’ as well, since both make up a unit, a thing conjoint.” (III, 420–425)
6. Though this is precisely what Heraclitus says. See below.
7. Since the time of Newton, we might now include gravitation as further evidence of an inherent “power of motion” in all things.
8. Even more striking: physicists have recently identified a substance in the universe they call “dark energy,” which is characterized solely by its *universal repulsive force*—identical to Empedocles’ Strife. Combined with the Love of gravity, we find a stunning anticipation of modern cosmology. See Bahcall et al. 1999.
9. There is a potential epistemological and ontological problem here: can the pure elements “know” each other? It would appear not, since pure fire and pure air, for example, have nothing in common. Logically it would seem that they must remain forever unknowable to each other. Further, if the elements cannot know each other, it would seem that they cannot directly interact at all. And yet, they somehow combine to form all composite things of the everyday world. Evidently the powers of Love and Strife bridge this gap of unknowability and allow elements to combine. Apparently this was not seen as a major concern.

10. Confirmation of this comes again from Lucretius: “. . . the soul is subtly built of infinitesimal atoms. . . . Whatever is so mobile [as the soul] must be made of very round and very tiny atoms. . . . Now since the soul has been revealed to be uncommonly mobile, we must grant it made of atoms very tiny, smooth, and round.” (III, 175–205).

11. In fact, in *Philebus* Plato argued from the self-evident existence of the human soul to prove the existence of a world-soul. More on this below.

12. Plato makes a few scattered references in his later works to *apsychon*, or inanimate and lifeless things, but none of these conclusively show that inanimateness is a distinct ontological category. In fact Plato uses the term in a variety of contexts, sometimes simply indicating “non-animal” (as we understand the term today); examples of this would include *Sophist* 220a, 265c, and *Laws* 782d, 873e. Other uses (e.g. *Laws* 896b) indicate that soul is historically prior to matter, and thus matter is in this sense *apsychon* (without soul). But this fact, of course, does not prevent soul from inhabiting material objects, or driving their movements and changes.

13. *Sophist* citations are from the Jowett translation (Plato 1953). White’s translation (Plato 1997) is somewhat less clear in these particular passages.

14. This idea recalls Parmenides dictum that it is the same thing to think and to be.

15. The four categories are limit, unlimited, mixture of limit and unlimited, and cause of the mixture.

16. The only other reference to the loadstone occurs in a rather incongruous passage in *Timaeus* (80c). Here he jumps from a discussion of bodily respiration to an aside on the nature of physical forces, comparing magnetic force with the downhill flow of water, the movement of lightning, and the static attraction of rubbed amber; all these things, Plato says, “move by exchanging places.” What the underlying cause of motion might be, he does not say.

17. The Athenian is not clear exactly how many souls there are: “at any rate, we must not assume fewer than two [good and evil].” Though, recall the passage in *Timaeus* in which at least each star has a soul.

18. The chronology of Aristotle’s writings is controversial, to say the least. Attributions here follow Rist (1989). By his assessment, *Eudemian Ethics*, *Physics*, and *On Generation and Corruption* are all middle-period works.

19. In fact the only known fragment attributed directly to Leucippus is “Nothing occurs at random, but everything for a reason and by necessity.” (Smith 1934: 37)

20. See later discussions, for example, on Wright and De Quincey. This Non-Emergence argument is essentially the same as what has elsewhere been called the “genetic argument”—see Edwards 1967 or Butler 1978. However, the term ‘genetic’ seems confusing and misleading in this context, so a re-designation is called for.

21. Cicero wrote: “Zeno, then, defines nature thus: he says that it is a craftsmanlike fire which proceeds methodically to the task of creation.” See Inwood and Gerson 1997: 150.

22. The origins of the Old Testament may go back to 1000 BCE or even further, but the majority of it was likely first written down, in Hebrew, during the period 400–200 BCE—just about the time that Stoicism emerged. (The oldest extant texts of this Hebrew bible are of course the Dead Sea Scrolls, which were probably created during the period 200 BCE–0 CE).

The translation of the OT from its original Hebrew into Greek occurred over the period 250–50 BCE, during the height of Stoic influence. This translation is known as the Septuagint (or “LXX”), and it is the source of all modern-era Christian texts of the Old Testament—the oldest surviving example being the Vatican Codex of 350 CE. ‘Pneuma’ of the Septuagint was translated from the Hebrew word ‘rû(a)h’, and it appears nearly 300 times in the OT. Thus, even though the original term ‘rû(a)h’ may have predated Stoicism, its translation into ‘pneuma’, and accompanying conceptual language, was certainly subject to Greek philosophical influences.

Appearances of the various forms of pneuma are even more numerous in the New Testament, which dates from the first and second centuries of the Christian era. It is in this Testament that we find the most fully developed articulation of the Spirit; and perhaps not surprisingly, the clearest association with Stoic ideas.

23. The following biblical text is taken from the New International Version (NIV), unless stated otherwise.

24. There is a lingering and problematic sense in which Christian theology does allow for a weak form of panpsychism. If God is omnipresent, then he is obviously “in” all things; this points toward pantheism. If a portion of God is in a thing, and this portion assumes any sense of independent individuality, then this could qualify as a “monistic panpsychism.”

