

PART II – PANPSYCHISM, HYLONOISM, and the HISTORY of PARTICIPATION**Chapter 5 – Panpsychist Perspectives from the Ancient World**

Having established a background of terms and concepts, I now will continue by exploring in detail the participatory nature of mind and matter. I have argued that mind and matter are intimately linked at a fundamental ontological level, so the discussion of one will necessarily involve a discussion of the other. However, I want to examine each of these two aspects of Participatory Reality separately, in order to better illuminate the relevant issues of each perspective.

Part II focuses primarily on the *Partimens*, the realm of Participatory Mind. Here I will trace the history of panpsychism as it relates specifically to the concept of participation. I hope to show that the two lines of thought are deeply connected in a number of important thinkers. Part III will focus on the *Partimater*, or the realm of Participatory Matter.

1) Panpsychism and Participation

Panpsychism is the view that all things have a 'mind', or a mind-like quality. This rough definition will be refined shortly, but it does give the general flavor of this particular concept. The term derives from the Greek *pan* ('all') and *psyche* ('mind' or 'soul'). It is not a single theory, but more of a 'meta-theory': a classification of several philosophical positions, all of which attribute mentality to every object in the universe¹, or to matter in general.

For most of humanity, for most of history, panpsychism has been an accepted and respected view of the world. As I mentioned in Chapter 1, the trajectory of Western civilization has been that of a divergence from a panpsychic, animist vision of the world. This has allowed for tremendous technical and analytic progress, but it has also led to a sense of detachment and isolation; the human mind is seen today as a Great Exception to the natural order of things, either as a completely spiritual entity (for dualists) or as an astonishingly unique act of emergence (for materialists). Panpsychism offers a different

resolution to the question of mind, an approach that deeply reintegrates the human being into the order of nature.

The fact that panpsychism has been shared throughout the centuries by thinking people and the common man alike, Eastern and Western cultures alike, indicates that it should not be dismissed out of hand as most contemporary philosophers would have it. Rather, there is a need to understand its origins and how these relate to contemporary ideas and needs. In this chapter and the next I give an overview of how panpsychism has evolved in the past 2500 years of Western civilization, how this is connected with the emerging Participatory Worldview, and indicate how my own theory of hylonoism relates to this stream of thought.

This historical background and comparative study of panpsychism is vitally important to the discussion of the Participatory Worldview, for the following reasons:

- 1) ***Panpsychism, in itself, is a thoroughly participatory philosophy.*** It is at once an ontology and a theory (rather, meta-theory) of mind. It intimately links 'being' and 'mind'. Panpsychism argues that the human mind is not an anomaly in the universe, but that the human and the non-human share a certain fundamental quality. Further, it is by virtue of this shared quality we come to know the universe, and find ourselves at home in it.

- 2) ***Panpsychist philosophy, as it has been developed historically, has a number of important links to the philosophical concept of participation.*** One finds numerous instances in which participatory ideas and panpsychist ideas occur in the same individual; this alone suggests a deeper connection. The core concept of participatory philosophy – that the mind is an active participant in the nature of reality – seems naturally to lead to a view in which all things possess some power of 'mind'. One sees this in a wide variety of panpsychist philosophies: from the ancient Greek doctrine that 'everything is full of souls', through the Medieval theories of Telesio and Campanella ("knowledge is participation"), Spinoza's panpsychic pantheism, Leibniz's spiritual monads, Fechner and the German

idealists, Whitehead and Russell's process philosophy, Teilhard's spiritualism, up to modern times.

- 3) ***Panpsychism finds support from within the Mechanistic Worldview.*** From the mid-1800's on, advances in science and physics have led to a picture of mind that is at least compatible, and often supportive, of a panpsychist view. Evolution was the first major development of the modern era, but theories from quantum mechanics through chaos theory also argue for this interpretation. I will address this issue further in Part III.
- 4) ***Panpsychism brings into sharp relief the contrast between the Mechanistic and Participatory Worldviews.*** The history of panpsychism has often served as a central contrast to the mechanistic or materialistic theory of mind and reality. Usually in opposition, occasionally in agreement, panpsychism acts as a marker signaling important developments in both worldviews. Panpsychism is a classic example of a *paradigmatic shift in thinking*, as it calls for a fundamental reinterpretation of natural phenomena. It sees different 'facts' in a new light, and reinterprets natural phenomena in a way not possible for materialism. It vividly demonstrates a new way of seeing the world.
- 5) ***Panpsychism bears directly on my theory of hylonoism, and a historical examination of panpsychist ideas will serve to further articulate it.*** Hylonoism is strongly panpsychist, and a deeper understanding of it can be gained by comparison to similar theories of the past. A look at the connection between past and present finds many areas of agreement, and this suggests that there is a deep sense of truth about hylonoism and the panpsychist view.
- 6) ***Panpsychism is philosophically valuable, because it offers solutions to mind-body problems that dualism and materialism find intractable.*** Present philosophy of mind is dominated by materialist theories, but they cannot adequately address issues of consciousness, qualia, or the role of mind in the universe. Materialist theories cannot account for the 'emergence' of mind.

Dualism is the traditional alternative, but it too suffers from long-standing weaknesses and unanswered questions. Panpsychism offers a third way.

- 7) *Panpsychism is perhaps the most under-analyzed and under-appreciated philosophical position in the history of Western philosophy, and is long overdue for a detailed treatment.* It is rather astonishing that a philosophical position held by so many major philosophers throughout history has had virtually no in-depth study: no detailed analyses, no thorough survey of positions, little serious discussion of its merits. What follows here, as brief as it is, captures many of the central elements of panpsychist philosophy in Western culture.
- 8) *Panpsychism offers, after all, a sympathetic and compassionate picture of the world.* It stands in sharp relief to the sterile, detached, inert worldview of mechanism and materialism. As such, panpsychism holds promise to alleviate the damage we have seen in recent years, and to open up new lines of thought and research methodology. Ultimately it can offer support to new values for society, ones that may lead to a more sympathetic and compassionate world.

Before moving ahead with my historical overview, I want to take a moment to clarify what is meant by panpsychism, and how I see this term fit within the larger context.

2) Panpsychism Defined

Philosophical arguments often turn on interpretations of definitions, and this is particularly problematic with issues of mind and consciousness. In addition to the obvious problem of lack of agreement on the base definition of 'panpsychism', we have the added complication that the terms used in the definitions are also ambiguous – 'sentience', 'consciousness', 'soul', etc. This is perhaps unavoidable, but it is critical that any attempt at definition of a philosophical term like panpsychism include an adequate explanation of the terms used in the definition. To add to the confusion, the definitions of these terms offered by various writers often use other, equally ill-defined terms, so that a person reviewing the literature may find himself faced with a mass of self-circular

definitions, which ultimately rely on some ground-level understanding of our common-sense notions of these terms.

I have attempted a fairly detailed description of my new concept of 'hylonoism'. Hylonoism, as I have outlined it in the preceding chapter, is a universal theory of matter – namely, that all organized matter has a singular identity for itself, that it interacts and experiences the world in a manner that is consistent with how we, as conscious beings, experience the world. Hylonoism reinterprets the human mind in a very specific and universal way, and in the process it sees mind as part of a logical and natural continuum with all levels of physical structure and organization.

To minimize the terminological concerns I offer in this section some explanation of the various terms associated with panpsychism. But the first matter is to define the term 'panpsychism' itself. The philosophical literature cites a number of definitions. The 'official definition', if one can speak of such a thing, would presumably be the one from the recently published (1998) 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, 1998: 195).

However, one rarely finds the same definition twice. Other recent examples include: "everything has a soul, or... a rudiment of a soul" (Popper & Eccles, 1977: 15); and "all objects in the universe... have an 'inner' or 'psychological' being." (Edwards, 1972b: 22). Even very recently we find inconsistent and sloppy definitions; Chalmers (1996) defines it once as "everything is conscious" (p. 216), and elsewhere as "everything has a mind" (p. 298), apparently regarding the two as equivalent. In spite of these confusions, we may perhaps agree that the *general* meaning is clear: all things have a mind, or mind-like qualities. Unfortunately, the fact that we may have a general understanding of the meaning is not always of much help.