Chapter 3

1. It is clearly somewhat arbitrary how one defines a “major philosopher.” One proposal relies on a neutral definition based on the *Routledge Encyclopedia of Philosophy* (Craig 1998). A major philosopher may be defined as someone to whom is dedicated an individual entry in the Encyclopedia that is of substantial length, say 1,000 words or more. This definition is certainly debatable but is probably the closest to a consensus opinion that one can get. And in any case, the central point will still be made: a large number of the most important Western thinkers were either outright panpsychists, or strongly sympathetic to such a view.

2. It certainly seems possible that Telesio and Bruno were influenced by Cardano’s panpsychism, but we have no direct evidence of this in their writings. If so, then of course Cardano’s legacy becomes much greater.

3. It is not clear why Patrizi would use the spelling ‘pampsychia’ rather than ‘panpsychia’, as the other three section names would suggest.
4. The nine grades, from highest to lowest, are: unity, essence, life, intelligence, soul, nature, quality, form, and body.
5. See for example Plato’s *Parmenides* (129–132), or *Phaedo* (100, 101).
6. As recounted by Brickman (1941).
7. Note that Bruno, like the Greeks, considers ‘living’ and ‘ensouled’ synonymous.
8. The influence of Bruno on Leibniz is still highly debated. Leibniz makes only scattered references to Bruno. However, see the discussion under “Leibniz” that follows.
9. Cf. Singer 1950: 194, Kristeller 1964: 138, and Calcagno 1998: 39.
10. Cited on p. xii of Gilbert 1600/1958.
11. Gilbert viewed soul as something transferable, just as magnetic power may be transferred from one object to another. The soul of the Earth was evident in its magnetic field, and this soul was then seen as given to all earthly objects, whether plant, animal, or mineral (though not necessarily in “magnetic” form).
12. All quotes here cited in *ibid.*: 309–310.
13. Both quotations are cited on p. 35 of Bonansea 1969.
14. Cf. *ibid.*: 36.
15. The relevant passages are found in part IV, chapter XXV.
16. Thoreau (2000: 87).
17. The Spirit of Nature was quite similar to what Cudworth had called the “plastic nature.”
18. See, for example, Merchant’s *Death of Nature* (1979: 270–272).
19. The general structure of the *Ethics*, though, was closely anticipated some 1,200 years earlier by Proclus; see his *Elements of Theology*.
20. For an excellent discussion of this, see pp. 125–143 of Bennett 1984.
21. All *Ethics* quotations are from Spinoza 1677/1994.
22. IIP2: “The body cannot determine the mind to thinking, and the mind cannot determine the body to motion, to rest, or to anything else.”
23. Donagan (1989) is perhaps the only dissenter from this trend, but it is a mild dissent. He ultimately yields to a grudging acceptance. Panpsychism is a “doctrine to which [Spinoza] is committed” (129). But “[the mind of] a grain of sand . . . will not be cognition, and will be barely distinguishable from inanimateness” (130).

24. See the footnote on p. 204 of McGuire 1968. Also see the passage of Newton's quoted on p. 196, in which Newton directly notes that "the Stoics taught that a certain infinite spirit pervades all space . . . and vivifies the entire world."

25. See Democritus, fragment 9 (Freeman 1948: 93).

26. This role of the dominant monad as providing the integrating force to a body is strongly reminiscent of the Stoic *hegemonikon*—recall the earlier discussion.

27. Though he was not impressed with the Platonic idea of the world-soul. In his *Comments on Spinoza's Philosophy* (1707), he refers to "the error of the world soul," and states that "I don't approve of this doctrine at all." (Leibniz 1989: 277)

28. See the footnote on p. 227 of Leibniz 1989.

29. See Brown 1990.

Chapter 4

1. Interestingly, he was not an outright atheist, as many had accused him. Rather he held more to an agnostic view. For LaMettrie, one could certainly continue to believe in God, but it was to be strictly a matter of faith. God had no role to play in the material world, and certainly no explanatory power over natural phenomena. Nonetheless, atheism was the preferred position, and "the world will never be happy until it is atheist" (1747: 58).

2. Vitalistic materialism was actually anticipated by Cavendish in her theory of organicist materialism of the 1660s—recall the discussion in chapter 3. Both of these forms of panpsychic materialism ultimately go back to the Greek notion of a material cosmos pervaded by the *pneuma*.

3. This work was amended and republished in 1750 as *Treatise on the Soul*.

4. The formal title of the work was *Dissertatio Inauguralis Metaphysica de Universali Naturae Systemate*.

5. It is clear that Kant means *mechanistic* materialism.

6. Kant leaves open the possibility of a neutral-monist position, in which case something other than mind or matter would underlie both.

7. See Nisbet 1970: 11.

8. Cited in Bowie 1998: 509.

9. K. Rothsschuh (1968), cited on p. 242 of Schnaedelbach 1984.

10. See Schelling's 1802 work *Bruno, or On the Natural and Divine Principle of Things*.

Chapter 5

1. *Vorstellung* is sometimes translated as Representation (e.g., in the 1958 translation by Payne), and occasionally as Presentation (e.g., McCabe, in Haeckel 1904: 466). The translation as Idea is found in the 1883 translation by Haldane and Kemp and in the 1995 translation of Berman.

2. Letter 58, Spinoza to Schuller, dated 1674; cited in Spinoza (1677/1994: 267).

3. Although this in fact is not true, as we saw in our examination of Campanella. It was Campanella who first attributed “will” (or “love”) to all things—though both he and Schopenhauer seem to have been anticipated by Empedocles and his concepts of Love and Strife.