In an effort to clear the air, let me offer my 'definition'. Panpsychism, as I see it, has three essential characteristics. One, that objects have experiences *for themselves*, that is,

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the mind-like quality is something internal to, or inherent in, the object. Two, 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. Three, an 'object' is a particular configuration of mass/energy, and therefore any configuration of mass/energy, any 'system', qualifies in the same sense. So I see panpsychism as follows: *all objects, or systems of objects, possess a singular inner experience of the world around them.*

To clarify this further, let me offer a few words on what panpsychism does *not* mean. In my view, it does *not* mean 'consciousness'. This term is highly anthropocentric, and its meaning too closely associated with human mental states to serve as a general attribute of reality. Consciousness means, to most people, the aware and alert mental states that we all experience in our waking hours. This meaning is too entrenched, and it would be pointless to fight it. I accept 'consciousness' as a real and meaningful concept, and as a substantial philosophical problem. But I also accept that animals may be said to be conscious; and I allow that it is probably inappropriate to use the term in reference to plants or inanimate objects. Consequently, it is not suitable for use as a general feature of material reality.

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. Let me hasten to add that I, too, would take issue with such a claim, because for me consciousness is by definition an animal quality. Even when we might apply it – as some philosophers in fact do – to plants or inanimate objects, we 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, so to attribute to them ‘consciousness’ seems ridiculous. This is our human bias. To overcome this anthropocentric perspective, we need 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 mentality are taken as particular manifestations.

This is partly my motivation for coining the term ‘hylonoism’ -- to escape the inevitable human bias. ‘Consciousness’ is perhaps the most notoriously biased term, but other terms suffer this to varying extents. As we saw in the definitions of ‘panpsychism’ above, there are several terms used in reference to mind, all with slightly different shades of meaning. In addition to 'consciousness', 'mind', and 'soul', a brief survey of the terminology will unearth such terms as: ‘self-consciousness’, ‘mentality’ or ‘mental states’, ‘thoughts’ or ‘thinking’, ‘feelings’, ‘experience’, ‘inner life’, ‘what-it-is-like-to-be-something’, ‘qualitative feel’ or ‘qualia’, 'will', ‘phenomenal feel’, ‘awareness’, ‘psyche’, 'cognition', 'perception', 'sense' or 'sentience' – quite an astonishing array of meanings and intonations, and many a philosophical argument has been fought over the minute subtleties of these words. All these terms evolved in a human context, and consequently all have varying levels of humanistic bias.

For me, panpsychism does *not* mean 'soul', in the traditional theological sense. This point is particularly important to clarify, because of the standard translation of *psyche* into 'soul' – which today would imply a deeply theological worldview. Some might see 'pan-soul-ism' as an attempt to retain some remnant of religion, a kind of antidote to the soulless world of secular materialism. This is certainly not the meaning of contemporary writers. For this reason, 'panpsychism' might better have been replaced by some term such as 'pan-nous-ism' (as I in fact have done with my term hylonoism). Be that as it may, the philosophical literature of the 20th century – certainly since Hartshorne's writings in the mid-1930's – have adopted the word panpsychism, so I continue with it. Personally though, I reject any definition that uses the term 'soul' because of both the theological insinuations and the anthropocentrism inherent in the word.

Panpsychism does *not* mean 'cognition' or 'thinking'. As I take it, thinking involves purposeful planning, considering of alternatives, holding of beliefs; this I see as attributable only to animals, in various degrees. Cognition refers primarily 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 I believe this adds little value to the discussion.

And, panpsychism does not mean 'emotion'. Emotions as commonly understood are the responses of living organisms – to which I would include both animals and plants. The actual feeling of a particular emotion, like fear or affection, naturally depends on the nature of the organism. It would be inappropriate to suggest that all living things felt 'love' or 'pain' in any sense in which humans feel it. But I take it as probable that all life experiences something that is sufficiently close to our own emotions to classify them under the same general heading. Let me note in passing that it is an interesting conjecture whether *systems* of living organisms, like an ecosystem or the Earth, may be said to feel 'emotions' (personally I am sympathetic to such a view).

The best attempts to date at overcoming this 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 or experience. It is my hope that hylonoism will succeed in overcoming this bias by (a) giving a concrete picture, though phase space analysis, of what, for example, a hylon is, and (b) demonstrating that it is a truly general quality of dynamic systems, and thus a *larger* concept than any and all human-oriented conceptions of mentality.

In spite of these problems, certain terms can reasonably be applied to all things, if we are careful with our usage. For example, 'experience', if understood as exposure and reaction to external events, clearly applies to objects generally. Other terms, like 'mind' or 'mentality', can be reasonably defined (I claim) to be universal properties. In general, I will try to avoid the most biased terms, and use words of my own construction as necessary.

It may perhaps be useful to construct a sort of hierarchy of terminology, ranging from the most human-like to the most universal (in my context). This is by no means the commonly accepted order, and certainly every philosopher would construct a different arrangement. This is purely my subjective ranking of terms, for the purpose of clarifying my usage of these terms.

Humans: Self-consciousness, 'soul', cognition.

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All Animals: Thinking, consciousness.

Animals and Plants: Sense, awareness, sentience, emotion.

All Animate and Inanimate: Experience, mind, mentality, what-it-is-like, qualia.

There is of course considerable overlap at the boundaries of these four categories. The higher primates, for example, probably have most all attributes of humans, including some level of self-consciousness and certain aspects of cognition. As I explore the details of various panpsychist philosophies, I will add some detail to the meanings of these words in the hopes of moving toward a consensus on their application. Again, I offer this only by way of clarifying some common misconceptions. I will generally try to avoid the more contentious terms. The remainder of this thesis does not turn on the above distinctions.

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Definitions of panpsychism are one source of confusion; synonyms are another. Let me briefly mention some philosophical terms that are related to panpsychism, and often mistaken for it. First, there is *animism*. Deriving from the Latin *anima* ('soul'), this term is used for the belief that everything in the universe has a spirit or soul. It is usually connected to pre-Christian or tribal religions, and has a strong air of superstition and mystery. Most commonly, it is used in a primitive, pre-scientific sense, in which objects have 'spirits'. These spirits typically have a human-like nature or personality, such as the 'spirit of the tree' inhabiting a tree or the 'water-spirit' inhabiting a lake. The human-like spirits typically would exhibit all the properties of a rational person, perhaps including intelligence, belief, memory, agency, and so on. It is this highly anthropomorphic nature that characterizes animism, and that clearly distinguishes it from hylonoism, which specifically does *not* attribute high-level capabilities to non-human entities. Animism thus is taken as having little philosophical standing.

Second, there is the term *hylozoism*, from Greek *hyle* ('matter') and *zoe* ('life'); it is the doctrine that all matter is intrinsically alive (sometimes used synonymously with the terms *panbiotism* or *panzoism*, and even, incorrectly, *vitalism*). Note first of all the important distinction between *hylozoism* and my term, *hylonoism* -- 'everything is alive' vs. 'everything has a singular noetic quality'. In *hylozoism*, every rock, every atom, every particle, is claimed to have some degree or sense of life. Introduced as a philosophical term in the 17th century, *hylozoism* has recently been used most often in reference to the early Greek philosophers, especially Thales, Heraclitus, and Empedocles -- of which I will give details later on. Having, therefore, this pedigree of philosophy, it is more frequently discussed, though typically in a historical (and negative) sense. I too will use *hylozoism*, but only in the historical sense, as I do not see it as a valid or helpful term in the modern usage.

A third term is *pansensism*, meaning 'everything (*pan*) senses' (synonymous with the infrequently used term *hylopathism*). This word is typically associated with the panpsychist views of Telesio, Campanella, and Mach, but one also finds Peirce referring to his own view as that of 'hylopathism'. A key issue is how one defines 'sense'. 'To sense' generally takes on a bio-centric meaning, i.e. a product of one of the living sense organs of a plant or animal. 'Sense' can take on a wider definition, though, approaching the general definition of 'experience' that I offered above. In this case, it may become quite close to my meaning of *hylonoism*. However, in general the ability to sense is most appropriately associated with life; hence, to speak of inanimate things as sentient or sensing is to introduce unnecessary complications and perhaps inconsistencies.

Then there is the word *pantheism*, which means literally that 'all' (*pan*) is 'God' (*theos*) -- God is identical with everything that exists, i.e. the universe. What this actually means is not entirely clear, and in fact a 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 typically 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. Spinoza is the philosopher perhaps most typically associated with pantheism, as he equated God with Nature. But he was also a panpsychist, as he claimed that "all things are animate in various degrees" (Spinoza, op cit.). For my purposes, I will not be addressing issues of religion here, although I would like to note that, if 'divine' is taken to mean 'sacred,

or deserving of highest respect’, then I do in fact hold to the basic position cited above, as I think many people today do. A hylonoist account of the universe does, in fact, support such a reverential position, and I would find it a natural extension of both my theory and the Participatory Worldview.