4. Of course, in Schopenhauer’s world there is neither, strictly speaking, mind nor matter—but only will and idea. He says as much in the same passage.

5. Wittgenstein was significantly influenced by Schopenhauer’s metaphysics, and two passages in *Philosophical Investigations* (1953) seem to refer to his notion that a stone has a mind. Both occur in book I. The first passage:

Could one imagine a stone’s having consciousness? And if anyone can do so—why should that not merely prove that such image-mongery is of no interest to us?” (sec. 390).

Wittgenstein is clearly disparaging the notion. The second seems to at least hold suspended judgment on the matter:

Is my having consciousness a fact of experience?—But doesn’t one say that a man has consciousness, and that a tree or a stone does not?—What would it be like if it were otherwise?—Would human beings all be unconscious?—No; not in the ordinary sense of the word. But I, for instance, should not have consciousness—as I now in fact have it. (sec. 418)

He suggests that the consciousness of man and of tree or stone are necessarily of different types—that thinking of stones as conscious would entail viewing humans as something else, as “unconscious.” He seems unwilling to consider them as both possessing a common type of mentality, in any sense of the word. And thus he rejects one of Schopenhauer’s main theses.

6. Such a view has clear ethical implications in the social realm; Schopenhauer notes that it speaks for a view in which *homo homini lupus* (man is a wolf to man). See Schopenhauer 1819/1995: 74.

7. For an analysis of Fechner’s analogical arguments, see Woodward 1972.

8. See Skolimowski 1990, 1992, 1993.

9. ‘Inconveniences’ is substituted for Hamilton’s ‘incommodes’.

10. This was the view of Hamilton (1990: 117–118): “. . . the ‘given’ . . . was not to be construed as given *to* someone. ‘Experience’ was essentially subjectless.”

11. For a good summary of Paulsen's criticisms, see pp. 57–64 of DeGroot 1965.
12. Wundt is occasionally cited as a panpsychist, but he seems to have been half-hearted at best. His primary treatise on psychology (1892) offers scant mention of the subject. He does oppose emergentism ("It is surely inadmissible to suppose that mental existence suddenly appeared at some definite point in the developmental chronology of life"; 1892/1894: 443), which leaves him with some form of panpsychism. But the discussion that follows includes just a single passage that cautiously endorses it: ". . . we have every right to assume that primitive mentality was a state of simple feeling and sensing; while the possibility that this state accompanies every material movement-process . . . is still certainly not to be denied. At least, it looks very much more probable than the materialistic function hypothesis, if we accept the dictum 'Ex nihilo nihil fit' [out of nothing comes nothing]. (ibid.)

Chapter 6

1. The concept of a mind-stuff theory did not originate with Clifford. It was anticipated as far back as Democritus and his idea of the soul-atom. Leibniz's monads are another, more developed precursor. And in Spencer's *Principles of Psychology* (1855) we find this: "There may be a single primordial element of consciousness, and the countless kinds of consciousness may be produced by the compounding of this element with itself . . . in higher and higher degrees." (1855/1897: 150) Clifford, though, was the first writer to explicitly promote a panpsychist mind-stuff theory.
2. For the early James, "mental combination" is impossible, whether at the level of mental atoms or individual people; the so-called group-mind does not exist. James responds to the challenge of mind-stuff by proposing his own alternative, "polyzoism" or "multiple monadism," which is just as strongly panpsychist as the theory of mind-stuff—more in the text that follows. Notably, by 1907 James had revised his view, and did allow for the possibility of mental combination and group mind.
3. For more on Bateson's panpsychism see the material that follows in chapter 8.
4. Prince summarized his theory and responded to some criticisms in "The Identification of Mind and Matter" (1904). He also explicitly stated that "consciousness and the brain process are identical" (ibid.: 447), making him one of the first identity theorists of the contemporary English era (this also emphasizes the close connection between identity theories and panpsychism; see later discussion on Feigl).
5. This notion, that a kind of moral deficiency leads to a materialist outlook, recalls an observation made by Paulsen in 1892. See chapter 5.
6. James (1909/1996: 299) comments that paranormal phenomena provide strong evidence for this view: "I find in some of these abnormal or supernatural facts the strongest suggestions in favor of a superior co-consciousness being possible."
7. The relevant material actually dates from a paper Royce presented in 1895.