A fifth term is *panentheism*, which is closely related to pantheism, and often confused with it. The etymological meaning is ‘*pan-en-theos*’, ‘all in God’, or more simply, God is in all things. To distinguish from pantheism, the common analogy is a sponge: just as water can completely saturate a sponge without being the sponge, so too God is said to saturate all things while at the same time being a transcendent and unchanging Deity. Panentheism can be confused with panpsychism, since (on the traditional view) God is omnipresent, and if God represents ‘spirit’ or ‘mind’, then all things could 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 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 theist 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 as I see it; the only remaining issue is whether or not one views such universal, pluralist mind as a deity; if so, then panpsychism can be seen as a variation of panentheism.

And last, the word *panexperientialism*, the doctrine that ‘everything experiences’. This term was coined by process philosopher David Ray Griffin in 1977 (see Griffin, 1977: 98, or 1998) to define a particular version of panpsychism deriving from Whitehead and Hartshorne, with strong foundations in the thinking of James. Whitehead took ‘events’, or, 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 the most fully articulated form of panpsychism. Hartshorne, Griffin and other process philosophers deserve credit for keeping alive the debate over panpsychism in general, and they have marshaled a large amount of evidence both for their position and as criticism of the dominant materialist and dualist ontologies; for the most recent account, see Griffin (1998). Panexperientialism is quite close in spirit to hylonoism except for one major point, which I will discuss in detail later. In a nutshell,

panexperientialism has a fundamental inconsistency; it attributes experience not literally to all things, but only to “genuine units” or “true individuals”. For reasons I will explain later, this to me is a false distinction; any aggregate qualifies as an individual, in the hylonoetic sense. This is the only way to maintain consistency.

I trust this provides a necessary clarification and distinction, because, as I have said, often times debate over a philosophical position either degenerates into a semantic argument or ends up inconclusive because the two parties were not able to meet on common ground. There are much deeper issues to tackle than semantics when it comes to philosophy of mind.

Finally, let me explain briefly my earlier statement that panpsychism is a 'meta-theory'. Panpsychism occupies an interesting position in the overall logical geography of mind, because it parallels the 'standard' (i.e. anthropocentric) theories. Each standard theory offers a different strategy for explaining how the human mind interrelates to the brain and body, and panpsychism can, in principle, adopt virtually any one of them as well. It simply would *generalize the strategy and apply it to all matter*. The only strategies not relevant to panpsychism would be those of the eliminativist type, which deny mentality altogether, or those which expressly require a biological or human embodiment, such as Searle proposes. This point will become clearer as my investigation progresses.

With this background in place, I will now begin to survey the evolution of panpsychist thought from the time of the pre-Socratics through the present. The history of panpsychism is a central element of the history of the Participatory Worldview, and it also serves to illuminate the details of hylonoism. Along the way, I explore some related themes, including the emergence of the Mechanistic Worldview. I also continue to develop the importance of the concept of energy and its role in the evolution of structure.

3) 'Hylozoism' and the Ancient Greeks

Pre-Christian era Greece may be divided into three periods: (1) pre-Socratics, (2) Plato and Aristotle, (3) the Stoics. A timeline showing the lives of the prominent individuals is given in Appendix A. Each of these groups of thinkers has unique perspectives on

panpsychism in particular, and on the concept of participation in general. Let me mention here that I have largely excluded Socrates (470-399 BCE) from this discussion, because first, he appears to not have addressed in detail the metaphysical issues I am discussing here, and second, it is difficult to distinguish his ideas from those of Plato; I will thus treat Plato as the chief representative of the 'Socratic/Platonic' metaphysical system.

Pre-Socratic philosophy covers a range of roughly 200 years, from the birth of Thales in 625 BCE to the death of Socrates in 399 BCE. It was in this time that philosophy in the modern sense was born. There were some dozen or so major philosophers² who emerged from the Greek world in these two centuries, and they are traditionally grouped into various subdivisions. The first three men of whom we know any details – Thales, Anaximander, and Anaximenes – are known collectively as the Milesian philosophers. Following them came the lone and mysterious figure of Pythagoras (570-495 BCE), a man who single-handedly created his own school of thought. Then there are the representatives of the Eleatic tradition, in the persons of Parmenides, and Zeno of Elea (505-450 BCE). Contemporaneous with the Eleatics, and representing the 'school of change' was Heraclitus. Next came the "pluralists", Anaxagoras and Empedocles, followed by the "atomists", Leucippus and Democritus³. With perhaps the exception of two of these men (Anaximander and Zeno), all advanced ideas relevant to our discussion of participation and panpsychism; *all were, to some degree, panpsychist*.

Let me note at the outset that the term 'hylozoism' that is so often applied to the Greeks is misleading. This word indicates that the quality shared by all things is 'life', but in fact one finds no such reference to *zoe* (life) in their writings⁴. Rather, it is a more spiritual or mind-like quality that is attributed to all things, as I shall demonstrate.

As the 'first Western philosopher', it is significant that **Thales** is known for his panpsychist views; this fact gives a strong indication of the sense in which it was integral to the ancient world. There are only a few remaining fragments of his thought, but his intentions come through quite clearly. Two of these fragments are of interest, and both are recounted by Aristotle in his De Anima. First, the famous passage on the loadstone (magnet):

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And 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 loadstone has a soul because it moves iron. (405a19).

Thales offers two distinct ideas here. First, that 'soul' is the source and cause of motion. Second, that, therefore, the loadstone itself has a soul because it can attract iron. And it is important to keep in mind here that Aristotle's (and Thales') original term *psyche*, though often translated as 'soul', is virtually synonymous with the modern term 'mind' (though with the connotation of a 'divine life force').

It is clear that people and all animals possess a soul/mind because they have the power of movement. Of course, many things in the world around us move – wind, rain, falling rocks, stars. The next issue, then, is whether *all* things that move have souls. It seems that Thales saw nothing fundamentally unique about the loadstone; rather it was simply a more pronounced effect of something that was universal in nature. We know this by the second important 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).

The word 'gods' (*theon*) is interesting, as it shows the divine nature of the *psyche*, the soul/mind. *Psyche* is seen by Thales as interpenetrating all things, and dwelling in them individually and plurally, rather than as a single divine entity. This is the essence of panpsychism.

Anaximenes put forth the *pneuma* (air) as the underlying *arche* of the cosmos. *Pneuma* has a number of related meanings, many of which correspond closely with that of *psyche*; in addition to 'air', it can mean 'breath', 'soul', 'spirit', or 'mind'. The *pneuma* penetrates and underlies all things, and so a logical extension of Anaximenes' system would entail that all things also are endowed with a spirit or soul. He makes explicit connection between *pneuma* and *psyche* in the following fragment: "As our soul...being air, holds

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us together and controls us, so does [breath] and air enclose the whole world." (Aetius I, 3, 4, in Kirk (et al), 1983: 158-9).

Chronologically, the next major figure after the Milesians was the enigmatic **Pythagoras**. Like Socrates, he apparently wrote nothing. His closest followers formed a cryptic, secretive cult, so we have little direct reporting on him; most of what is known is anecdotal. He is rumored to have said "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 quite likely that he too developed some variation of hylozoist or panpsychist philosophy.

Parmenides' panpsychism is less clear than the other pre-Socratics. We know that he equated 'being' with 'thought', and thus saw mind as inherent in all things – though possibly in an idealist sense rather than an ontological sense. The most interesting statement by Parmenides occurs in fragment 3; he writes: "for it is the same thing to think and to be" (Freeman, 1948: 42). This has a double implication – (1) all thoughts constitute 'being', and (2) all things that can be said 'to be', also think. It is unclear precisely the intent of this fragment, though, and the few other fragments do not add much illumination along this line. Whether existent things, individually, are to be identified with individual thoughts – or self-possessing thoughts – is undecided.

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 seen as a form of pure energy, and it is interesting that Heraclitus should develop an 'energeticist' worldview some 2300 years before it became the fashion in modern 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*' – an "ever-living fire". Consequently, this life-energy was seen as residing in all things. Smith translates one key fragment as follows: "All things are full of souls and divine spirits." (1935: 13). Freeman translates fragment 113 as: "The thinking faculty is common to all." (1948: 32). Heraclitus' view on this matter seems quite clear.