8. Sprigge (1993: 546) believes that only a panpsychist interpretation of Bradley is intelligible.

Chapter 7

1. Cited on p. 198 of volume 2 of James 1920.
2. Strong (1903: 292) considers this third argument “absolutely conclusive.”
3. Montague (1912: 281) defines consciousness under this theory as “the potential . . . presence of a thing at a space or time in which that thing is not actually present.”
4. Montague continued to develop the relation between energy and mind. In “Human Soul and Cosmic Mind” he argued that *potential energy* is the physical manifestation of mind—with the obvious panpsychist corollary that *all* potential energy is mind: “If mental states are identical with forms of potential energy then the extent to which some sort of mental reality is present in the universe will be the extent to which potential energy is present—and that is everywhere.” (1945: 60)
5. Capek notes that it makes little difference whether we apply the term ‘panpsychism’, ‘organic view of nature’, or ‘proto-mentalism’—the net result is the same: “. . . there is no question that [Bergson] regarded physical events as ‘proto-mental’ entities” (1971: 308). For another perspective on this, see Bjelland 1981.
6. Elsewhere Schiller observes, like Teilhard, that “the single process of Evolution is a correlated development of *both* [matter and spirit]” (1891: 288). And he even anticipates Teilhard’s thesis of “complexity consciousness”: “. . . the growth of the complexity of material organization should be the invariable accompaniment of the growth of consciousness” (289).
7. Of note is Skolimowski’s idea of “evolutionary God” as an endpoint of universal evolution; see his 1993 work *A Sacred Place to Dwell*.
8. For a good discussion of this concept that “mind-object relations have analogues at each level of finite existence,” see Brettschneider 1964.
9. “Kozlov: Yevo panpsikhism,” in *Voprosy filosofii i psikhologii*, 58, 1901: 198–202.
10. It could be read simply as a form of classical idealism.
11. Depending on the specific type of atomic bonding, the atom may be said to be more or less changed as compared to the non-bonded state. For example, covalent bonding shares an electron between two or more atoms, and this fact could be used to argue that the bound atom is different than the unbound. But the difference is irrelevant to the argument at hand.
12. Rorty’s bias against panpsychism comes out loud and clear. He calls “futile” any attempt to “invoke panpsychism in order to bridge the gap between experience and nature” (ibid.: 6). Rorty sees the only valid approach as *contrasting* experience,

consciousness, or mind with nature, not in seeking to understand their connection and overlap. This is a typical objectivist, positivist approach. He claims that Dewey “dodg[ed] hard epistemological questions” in viewing nature as continuous with experience. Rorty’s answer is to create a break in continuity “between non-language-users (amoebae, squirrels, babies) and language users,” assigning mind and cognition only to the latter. But this approach has at least three major problems. First, what is the definition of ‘language’? Certainly any form of information exchange could constitute a kind of language. Second, at what point do babies acquire mind? Does mind gradually come into existence, or does it leap into being at the first utterance of ‘mama’? Either answer is fraught with difficulties. Third, one cannot help but feel that this distinction based on language is an even more arbitrary and indefensible break, a dodging of hard *ontological* problems.

The most definitive evidence of Rorty’s stance occurs in a footnote to the above article: “All I have to say about [panpsychism] is contained in ‘The Subjectivist Principle and the Linguistic Turn’. (ibid.: 211) The 1963 article contains not a single mention of the term ‘panpsychism’, nor even any discernible reference to the concept.

13. See chapter 6 of Berman 1981.

14. McHenry (1995) argues in favor of this view. L. Ford (1987: 43; 1995: 31) opposes it.

15. Elaborations such as the following are less than helpful: “The mental pole is the subject determining its own ideal of itself by reference to eternal principles of valuation autonomously modified in their application to its own physical objective datum.” (ibid.)

16. See Russell 1921: 25.

17. Hartshorne (1937: 222) made the same observation: “. . . only sheer agnosticism separates Russell from panpsychism.”

18. Personal communication, January 2003.

19. Personal communication, January 2003.

Chapter 8

1. However, it should be noted that each of these, especially functionalism and the identity theory, can be interpreted in a panpsychist light.

2. There is evidence that the ancient Greeks also experimented with rubbed amber and the attractive force of static electricity. This would have added further evidence that all things were animate.

3. Of particular note is the theory developed by the present author; see Skrbina (2001), and the brief discussion in chapter 9.

4. Coincidentally, scientists have discovered that the sun does in fact have an internal “resonance phenomena” that is surprisingly complex. The sun exhibits at least two modes of resonance: (1) a 16-month cycle of increasing and decreasing rotation near the solar equator (see Howe et al. 2000), and (2) a series of up and down surface vibrations, some 2,000 km in magnitude, centered on a period of 5 minutes (see Friedman 1986 or Lang 1995). These “solar heartbeats” point to an internal structure and complexity of a high order; and through the associated sun-spot activity they have a non-trivial effect on the Earth.

The sun has a number of other fascinating mysteries about it, not the least is the sudden and dramatic rise in the temperature of its atmosphere, from around 6,000°K at the surface to around 1,000,000°K at a height of 100,000 km above the surface; this astonishing increase has no known cause, and in fact appears to violate the second law of thermodynamics. Such physical complexity indicates, if nothing else, that our understanding of a complex body like the sun has significant gaps; thus we should not be too quick to dismiss the possibility of yet other unacknowledged aspects of its existence.

5. See for example Bateson 1972: 403 ff.

6. This panpsychist aspect of Bateson’s philosophy seems to be rarely acknowledged, even as the concept of ‘information’ is put to use in other panpsychist theories. Bohm (1986) spoke in similar terms, though without mentioning Bateson. More recently, Chalmers (1996: 293–301) developed his own information-theoretic form of panpsychism, but without discussing the related panpsychist views of either Bateson or Bohm.

7. He repeated this view in *Mind and Nature*: “I do not believe that single subatomic particles are ‘minds’ in my sense because I do believe that mental process is always a sequence of interactions *between* parts. The *explanation* of mental phenomena must always reside in the organization and interaction of multiple parts.” (1979: 103)

8. The main problem with this view is that mind is no longer truly fundamental, but apparently must radically emerge as soon as a system with “parts” appears—i.e. the first hydrogen atom, or perhaps the first proton (with quarks as parts). But this is a philosophical problem that Bateson neither resolves nor even acknowledges.

9. Bateson’s six criteria are as follows: “(1) All mind is an aggregate of interacting parts or components. (2) The interaction between parts of mind is triggered by difference. (3) Mental process requires collateral energy. (4) Mental process requires circular chains of determination. (5) In mental process, the effects of difference are to be regarded as transforms of the events which preceded them. (6) The description and classification of these processes of transformation disclose a hierarchy of logical types immanent in the phenomena.” (1979: 102)

10. In fact a similar claim was made a year earlier by Walker (1970). His article primarily argued that quantum processes in the brain (at the synapses) account for a

number of characteristics of consciousness, in particular its reality and non-physicality. At the end of the piece Walker observed that, more generally, “consciousness may be associated with all quantum mechanical processes” (175). In his concluding paragraph, he stated that “since everything that occurs is ultimately the result of one or more quantum mechanical events, the universe is ‘inhabited’ by an almost unlimited number of rather discrete conscious, usually nonthinking entities that are responsible for the detailed working of the universe” (176).

11. This is an interesting reversal of the Copenhagen interpretation of QM, in which consciousness causes quantum collapse. On this view, precisely the opposite occurs: collapse causes consciousness.

12. The nematode worm *C. elegans* is hypothesized to experience at most two “moments” per second, the simpler paramecium one per minute (Hameroff and Penrose 1996: 51).

13. However, even on this view a panpsychist interpretation is possible. Any physical system has at least a statistical likelihood of sustaining a superposed state until the critical threshold is reached. Even a single subatomic particle has a small but finite chance of sustaining superposition until OR occurs: “As OR could, in principle, occur ubiquitously within many types of inanimate media, it may seem to imply a form of panpsychism” (Hameroff and Penrose 1996: 38). And in fact it is a form of panpsychism, with the condition that the incidents of psyche are, for simple particles, extremely rare: “a single superposed electron would spontaneously reduce its state . . . only once in a period longer than the present age of the universe” (ibid.). Other theoretical estimates indicate a somewhat more frequent occurrence, such as once every 10 million–100 million years (Penrose 1994b: 332, 340). Still, a rare psychic event is psyche nonetheless.

14. The talk was published the following year. See Bohm 1986.

Chapter 9

1. Excepting perhaps the *vinculum substantiale*, the “substantial chain” that linked monads together. This was a late idea of Leibniz (ca. 1712); it is discussed further below.

2. Elsewhere Hartshorne called Leibniz’s position “the first clear statement of panpsychist theory” (1950: 444), apparently overlooking all the developments after the early Greeks—most notably, Renaissance naturalism.

3. Interestingly, Plato flatly disagreed with this view. For him, the only way to determine anything about the psyche in apparently inanimate objects was via rational contemplation. Recall the passage cited earlier, reflecting on the soul of the sun: “Everyone can see [the sun’s] body, but no one can see its soul—not that you could see the soul of any other creature, living or dying. [Such a thing] is totally below the level of our bodily senses, and is perceptible by reason alone.” (*Laws*, 898d)

4. Griffin believes he does have a compelling reason, in that the dominant monad preserves the *freedom of action* of the individual (1998: 97). The dominant monad both acts on and is acted upon by the body. This two-way causality is the basis of freedom, on the process view. There are at least two problems with this. One, it assumes a fairly conventional view of freedom of the will, when in fact there are other ways to conceive this, apart from determinism. Two, nothing Griffin says rules out the possibility that *all things have a dominant monad*. Just because we see no apparent spontaneity in rocks does not mean it is not there at some low level, or on some long time scale. This issue is discussed further below.

5. Hartshorne was not entirely enamored of Leibniz's philosophy. He criticized his notorious mechanistic stance, and was fundamentally opposed to the mechanistic worldview in general: ". . . mechanism and materialism are really two aspects of the same view—the view that the world is fundamentally dead, blind, uncreative, insentient" (1937: 180).

6. See Hartshorne 1937: 194–199.

7. See Hartshorne 1949.

8. This is his attempt at a brief survey of the subject, but it is woefully incomplete. It reveals his primary focus on Whitehead and the process philosophers.

9. The other main issues, not exclusive to the identity theory, are the meanings of such notoriously vague terms as 'physical' and 'mental'. Feigl spends considerable time examining these particular matters.

10. He also notes that, under the appropriate definition, "there is no doubt that certain types of robots or computers do think" (ibid.: 423).

11. For all of Wilber's impressive citation, his central work, *Sex, Ecology, Spirituality* (1995) is very light on citing his main predecessors. Cardano appears nowhere, nor does Spinoza, whose dual-aspect panpsychism has much in common. Even Koestler merits only a few brief mentions; surprising, considering that one of Wilber's core concepts comes from *The Ghost in the Machine*.

12. Salt molecules are formed by ionic bonding, in which the sodium atom gives up an electron to the chlorine atom. At what point in the transfer of the electron does a "salt interior" suddenly appear? And why just then? Separated sodium and chlorine atoms may exchange photons and gravitons (not electrons); why doesn't this kind of bonding create an interior?

13. Nash's other way to understand the rights of rocks is from a purely anthropocentric, self-interested perspective—"if man abuses the environment, the environment will destroy man." We had best respect the interests of rocks because they are inextricably bound up with our own interests.