Anaxagoras envisioned the world as composed of a myriad of substances, but these were ordered and regulated by a single over-arching principle, *nous* (mind). This is a significant development, because it demonstrates increasing articulation of the difference between the terms mind, soul, and spirit. More so than *psyche* and *pneuma*, *nous* is a unifying mental force that is interwoven with the movement and actions of disparate elements.

There are a number of important themes in the writings of Anaxagoras that anticipate hylonoism and the concept of participation. First recall two quotations that I cited back in Chapter 1: "And 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, in Smith, 1934: 34). Mind is clearly ubiquitous, omnipresent, and even god-like. The action of mind is analogous to that of rotation: "[M]ind ruled the rotation of the whole, so that it set it in rotation in the beginning." (ibid). And furthermore, "Rotation itself caused the separation..." (ibid). So mind acts by a rotation of the infinite elements, which causes the diversity of things to come into being. Thus it is clear that mind causes motion, as it had for the earlier thinkers. But this motion is of a specific kind, namely *circular*. The idea of circular motion recalls the concept of *feedback*, in which mass/energy follows looping patterns that fold back on themselves. I have emphasized that such 'circular motion' is an essential part of chaos, as well as of producing quasi-stable structures. And the movement of the hylon is circular in nature, as it traces out its quasi-attractor orbits in the hylosphere. Anaxagoras seems to recognize the importance of these concepts, but he attributes a distinct causality to mind that I deny; he says that mind yields (causes) the rotation of matter, whereas I argue for a dual concurrent form of causation (cf. my note 11, Chapter 4).

I have also stressed that the nature of mind is universal, that all movements and systems of matter give rise to mind of the same qualitative nature (i.e. of a hylon moving in phase space), but with varying degrees of intensity. Anaxagoras makes the same conclusion: "All mind is of like character, both the greater and the smaller." (ibid). Furthermore, I have made the point that the hylon is something distinct from material reality, and does not exist in any material sense; Anaxagoras, too, sees mind as uniquely distinct from

matter: "Nothing is absolutely separated nor distinct, one thing from another, except mind." (ibid).

This last citation refers to another basic principle of Anaxagoras, namely, that each element is present to some degree in every other element: "nothing is absolutely separated nor distinct". There are no 'pure' elements. In another fragment he makes this explicit: "a portion of everything exists in everything" (ibid). This idea anticipates developments in particle physics and quantum mechanics, which I will examine deeper later. Here, let me note that I see this as the *first explicit reference to the concept of participation* that I defined earlier. Recall that tripartite definition: 'to give, to receive, to possess something of the other'. If everything 'contains' some portion of every other thing, then all things interpenetrate one another, and all co-participate with each other, *as an essential aspect of their being*. Anaxagoras has spelled out an elemental kind of participation, something which occurs continuously and automatically. This in fact is compatible with current views of matter, as I shall show.

Finally, one last citation indicates more explicitly the panpsychist inclinations of Anaxagoras. In Aristotle's Metaphysics, one finds the following statement attributed to him: "[J]ust 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, but essentially like that of animals, i.e. an animated soul or spirit. Mind is present both in 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. This again suggests a panpsychist interpretation, and is consistent with the position of hylonoism.

A contemporary of Anaxagoras, **Empedocles** was content with a four-element physical world. He took the *water* of Thales, the *air* of Anaximenes, the *fire* of Heraclitus, and added a fourth and final element – *earth*. These elements were presided over by the two forces, Love (attraction) and Strife (repulsion). Thus, Empedocles and Anaxagoras were the first thinkers to posit a system composed of two basic classes of entities: *elements* (i.e. mass), and *force* (i.e. energy); a fascinating anticipation of the modern view of physics.

More than any other pre-Socratic, panpsychism is central to Empedocles' 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." (1962-81, vol. 2. p. 233). Evidence of this exists in a number of different fragments. Smith cites the following quotation in which Empedocles simply states: "[A]ll things have the power of thought." (fragment 103; 1934: 31). Further evidence comes 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).

Equally important for my purposes is his introduction of the concept that may be called *participatory epistemology*. Empedocles was the first Greek philosopher to emphasize, if not originate, the idea that 'like knows like'. Knowledge of a thing occurs because both the knower and the known share something in common; they co-participate by means of a common element of the world. This is revealed in the famous passage that I cited in Chapter 1, and which immediately follows the sentence cited above in De Anima: "For by earth we see earth, by water water, by ether [i.e. air] bright ether, and by fire flaming fire, love by love and strife by mournful strife." (404b12). We humans come to know the Earth precisely because the element earth is part of us. We both partake of the same element, thus we can literally feel the presence, the "soul" of that aspect of reality, and thereby we know it. The same with any two composite objects; the common elements within them co-resonate, and by this they each achieve an understanding of the other⁵.

There is a related aspect of participatory thinking in Empedocles' thought, and this is his concept of '*effluences*'. He believed that all things had tiny openings or pores within them, out of which emanated a continuous 'flux' or a 'flow' of some kind. This effluence must first of all be material (earth, water, air or fire), since these are the only allowable elements of reality (presuming that it is neither Love nor Strife which emanates). Also, this effluence represents a kind of evaporation or dissolving of the object, and over time ultimately leads to its end. The key passage comes from Plutarch:

Look at it in the light of Empedocles, 'Perceiving that there are effluences from all things that have come into being.' Not only from animals and plants,

link to: http://www.bath.ac.uk/carpp/publications/doc_theses_links/d_skrbina.html

or earth and sea, also from stones, bronze and iron there is a continual and abundant outflow. Indeed it is this unbroken flux and movement which causes the destruction and perishing of everything. (Guthrie, 1962-81, vol. 2: 151)

Thus, not only "thought" but movement and outflow are inherent in all things.

One can imagine that this idea of outflow might have come from an examination of the sense of smell. The fact that things such as a flower have a scent can easily lead to a participatory theory of exchange: flowers are continually giving off some material, something of themselves, which is incorporated by the sensing individual. Flowers give off a scent for much of their existence, and then they die. In fact, the scent is actually the flower's *raison d'etre* – to attract a pollinator. Likewise, a puddle of water evaporates and 'dies'. Living things discharge their strength over the course of their life, they give off their energy to the surrounding environment, and then they expire. Empedocles must have been aware that all things become aged and weathered with time, become broken down, disintegrated. He thus made this process of effluence a universal and fundamental property of things. There are yet further implications of this concept in the ideas of 'dissipative structures' and 'superabundance' that I will discuss later on.

As a final observation on the pre-Socratics, let me note some comments by the atomist philosophers, **Leucippus** and **Democritus**. They are often depicted as proclaiming a harshly materialist worldview, of nothing but 'atoms moving in the void'. This is not entirely correct. Certain atoms possess the property of *soul*, and these are of a spherical shape, in order to better interpenetrate all things. Aristotle informs us, "[T]hose [atoms] which are spherical [Democritus] calls fire and soul" (De Anima, 404a2) – echoing Heraclitus. The roundness of the soul atoms accounts for their special properties:

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, my italics)

Since soul atoms are everywhere, one can reasonably conclude that all things are ensouled.

But there are several open questions. We do not know if the soul atoms are *always* everywhere, or if they come and go at times. We do not know if they are the *only* source of motion, or if other things can cause motion as well. And we do not know how they combine to produce the *unified sense of being* that human beings feel, and perhaps all things feel as well. The panpsychism of the atomists is at issue, but their few relevant comments are highly suggestive.

4) Panpsychism in Plato and Aristotle

The common view of Socrates, Plato, and Aristotle is that they made a break from the mystical 'hylozoism' of their predecessors, and set philosophy forth on a new path of rationalism and logic. Certainly they did break new ground, but there was less divergence from panpsychism than is acknowledged or understood. Plato makes a number of intriguing comments in support of panpsychism, and even Aristotle makes some surprising statements. Plato's references are the most interesting, but I cannot fully spell out the arguments for his panpsychism here. Rather, let me note the most relevant passages.

Significantly, the passages suggestive of panpsychism occur primarily in three of Plato's last works – Philebus, Timaeus, and Laws. This implies that they represent Plato's mature thinking on the matter, and thus have some strong degree of significance in his overall system.

First, though, I want to note one passage of interest in an earlier dialogue, the Phaedrus. Socrates is lecturing to the young Phaedrus on the nature of philosophy and rhetoric. The discussion takes place, atypically, outside of town in the shade of a large plane tree. The

setting inspires Socrates 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 speak “the truth”. As he says:

[T]he 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)

One is not sure how to take this passage. Is it meant to be a true account, or simply an allegorical reference to the knowledge that can be found in contemplation of nature? There seems to be three points here: one, it acknowledges the mythological animism of Socrates’ ancestors; two, it suggests that Socrates is not entirely enamored of this mode of learning (too much ‘simplicity’), which is natural given his emphasis on dialectics; but three, there is an indication that perhaps there is some truth in the idea that rocks and trees can ‘speak the truth’. One senses a certain sympathy with the ancient ways of knowing nature.