14. In 1984, Sprigge published a related but less detailed article, “Non-human Rights: An Idealist Perspective.”

15. Sprigge largely repeated this argument in another article (1991b).

16. See for example Bakewell 1904a,b; Bawden 1904; Strong 1904a,b; Prince 1904.

17. One can find a number of other scattered references to panpsychism throughout the past 100 years, though most have had little impact. Such pieces include Salter 1922, Bush 1925, Robinson 1949, Sellars 1960, Francoeur 1961, Bjelland 1982, Kerr-Lawson 1984, Sharpe 1989, Rosenberg 1996, Hut and Shepard 1996, Frisina 1997, and Rosenberg 2004.

18. The final and more widely available edition was published in 1972, with the identical entry from 1967.

19. The new entry on panpsychism was written by panpsychist Timothy Sprigge, and is both more sympathetic and more balanced (though, unfortunately, less thorough of a survey).

20. See following chapter for further discussion of these arguments.

21. As this book was going to press, Strawson presented a paper titled “Realistic monism: Why physicalism entails panpsychism.” In it he expanded on a theme implicit in Strawson 2003a and 2003b and for the first time argued explicitly that, from the standpoint of true physicalism, panpsychism is the only intelligible conception of mind. The 2004 paper is one of the more significant events in the development of panpsychist philosophy in the past two decades.

Strawson 2003a contains the straightforward claim that, since materialism (the view that “every real, concrete phenomenon in the universe is physical”) is the most reasonable ontological view, and the phenomenon of experience is undeniably real and concrete, experience itself must be physical: “. . . the Experiential . . . ‘just is’ physical” (52). Consistent, realistic materialism must be a kind of dual-aspect monism in which “the physical” is viewed as comprising both mental (Experiential) and non-mental (non-Experiential) being. Strawson elaborates on the historical argument of Priestley and Kant: We know, intimately, the nature of *experiential* reality, but we are in a state of complete ignorance regarding the inner or essential nature of *non-experiential* reality; thus we have no good reason to presume that they are in any way incompatible. “In fact,” Strawson adds, “we really don’t know enough to say that there is *any* non-mental being. All the appearances of a non-mental world may just be the way that physical phenomena . . . appear to us.” (70) Strawson acknowledges that such a view is close to idealism, but it is more concrete, and more physical in some deep sense, than the traditional Berkeleyan form. More important, Strawson’s view suggests that mentality is an essential aspect of any viable materialistic monism. Mind must inhere in even the ultimate physical constituents of physical matter, and hence such inquiries into matter “deserve investigation—to be conducted with an appropriately respectful attitude to panpsychism” (75). Strawson closes the article

with a familiar quotation: "The stuff of the world is mind-stuff." (Eddington 1928: 276)

In the 2003b paper Strawson is more analytical, holding the same view but focusing on the specific nature of experience. Again, he makes just a single passing reference to panpsychism, this time in a note commenting on Dennett: "If some form of panpsychism is, as I think, the most plausible, parsimonious, 'hard-nosed' option for materialists, the way now lies open for a spectacular [makeover] of Dennett's apparently reductionist, consciousness-denying account of consciousness . . . into a fully realist, genuinely consciousness-affirming account of consciousness." (313)

In the 2004 essay Strawson finally elaborates on the panpsychist implications of his realistic materialism. Now preferring the term 'physicalism' to 'materialism', he reiterates his dual-aspect view that everything concrete is physical and that experience (at least in our own human case) is an intrinsic aspect of physicality. If everything possesses this dual-aspect nature, then a version of panpsychism must obtain: "If everything that concretely exists is intrinsically experience-involving, well, that is what the physical turns out to be; it is what energy (another name for physical stuff) turns out to be. This view does not stand out as particularly strange against the background of present-day science, and is in no way incompatible with it." (2004: 4) In other words, "it's probably time to admit that in my understanding real physicalism doesn't even rule out panpsychism—which I take to be the view that the existence of every real concrete thing involves experiential being even if it also involves non-experiential being" (ibid.). Strawson immediately clarifies his position: "I think it can be shown that something akin to panpsychism is not merely one possible form of real, realistic physicalism, but the only possible form, and, hence, the only possible form of physicalism *tout court*." (5)

The central argument for such a panpsychist physicalism lies in the inconceivability of the emergence of mind. Strawson points out that most physicalists are emergentists; they want to hold that physical matter is wholly and utterly non-experiential and also that experience is a real, concrete, physical phenomenon. In other words, they hold that the physical phenomenon of mind emerged, in a brute sense, from some non-mental (yet still physical) stuff. For Strawson this view is nonsense: "I think that it is very, very hard to understand what [this kind of emergence] is supposed to involve. I think that it is incoherent, in fact, and that this general way of talking of emergence has acquired an air of plausibility (or at least possibility) for some simply because it has been appealed to many times in the face of a seeming mystery." (8) Strawson's anti-emergence argument recalls that of Nagel (1979), but with an emphasis on the supposed dependency of the mental on the physical. If mind emerges from the non-mental physical, it must do so under a condition of "total dependence." This condition of dependency, combined with the assumption of a completely physical universe, entails that mind must be an intrinsic quality of the physical. The physical must be, at least, proto-experiential, in which case it has in fact a mental aspect—and hence, panpsychism is true. Any "radical kind" emergence of mind is impossible because it is inconceivable. Emergence "*cannot be brute*"

(11), because “brutality rules out nothing at all.” Reminiscent of a remark by Wright, Strawson observes that any supposed brute emergence is in fact “not emergence at all; it is magic” (13).

Addressing the conventional physicalist philosopher, Strawson asks: “Why on earth commit oneself to [a non-experiential reality]? Why insist that physical stuff in itself, in its basic nature, is essentially non-experiential, thereby taking on (A) a commitment to something . . . for which there is *absolutely no evidence whatever*, along with (B) the wholly unnecessary (and incoherent) burden of brute emergence, i.e. magic?”

For Strawson, this panpsychist worldview clearly involves a conceptual leap:

. . . now I can say that real physicalism entails panpsychism. All physical stuff is energy, in one form or another, and all energy, I trow, is an experience-involving phenomenon. This sounded crazy to me for a long time, but I am quite used to it, now that I know that there is no alternative short of dualism, a view for which (as Arnauld saw) there has never been any good argument. . . . Realistic physicalism entails panpsychism, and whatever problems are raised by this fact are problems a real physicalist must face. (15–16)

Among the more serious concerns is the combination problem, the notion that “many subjects of experience can somehow constitute a single ‘larger’ subject of experience. In general, we will have to wonder how on earth macroexperientiality arises from microexperientiality. . . .” (16). Strawson defers on addressing this and other concerns, but he clearly suggests that they are neither fatal nor insurmountable.

22. Searle is perhaps overly sensitive to the subject, having been himself accused of developing a panpsychist theory of intentionality by Martin and Pfeifer (1986).

23. Disregarding for the moment the argument put forth in Skrbina 2001.

24. A brief mention is merited for Lockwood’s 1989 book *Mind, Brain, and the Quantum*. Following Churchland’s approach, Lockwood employed the methodology of phase-space analysis for his discussion of mind. He concluded that a form of the identity theory was true, one in which mind does not reduce to matter, but rather “represents the physical world as infused with intrinsic qualities which . . . constitute the basis of its causal powers and which include immediately introspectible qualities in their own right” (1989: 159).

Chalmers (1996) and Seager (2001) have suggested that this view is in itself panpsychist. But Lockwood is very evasive in his terminology. At one point he argues for “a conception of the world as, in some sense, a sum of perspectives” (1989: 177), and later adds that “I wish to argue that, in consciousness, that intrinsic nature makes itself manifest” (238). It is not clear whether such a view qualifies as panpsychism, as he defines it. Other passages seem contradictory. He claims that consciousness comprises only a portion of these intrinsic qualities: “The qualities of which we are immediately aware, in consciousness, precisely *are* some at least of the intrinsic qualities . . . specifically, states and processes within our own brains.” (159) And he speaks negatively of the panpsychist view in his discussion of unsensed qualities: the “major advantage of holding that phenomenal qualities can exist unsensed” is that “it

enables one to halt this slide into panpsychism” (170). If Lockwood’s position is a panpsychist one, it is a very tenuous and vague interpretation.

25. In fact, Peirce (1892c) anticipated this conception of mind. He identified mind with the dynamic sensitivity and instability of certain physical systems.

26. Penrose (1989) nicely elaborates on the universality of phase-space analysis. See especially pp. 176–184.

27. On this view, it is incorrect to say either that brain is causal on mind or that mind is causal on brain (both of which views, incidentally, are fraught with philosophical problems). Rather, this theory suggests something approaching a form of causal nihilism, in that nothing like the classical notion of causation is advocated. (It could conceivably be described as a “dual concurrent causation,” but this suggests something too close to conventional causality.)

28. Elsewhere (2001) Skrbina has argued that there exist two senses of emergence: *qualitative* and *participatory*.

Qualitative emergence arises from the nature of chaotic systems. The strange attractor is a pattern in phase space, representing the collection of states that a chaotic system passes through as it changes in time. Such states are restricted to a bounded region of phase space, and typically form a complex (and often beautiful) fractal-like pattern. Such a picture represents a system that is both dynamic and yet exhibits large-scale stability (physical and temporal).

On the theory in question, phase space is re-interpreted as *mind-space*. The motion of a point in phase space is thus a movement through myriad, non-repeating mental states. In this sense, *mind is always new*. Mind is always in the process of change-without-repetition, i.e. in the process of *becoming*. It continually achieves new states, new experiences, and new feelings.

The second sense of emergence, participatory emergence, is a recognition that the various types of physical being have passed from a state of non-existence into existence over some given period of time. At one point in the distant past neither people, oak trees, rocks, nor the Earth existed per se, and now they do; they represent new forms of participations between the energy quanta that are present in the universe. As they evolved into being, their noetic systems grew correspondingly in intensity and distinctness.

As any system of objects comes to interact more strongly, the corresponding system of mind grows in intensity. This change is reflected in the phase space picture by the fact that more particles of exchange are represented in the system. A piece of sandstone is a “unity.” Its grains of sand interact strongly, exchanging electromagnetic photons of force. Likewise a pile of sand on a table is a unity. Its grains interact but to a lesser degree. They still exchange photons, and they still exert a force on one another that maintains the unity. In both the sandstone and the pile, the system is definable by the state of every quanta of energy in some very high-dimensional phase space. At the highest level, it can be described by a space in which the grains are

considered as units, and thus the state variables could be expressed by the instantaneous positions and velocities of each grain.

The pile of sand (and the piece of sandstone) can be represented by a unity point that is interpreted as noetic in nature. As the energy state of the pile changes, the point in phase space moves accordingly. A stable pile would have a distinctive attractor pattern, or personality. All the grain velocities would be essentially zero, and their position coordinates would be fixed, reflecting the shape of the pile. At the total (quantum) level, though, forces would be continually interchanged, and hence the total system would dynamically evolve with a distinctive pattern.