As to the main dialogues: In the Philebus one finds, first of all, Plato's articulation of the concept of the *anima mundi* – the world-soul. He argues that the universe, like the human body, is composed of the four Empedoclean elements (fire, air, water, earth). Both the human and cosmos are well-ordered and exhibit clear signs of *logos*, of rationality. The body, though nothing more than a well-ordered combination of the elements, possesses a soul; therefore a reasonable implication is that the universe too is ensouled. As Plato says, "[T]he body of the universe which has the same properties as our [body], but more beautiful in all respects...possesses a soul." (30a). This conception of the world-soul is important, but it *does not, in itself, qualify as panpsychism*. The world-soul is perhaps best seen as a form of theism, or even pantheism. Panpsychism requires that each thing individually possesses a soul/mind. Of course, most any form of panpsychism will entail something like a world-soul, but the reverse is far from true. *Panpsychism implies a world-soul, but not necessarily vice versa.*

However, Plato's argument for the world-soul also happens to contain a subtle argument for panpsychism. He implies that the property of 'ensoulment' is associated with well-ordered objects that are composed of the four elements. Since this applies in varying degrees to all things, one can reasonably infer that the quality of 'soul' corresponds with all material objects, or systems of objects. If this were *not* the case, then there must be something fundamentally unique about mankind and the cosmos that they alone are ensouled. Plato gives no indication that this is true. Thus one is left with the panpsychist implication.

In the Timaeus, one finds Plato's account of how the creator of the universe – the 'demiurge' – brought the cosmos into existence, and endowed it with a world-soul: "the divine providence brought our world into being as a truly living thing, endowed with soul and intelligence." (30c). Later in his account of creation, one learns that not only is the cosmos as a whole ensouled, but so too are the *stars*, individually; Plato refers to them as "divine living things" (40b). Not only living, but ensouled: "[the demiurge] assigned each soul to a star" (41e). Then as well the *Earth*, described as a "god" (40c), "foremost" in the cosmos. Still, our picture is incomplete. Plato informs us that humans, the cosmos, the stars, and the Earth are ensouled individuals. Is this all? Either there must be something unique about this set of objects, or else ensoulment must be a general characteristic of the universe.

Laws strengthens the case for panpsychism. Here Plato defines 'soul' as the *ability of self-motion*. Furthermore, self-moving objects may be said to be 'alive'. Thus he makes a three-way identification: soul equated to self-movement, equated to life; anything possessing any of these qualities possess all of them. And, as I have argued, such objects may also be said to possess a mind.

Soul is "the source of motion", and the "master" over all matter (896b-c). It is the cause of all things, and "controls the heavens as well" (896d-e). The question arises in the dialogue whether soul drives the cosmos as a whole, or drives each heavenly body individually – the answer being the latter. As an example, Plato refers yet again to the stars, specifically to the *sun*: "Everyone can see its body, but no one can see its soul..."

[The soul of the sun] is totally below the level of our bodily senses, and is perceptible by

reason alone." (898d). This is a fascinating statement, as it tells us that the *psyche* of celestial bodies can only be known rationally, not empirically. In a like manner, hylonoism argues that the mind in all things is not empirically knowable, but rather can be understood both rationally (through an understanding of dynamical systems) and in a directly intuited but non-empirical manner.

Yet the final question remains: Is something unique about the cosmos, the stars, the Earth, and humans, or do all things possess souls? I believe that the following passage is decisive:

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)

In a nod to the famous line by Thales, Plato seems to resolve this issue for us. If this single statement seems less than definitive, note that there is *no argument at all* to explain why humans, stars, etc alone are ensouled. So there exists one strong statement in favor of panpsychism, none to counter it. Considered as a whole, the case leads toward the panpsychic conclusion.

Panpsychist inclinations in Plato seem not directly connected to his ideas on participation (reference Chapter 1), but the simple fact that one finds convergence between the two concepts – participation and panpsychism – in a single person is significant, and something that occurs numerous times throughout history. This repeated convergence of ideas is too striking to be coincidental.

In the case of Aristotle, there is nothing quite as compelling as the numerous statements by Plato. Yet even here one finds suggestive claims in support of panpsychism.

Aristotle's belief that plants possess a type of soul is well known (cf. De Anima, 411b27).

Consequently, the common view is that he attributes soul only to living things. This is true, but he has a generous definition of 'life'.

Consider two statements of his in De Caelo (“On the Heavens”). In Book II (continuation of “On the heavenly bodies”), Aristotle is discussing the causes of motion of the heavenly bodies. Without any warning, he suddenly states, “[W]e have already decided...that the heaven is alive and contains a principle of motion.” (285a28-30). It is not clear where or how we have decided this. But his belief that “heaven is alive” would seem to be an endorsement of Plato’s world-soul.

One might be inclined to view this admission as extraneous, as perhaps inserted by some unknown transcriber long ago. However, there is another, more suggestive passage in Book II. Aristotle is still addressing the motions of the heavens, and in particular that of the stars. The key passage is as follows:

[I]f we base our inquiry on what we know, the present difficulty [of understanding the motions of stars] will not appear as anything inexplicable. The fact is that we are inclined to think of the stars as mere bodies or units, occurring in a certain order but completely lifeless; *whereas we ought to think of them as partaking of life and action.* (292a18-21, my italics)

This is a rather astonishing statement by Aristotle. Not only are the heavens alive, but so too are the stars individually. And again, we see the correlation between panpsychist concepts and participation; he uses the verb ‘partake’ – to participate – when describing the relationship between stars and life. It appears that he has accepted yet another element of Plato’s philosophy.

Unfortunately, Aristotle fails to elaborate on these ideas. Other references to panpsychism are vague. Charles Hartshorne finds some evidence for it:

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)

The overall case is certainly less compelling than with Plato, yet the evidence is intriguing. It suggests a lingering, subconscious panpsychism in Aristotle, something that only rarely bubbles to the surface.

5) The Stoics

At about the time of Aristotle's death in 322 BCE, Zeno of Citium arrived in Athens to begin his life of teaching. He lectured along the painted colonnade in Athens, a kind of long porch or platform, called a *stoa*. Thus began the third great phase of Greek philosophy, a system of philosophy known as Stoicism. This system was in fact the dominant philosophy in much of the ancient world, for a period of almost 500 years.

Zeno and his major followers (Cleanthes and Chrysippus) formulated a comprehensive philosophical system that built upon the cosmological, logical and ethical developments of their great predecessors. Not surprisingly, they adopted many of their fundamental assumptions about the nature of being and mind. Matter, for example, was seen in the standard Empedoclean manner, as composed of fire, air, water, and earth. Like Empedocles and Anaxagoras, the Stoics posited both material substance and the concept of *organizing force principles* in their cosmology; for them, the principles of 'active' and 'passive' accounted for all order and structure in the world. Like Plato, they accepted the idea of a world-soul. And they followed Aristotelian notions of form.

Of the four elements, fire and air were considered the embodiment of 'active', and water and earth of 'passive'. Fire and air were unified under a single concept, known as the *pneuma*. Drawing on Anaximenes and (more heavily) on Heraclitus, the *pneuma* was put forth as the creative life energy of the universe. This was most evident in human bodies,

in which both warmth (fire) and breath (air) were seen as the essential defining characteristics of life and soul. *Pneuma* was the active principle made tangible, and as such it accounted for all form that was seen in worldly objects. *Pneuma* was the 'creative fire' of the cosmos, a *pyr technikon*. It had the status of divinity, and was equated with both god and cosmic reason.

Thus far it appears that *pneuma*, or god, is merely the creator of all things; as 'reason' or 'mind', it leaves its mark in the complex form of material objects. The key question (with respect to panpsychism) is whether *pneuma* is merely some external creative force, or whether it continues to inhere in all things as an in-dwelling mind-like entity.

Fragments from Stoic teachings give us a good indication. Diogenes Laertius wrote that in the Stoic view, "mind penetrates every part of [the cosmos] just as soul does. But it penetrates some things more than others." (Inwood and Gerson, 1997: 133). The implication here is that degree of mind somehow corresponds with degree of structure (just as hylonoism claims, incidentally), something one might not expect from a single, external creative god. Cicero informs us that the Stoics followed Plato in his attribution of life to the stars: "[T]he cosmos is divine, [and] we should assign the same sort of divinity to the stars... [T]hey too are also said quite correctly to be animals and to perceive and to have intelligence." (ibid, sec. 41). More generally, Cicero states that "the parts of the cosmos...contain the power of sense-perception and reason." (ibid, sec. 30). A panpsychist outlook is the most consistent explanation for these views.

Modern commentators also reach panpsychist conclusions. Sandbach sees in the Stoic philosopher Posidonius the idea that "a 'life-force' could be recognized everywhere." (1975: 130). The element of fire is the source of this life energy, because "fire has in it a 'vital force'." (ibid, p. 134). A. A. Long notes that in the Stoic system "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." (1974: 171). All material objects are 'bodies', and they are in fact "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." (ibid, p. 174).

In addition to its cosmic role, *pneuma* also has an important physical meaning that relates closely to hylonoism. The *pneuma* serves four roles: (1) it provides a cohesive force that holds all things together, both individually and as a whole; (2) it makes things a unity, gives them a singular identity; (3) it is dynamic, and intimately involved with the concept of motion; and, (4) it serves as a means of communication or exchange within an object.

Regarding the first role, *pneuma* acts as the cohesive force of the universe. Recall the same view of Anaximenes: "our souls...being air, hold us together". Cicero tells us, "There is, therefore, a nature [*physis*, i.e. *pneuma*] which holds the entire cosmos together and preserves it..." (in Inwood and Gerson, 1997: 146). *Pneuma* acts not only on the cosmos, but on individual objects as well. Referring to its cohesive force, Long writes, "This function of *pneuma* in the macrocosm is equally at work in every individual body" (1974: 156). 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' ones like a stone or a table -- it is called *hexis* ('condition', or 'state', or 'tenor'). Higher up, at the level of living organisms (animals, plants and vegetative life), it is called *physis* ('nature'). At the highest level, of animals and humans, it is called *psyche* – 'soul'. It is all the same *pneuma*, just existing in varying degrees of *tonos*. This quality "makes *pneuma* something more like 'force' or 'energy' than a material object" (ibid). Pseudo-Galen explains it this way:

There are two forms of the inborn *pneuma*, that of nature [*physis*] 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. (in Inwood and Gerson, 1997: 171)

I note here that, clearly, 'soul' is not attributed to all things, but 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 one does not find statements like 'soul moved all

things', but rather we see an intelligent universal force which accounts for motion. Consequently, the Stoics were panpsychist but of a different type than Plato and the earlier philosophers.

In its second role, *pneuma* not only holds things together, it also makes them 'one thing'. It accounts for the unity of being. It was Chrysippus' belief that "Nature is made One by the *pneuma* which makes the Whole coherent and interacting." (Sambursky, 1959: 41). Clemens Alexandrinus reiterates this point: "[T]he tension of the *pneuma*...pervades and holds the cosmos together" (cited in *ibid*, p.119). The unity of a thing is described as that which 'rules' over the object, and determines its character. This unity is a central concept in Stoic philosophy, and is given a special name, the *hegemonikon* (from *hege*, 'to lead', and *mone*, 'singular'), typically translated as 'the leading part of the soul'. Cicero explains it as follows:

There is, therefore, 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)

The *hegemonikon* is present, like the *pneuma* itself, at all levels of existence. Cleanthes argued that the sun was the *hegemonikon* of the cosmos.

The third property of *pneuma* is its inherently dynamic nature. "By virtue of its constituents [fire and air], *pneuma*, which is spatially continuous, is continuously active." (Long, 1974: 157) The *pneuma*, in fact, is the source of all motion, and takes on the role formerly held by 'soul'. "The cosmos is formed and ruled by [pneumatic] forces which activate matter in a similar way to the activation of the living body by the soul." (Sambursky, 1959: 37).

This active quality of *pneuma* is related to the fourth property as an agent of communication. Alexander Aphrodisiensis, speaking of the theory of Chrysippus, says, "[H]e assumes that the whole material world is unified by a *pneuma* which wholly pervades it, and by which the universe is made coherent and kept together and is made intercommunicating" (ibid, p.121). This intercommunication is coordinated by the singular point of the *hegemonikon*:

The vital function of the *hegemonikon* as the central seat of consciousness, unifying all the activities of the soul and maintaining and regulating its contact with the external world, clearly defines a dual direction of communication ... It is through the incessant movement of *pneuma* to and fro between the *hegemonikon* and the surface of the body that this two-way communication is established. (Sambursky, 1959: 22).

And what exactly is 'communicated'? It is the 'heat' of the *pneuma*, its warm life energy that sustains all things. To cite Cicero: "What now remains is the [*pneuma*]; it itself is in its entirety a hot nature and communicates its salutary and life-giving heat to all other natures." (in Inwood and Gerson, 1997: 146).

Consider the parallels between these properties of *pneuma* and the characteristics of hylonoism. The hylon is a function of the structural unity of a given system of mass/energy. Objects that we perceive as 'singular' things possess a particularly intense hylon, which causes it to stand out against the background flux of matter and energy. The hylon is not a force, but rather it is a result of forces that cause a given object to persist as a coherent structure. The unity of the singular hylon has been stressed, and there is a striking parallel to the concept of the singular *hegemonikon*. In fact, I would claim that the *hegemonikon* anticipates the true essence of the concept of the hylon, and is expressed in words as well as conceivably possible, given the state of knowledge at the time of the Stoics. Both point toward a common underlying view of the nature of mind.

The *hegemonikon* is not just the 'unity of the soul'; it is a specific quality, attributed to all systems large and small, and its dynamic nature, its center of two-way exchange, captures

most all the essential aspects of hylonoism. Two-way exchange of energy between parts of a system 'create' the hylon, just as the two-way exchange of pneumatic 'heat' is the central activity of the *hegemonikon*. I see this Stoic anticipation of hylonoism as a parallel to the manner in which Democritus anticipated modern atomic theory; both grasped and articulated the central concept of a modern ontological principle, and both expressed themselves in as clear terms as possible. This goes far beyond mere panpsychism as an anticipation of participatory mind; it intuits key aspects of the nature of being, and describes them in astonishingly clear terms.

6) Participatory Philosophy in the Early Christian Era

Roman civilization had incorporated many aspects of Stoic thought, and this influence extended to all realms of the empire. It is well known that the early Christian writers were aware of Stoic philosophy, and of Greek thought in general. Thus even though the emergence of the religious worldview marked a major turning point in Western Civilization, one may expect to find a substantial residuum of earlier philosophic thought.

Consider first of all the general concept of monotheism. Both the Greeks and the Romans had their pantheon of gods, but in each system there was single God-King who ruled over all: Zeus, and Jupiter (or Jove), respectively. This would indicate the need -- which is perhaps a universal need -- to see the cosmos as ultimately connected and unified, as under a 'single rule' in some sense. The inclination toward monism is a powerful force in human culture⁶.

In addition, the mythological hierarchies of pre-Socratic Greece and Rome were centered on distinct 'personalities'. Each god (including the king) had unique personality traits that accounted for and explained the god's role in the natural world. This was, in a sense, extreme anthropomorphization -- the attribution of human-like qualities to the various gods of nature. It was also a reflection of the animist view that one finds in many early cultures. Thus the Greek and Roman mythologies accounted for both the presence of the numerous 'souls' in the natural world, and for an over-arching principle of unity.

The Greek philosophers reconfigured the cosmos, structuring it around a sense of order, reason, and *logos*. The gods were still there, and still were present in all things, but they ceased to have human-like personalities. Plato had his demiurge, the creator of the universe, who endowed it as a whole with reason and soul -- in order to make everything “as much like himself as possible”. The demiurge then recedes from view, leaving only the world-soul remaining. The world-soul takes on the role of ‘god-king’, of that mind which occupies the highest station in a cosmos full of gods. Tellingly, neither the demiurge nor the world-soul have much of a personality. They are both invoked for their explanatory power and their adherence to the principle of *logos*. Thus even though the emphasis had shifted from ‘personality’ to ‘rational explanation’, the Greek worldview still accounted for both the existence of gods and for cosmic unity. And I have shown that this emphasis on reason and the *logos* continued through the Stoic tradition, and carried on within Roman civilization until the collapse of the empire in the sixth century.