If we add grains to the pile, the phase space will expand in dimensionality, and the quasi-attractor pattern will respond accordingly. Under certain conditions, a growing sand pile will reach a critical state (see Bak and Chen 1991), poised on the edge of a series of mini-avalanches. As forces build up to a critical configuration there occurs a gradual change in the quasi-attractor pattern. When an avalanche occurs, forces are realigned, resulting in a new and more stable configuration, both physically and in phase space.

Now if we vibrate the table and cause the pile to disperse, both the “top level” (grains as units) and the “total” (quantum-level) phase space patterns respond accordingly. If we stop vibrating momentarily at a point when the grains cease to physically touch, we no longer have a pile, but we still certainly have a “system of grains.” The top level view would again be a stationary point, but at some different location in space—a different “quale,” reflecting a new experience of the world. The quantum-level pattern, though, would be different: fewer and smaller forces exchanged, lower dimensional phase space, lower intensity mind—clearly different than the pile. Mind would have devolved, or de-emerged.

Finally, scatter the grains across the room. The mind of the pile diffuses to an extremely low level, completely imperceptible to us. We no longer see a system of grains, perhaps we don’t see even a single grain. Yet the phase space description persists. The inter-grain exchanges are almost, *but not completely*, zero. The mind of the collective still exists, but has been almost totally subsumed by the background configurations of other structures of matter.

Emergence of mind, in the participatory sense, is thus not a question of coming into being, but rather of growing intensity, of becoming more apparent and perceptible, of having a greater effect on the world.

29. Seager had previously, and briefly, indicated a loose sympathy toward panpsychism. In *Metaphysics of Consciousness* he noted that panpsychism “doesn’t seem outright impossible” (1991: 106), and suggested that it “*might* make sense” (241) of certain problems of mind and determinism. Considering the standard hostile attitude toward panpsychism, Seager’s words constitute a gushing endorsement.

30. Seager was explicitly “diffident” in his support of panpsychism. He reiterated the view in *Theories of Consciousness* (1999: 240). Recently, however, he seems to have moved away from it (personnel communication, April 2002).

31. Following Whitehead (1925: 103, 110).

32. This unification of objective modes seems problematic. How can the unification of multiple *objective* modes result in a collective *subjective* experience? The process philosophers have to date offered no satisfactory account of this.

33. John Wheeler also deserves some credit for furthering this line of thought. He was among the first to conjecture that information was a potential ultimate ground of reality. (See Wheeler 1994.) His acceptance of the quantum as an core principle of the universe suggested that quantum collapses, driven by some kind of observer-process, were universally present. Given the speculative connection between quantum collapse and conscious observer, it is natural to consider the universe as filled with elemental conscious events. In “It from Bit” (1994: 307) he suggests that “we may someday have to enlarge the scope of what we mean by a ‘who’”—i.e. a “who” as any observer or system that induces a quantum collapse. Recently he has admitted that he “find[s] it hard to draw a line between the conscious observer and the inanimate one” (2002).

Chapter 10

1. Michael Tye (2000) is one of very few contemporary philosophers who do in fact countenance drawing a line somewhere. He tackles the issue head-on while holding to the standard view that “somewhere down the phylogenetic scale phenomenal consciousness ceases” (2000: 171). The Problem of Simple Minds, as he calls it, is the problem of finding the place to draw a line, and Tye believes this to be solvable. In his PANIC theory, mind resides only in those entities that possess inner states displaying Poised, Abstract, Nonconceptual, Intentional Content. Plants fail this test (“there is nothing it is like to be a venus flytrap or a morning glory”), as do paramecia (who give only “automatic responses, with no flexibility in behavior”). Nor do the lower insects qualify: “. . . there is no clear reason to suppose that caterpillars are anything more than stimulus-response devices” (173). Fish, however, are different. They “do not typically react in a purely reflexive manner.” They learn by trial and error, and can remember their lessons for substantial periods of time. Fish have “a stored memory representation that has been acquired through the use of sense organs and is available for retrieval” (176), and thus they possess inner mental states and are phenomenally conscious. Tye also argues that honey bees are a kind of higher-order insect that have similar memory retention capabilities, and thus are conscious as well: “. . . honey bees, like fish, *are* phenomenally conscious: there is *something it is like* for them” (180). As to the further line-drawing question regarding which insects are conscious and which are not, Tye defers: “Where exactly in the insect realm phenomenal consciousness ends I shall not try to say.” (ibid.) Whatever the shortcomings of his PANIC theory, Tye is at least willing to acknowledge that, on the standard view of emergent mind, a line-drawing exercise is demanded, and he makes a brave attempt at it.

2. For a short but inspired response to Bennett, see Salter 1922.
3. Seager's objections in "Consciousness, Information, and Panpsychism" (1995) are refined somewhat in his Stanford Encyclopedia of Philosophy entry (2001).
4. However, the recent panpsychist theory of Hameroff (1998a,b) has been offered up as a testable theory.
5. Griffin's panexperientialism clearly can avoid some of the obvious implausibilities, in that he denies mind to rocks, telephones, and other aggregates. Thus, he can justifiably claim to represent one of the more plausible versions of panpsychism—though at the expense of ontological consistency.
6. Schopenhauer, it must be granted, was one panpsychist who developed a pessimistic outlook.

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