By this time, Christianity and the religious worldview were becoming increasingly powerful, though it was not until 400-500 years later that they became dominant in Western culture. The religious worldview offered a new way of seeing the cosmos, one that was a kind of return to the ancient mythological scheme: the principle of *logos* had been subsumed once again by the principle of *faith*. First, there was a return to the supernatural. God and the angels dwelt, like Zeus and his cohorts, in an other-worldly realm. This resulted in a primarily *spiritual* worldview, in contrast to the primarily rational and naturalistic worldview of the Greeks. Second, there was of course God himself, who, like Zeus, signified the ultimate unity of the cosmos. Third, for both God and Zeus, their status as symbol of cosmic unity was not abstract like Plato’s world-soul, but rather they, in both cases, acquired human-like personality traits, and were manifestly active in human affairs.

The religious worldview differed from the ancient mythological worldview, however, in that it created a radically new separation between the spiritual and the natural. The gods of the myths were by and large gods of nature; they existed in or controlled natural phenomena (e.g. oceans, rain, crop harvest), and they accounted for ordinary events in lives of everyday people (e.g. love, sleep, health, etc). With the new religious

worldview, the gods and spirits were banished from nature. They lived primarily in the supernatural realm, and only rarely did they intervene. Only in humans was the supernatural manifest, in the form of our eternal soul. Such a picture stands in stark contrast to the polytheism of mythological Greece and to the panpsychism of the Logos period (pre-Socratic, Platonic, and Hellenistic Greece). To the extent that I am arguing for a panpsychic interpretation of the universe, the religious worldview was a step backward.

A common thread among all three eras – mythological, Greek, and Christian – is the presence of a central unifying figure. The important point is this: *What we recognize in Zeus, the world-soul, or God is the Great Mind of the Cosmos. We come to know this Mind because we are fundamentally like it.* "All minds, great and small, are alike" (Anaxagoras). This is a central thesis of hylonoism. All minds share a common process, a common basis in mass/energy, and exist in a common space, the Partimens. Also, Mind and mind exist not arbitrarily or randomly, but they exhibit a consistent nature, a real personality, which demonstrates variation and creativity within certain bounds of regularity. We know this most immediately in our own personal minds, and we therefore can extend this concept of personality to all minds, at all levels of being. *This is not naive anthropomorphism*; it is simply a recognition and acknowledgement of the conditions of the universe as perceived by human beings, expressed in the most basic human terms possible.

The Christian project was clearly less panpsychist than the Greek Logos, but it nonetheless represented an advance in two important ways. First, it returned the quality of 'personality' to the Universal Mind. As I have just mentioned, this is significant because it acknowledges that the Great Mind is fundamentally like our finite human mind. To give it all the attributes of the Christian God is perhaps superfluous, but it undoubtedly made the image more presentable and comprehensible to the common people. Second, it put forth God, in the persons of Jesus and the Saints, as divine role models for humanity. Ordinary people were exhorted to aspire to the perfect and saintly life. There was thus this element of *transcendence*, of absolution of imperfection through faith and devotion. In this sense the religious worldview took on an *evolutionary*

demeanor that was lacking in the purely rational and ethical systems of the Greeks and Romans.

From its earliest days the Christian project incorporated many aspects of the Platonic, Aristotelian, and Stoic philosophies. The influence of Plato was particularly important for the early Christian thinkers, and Origen (182-251 CE) was among the first to attempt to unite Platonic ideas with the emerging Christian theology. A number of Plato's concepts were appealing to theologians like Origen, including the idea of a nonphysical world as the 'true reality' (the Forms of Plato, versus the notion of a spiritual realm), the belief in a 'creator' (the Demiurge versus God), the 'Good' (or 'God') as the highest virtue, and the immortality of the soul. Other Platonic ideas were more troublesome; among these were his intimations of panpsychism and the whole notion of a 'world-soul' as distinct from the creator.

Shortly thereafter Plotinus (205-270) developed the first incarnation of what came to be called the Neoplatonist school of thought. Neoplatonism is a broad (and ambiguous) philosophical term that encompasses a diversity of ideas, many of which incorporate elements of monotheism and are only incidentally connected to Platonism. Generally speaking we may say that Neoplatonism is a collection of metaphysical principles that works toward knowledge of the good life through an intimate contact or unification with the One, or God. This highly influential movement flourished ca. 200–550 CE, and continued to affect the thought of a number of important thinkers well into the Renaissance.

Unification with God, the highest Good, required some form of deep communication or interaction. Significantly, the Neoplatonic philosophers came to describe this process as one of *participation*, following Plato's description of the phenomenal world as existing through participation in the Forms. Plato never fully developed his notion of participation, leaving us with only a few explicit passages from works like the Phaedo and Parmenides (cf. my citations in Chapter 1). Aristotle saw this as a failing of Platonic philosophy. In the Metaphysics he observes that Plato's concept of participation is related to the Pythagorean idea of things existing through an 'imitation' of numbers – numbers being a rough analogue to Plato's Forms. Aristotle notes that, for Plato,

the many [objects of the sensory world] existed by participation in the Forms that have the same name as they. Only the name 'participation' was new; for the Pythagoreans say that things exist by 'imitation' of numbers, and Plato says they exist by participation, changing the name. But what the participation or the imitation of the Forms could be they left an open question. (Metaphysics I, 6, 987b11-14).

The Neoplatonists sought to remedy this weakness by more fully articulating the concept of participation, occasionally employing Christian or monotheistic ideas.

Plotinus' Enneads (ca. 270/1969) have a number of references to participation, most of which are in line with the Platonic usage. In the first Ennead he writes:

[A]ny participation in Ideal-Form produces some corresponding degree of Likeness to the formless Being There. And participation goes by nearness; the Soul nearer than the body, therefore closer akin, participates more fully and shows a godlike presence, almost cheating us into the delusion that in the Soul we see God entire. (I, 2nd tractate, sec. 2)

The third Ennead speaks of the Universe as a "participant in Intelligence and Reason" (2nd trac, sec. 2), and states that, for physical objects, "there are degrees of participation" (2nd trac, sec. 2) corresponding to the inherent powers of a thing. Plotinus continues this theme in the fourth Ennead, where he says, "A living body is illuminated by soul: each organ and member participates in soul after some manner peculiar to itself" (3rd, trac, sec. 23). And the sixth Ennead includes a number of passing references, again consistent with Plato. In spite these references, Plotinus does not add significantly to the articulation of a philosophy of participation.

Porphyry (232-304) and Iamblichus (245-325) were important Neoplatonist contemporaries of Plotinus. Porphyry seems not to have emphasized the importance of participation, but Iamblichus found significance in it⁷. For him every class of being had both a pure, 'imparticipable' order and a more impure, interactive, 'participable' order that

was involved in the actual coming-into-being of particular objects. He was the first to interpret participation as a literal partaking, as a taking of some essence. Things exist in a hierarchy of being, with each order possessing a participated 'form' of the (unparticipated) Form above it. As Lloyd explains:

[E]very subsistent thing...existed...first 'imparticipably', then as the participated form which...'proceeded from' that as its 'illumination'. Any level of reality is thus connected to the one above it by containing as its highest or best feature a participated form which reflects the imparticipable substance that identifies the next higher order. (1967: 298).

Lloyd observes that this "apparent doubling" of the Forms is logically necessary if they are to both retain an absolute independence and yet function as active, participatory agents of creation.

Another early Christian theologian, Gregory of Nyssa (335-398), built upon Neoplatonic ideas; he created an intuitive and mystical theology that had close connections to Origen. Gregory's philosophy was notable in that he emphasized the process of participation with respect to the human-divine interaction, and yet he also saw it as a more general phenomenon; his system moved toward a participatory ontology in which "the underlying reality of things is their likeness to God and their participation in him" (Sheldon-Williams, 1967: 453). His early work follows standard Platonic usage, as when he writes,

He who has purified the eye of his soul...makes of the visible object [of beauty] a vantage-point from which to contemplate that intelligible Beauty by participation in which all beautiful things are beautiful. (Treatise on Virginity, in Armstrong, 1967: 453)

And yet he also made a number of further articulations that moved beyond Plato. Participation for Gregory is a means of interaction or 'contact' with God. He states that "it [God] draws human nature to participate in its perfection" (in Danielou and Musurillo, 1961: 190), and thereby the human soul comes to know God.

Most significant is Gregory's concept of *epectasis*, or 'perpetual progress'. He believed that people continually participate in the nature of the divine, and that this participation simultaneously quenches and deepens one's thirst for transcendence. Divine blessings continually flow upon us, and the deeper our participations the deeper our rewards:

[St. Paul] teaches us...that in our constant participation in the blessed nature of the Good, the graces that we receive at every point are indeed great, but the path that lies beyond our immediate grasp is infinite. ... [T]hose who thus share in the divine Goodness...will always enjoy a greater and greater participation in grace throughout all eternity. (ibid, pp. 211-2).

This participation in God, the Good, establishes an instance of 'positive feedback' in which the very act of participation increases one's capacity and desire for further participation:

Participation in the divine good is such that, where it occurs, it makes the participant ever greater and more spacious than before, bringing to it an increase in size and strength, in such wise that the participant, nourished in this way, never stops growing and keeps getting larger and larger. ... [E]verything that flows in produces an increase in capacity. Thus the two are functions of each other: ... It is clear, then, how large [the potency of the soul] can become, since there is no limit to stop its growth. (ibid, pp. 62-3).

Gregory exquisitely summarizes his view as follows: "*The soul grows by its constant participation in that which transcends it*" (ibid, p. 190; my italics).

Thus Gregory envisioned a three-part process of participation, as (a) Platonic participation in a realm of Forms, (b) a means of knowledge of the divine, and (c) the means of growth of the soul. His writings are part of the era of 'middle Neoplatonism'. Late Neoplatonism is associated with the work of two other important philosophers, Proclus and Pseudo-Dionysius. Both men significantly extended the usage of the concept

of participation, in the realms of traditional Greek philosophy and Christian theology, respectively.

Proclus (411-485) was a philosopher in the original Greek tradition, heading the Athenian School of Philosophy for 50 years. He developed a complex and oftentimes utterly obscure metaphysical system that emphasized the term 'participation' more than perhaps any other early Christian-era thinker. Elaborating and expanding on Iamblichus, Proclus articulated a three-part metaphysical system in which existed (1) the 'imparticipable' (the eternal Form), (2) the 'participated' (that aspect of the Form which inhered in material objects), and (3) the 'participant', or subject of participation.

References to participation occur repeatedly throughout Proclus' chief work, Elements of Theology. Roughly one quarter of the 211 propositions cite the term either directly or in the discussion. He begins the work with the proposition that "Every manifold in some way participates unity" (Prop. 1, in Dodds, 1963: 3), and continues to layout a systematic and formal articulation of his worldview. He elaborates his three-part system: "All that is unparticipated (i.e. the Forms) produces out of itself the participated" (Prop. 23), and establishes a participatory hierarchy: "All that participates is inferior to the participated, and this latter to the unparticipated" (Prop. 24). Later propositions become increasingly complex, and include such references as: "Every whole-of-parts participates the whole-before-the-parts" (Prop. 69); "[E]very particular soul participates the universal Intelligence" (Prop. 109); and "Every god is participable, except the One" (Prop. 116). Such references are not limited to Elements, and recur (less frequently) in the other works of Proclus – including, notably, his Commentary on Plato's Parmenides⁸.

The last important Neoplatonist philosopher was the individual known as 'Pseudo-Dionysius' (ca. 500 CE), or Dionysius for short. This unidentified Christian theologian presented himself as the disciple of St. Paul mentioned in the Bible; Acts 17 refers to a certain Greek official called "Dionysius the Areopagite" who was converted to Christianity by Paul during his visit to Athens circa 60 CE. Dionysius' false presentation passed for truth for nearly 1000 years, and his writings influenced a number of important philosophers including Aquinas and Ficino.

Dionysius built upon the work of the earlier Neoplatonists and combined Christian theological concepts with Plato's theory of the Forms. As with the others I have discussed, he emphasized the importance of the notion of participation and its role in the relationship with the divine. The two highest Forms in the Dionysian system are 'Good' and 'Being'. The Good is identified with God, who is the 'highest Good', a "unity above being" (it is also equated with the 'One' and the 'Beautiful'). Being comes as a direct consequence of the Good and is the most fundamental form of participation in which objects partake.

His primary work, *De divinis nominibus* (On the Divine Names), describes a theory of participation not unlike that of Gregory of Nyssa. Participation takes on at least three distinct meanings: (1) It serves as a means of communication with God, knowledge of God, and ultimately is a source of enlightenment:

The Good is not absolutely incommunicable to everything. ... [I]t draws sacred minds upward to its permitted contemplation, to participation and to the state of becoming like it. ... [Those who seek it] are raised firmly and unswervingly upward in the direction of the ray which enlightens them. (Ch. 1, sec. 2; 1987: 50).

Later Dionysius adds: "For all divine things, even those which are revealed to us, are known only through their participations" (Ch. 2, sec. 7; in O'Rourke, 1992: 7).

(2) It applies not only to mankind but to all creatures and even all material things, and is thus a universal quality of existence. All things participate in Being, as do even the other Forms (Life, Wisdom, Unity, etc.) that are the "sources" of all things:

Everything participates in [God] and none among beings falls away. ... Being precedes the entities which participate in it. ... It is only because of their participation in Being that [the other Forms] exist themselves and that things participate in them. ... The first gift therefore of the absolutely transcendent Goodness is the gift of being, and that Goodness is praised from

those that first and principally have a share of being. (Ch. 5, secs. 5-6; 1987: 99).

Using somewhat different terms, he later reiterates the point: "Just as every number participates in unity...so everything, and every part of everything, participates in the One." (Ch. 9, sec. 2; *ibid*: 128).

(3) Finally, participation serves as a measure of a thing's 'divinity': "The more a thing participates in the one infinitely generous God, the closer one is to him and the more divine one is with respect to others." (Ch. 5, sec. 3; *ibid*: 98). Overall Dionysius is less systematic and rigorous in his usage of participation than the other Neoplatonists, most notably Gregory and Proclus. But his writings have had more of a historical impact than any other early Christian philosopher because of his considerable influence on Thomas Aquinas.

The period of time between Dionysius and Aquinas – roughly 700 years, from 500–1200 CE – was an era of relatively little progress in the evolving Participatory Worldview. Then in the 13th century Aquinas (1225-74) took up Dionysius' conception of participation⁹ and developed it into an important part of his metaphysical outlook.

Here I will only provide a summary of Aquinas view on participation, partly because of the strongly theological nature of his writing (my focus in this thesis is on rationalist and naturalist philosophy), but also because the topic has been given detailed treatment elsewhere¹⁰. Aquinas articulated three primary modes of participation. First, there is the participation of the less-general in the more-general. An example would be the participation of a species in a genera, or an individual in a species (e.g. 'man' participates in 'animal', and 'Socrates' participates in 'man'). This is a logical or definitional form of participation, based as it is on the designations of categories of being. Second is a real or ontological mode of participation in which an object takes on physical characteristics as a consequence of its participation. For example, when a lump of clay is crafted into a vase, the clay matter is said to participate in the 'form' of the vase. Third, Aquinas identifies a causal mode wherein an effect is seen as participating in its cause. This becomes significant in discussions of God as the original cause or source of things.

The most important aspect of participation is related to the concept of *esse* ('being', or 'existence'). All existing things are said by Aquinas to 'participate in *esse*', and this establishes their existence. *Esse* is a most general quality, and is neither reducible to nor dependent upon another entity; that is, *esse* cannot participate in anything else.

Furthermore, *esse* is present in two forms: (1) a general mode of existence that he calls "*esse commune*", and (2) a "self-subsisting *esse*" (*esse subsistens*), of which there is only one mode, God. Only God "is" its own *esse*, and does not participate in *esse*.

So any particular being (*ens*) participates in existence (*esse*). Since *esse* consists of the two manifestations (*commune* and *subsistens*) this means that any thing participates at once in both *esse commune* ('being-in-general') and *esse subsistens* (God). But also we know that each material thing (*ens*) is not 'its own' *esse*, and this requires that the thing have a separate 'essence', or form, which is separate from the *esse* in which it partakes. Therefore each material object is a *composite*: it consists of (a) its form or essence, and (b) its share of *esse*.

Given this, the concept of participation raises a potentially major problem for Aquinas. If 'participation' is to be understood literally as a 'taking of some essence', then participation in God (*esse subsistens*) means an incorporation of the divine essence, which Aquinas saw as the threat of pantheism – i.e. all things are God. In response Aquinas decided that participation exists in two different ways: first in the literal 'partaking' sense, which is how things participate in *esse commune*; and second, as a *likeness* or *similitude*; this is how things participate in God – they are 'like' him in some limited and finite way, but not in themselves divine. So each thing (*ens*) can be said to 'have' *esse* but only 'resemble' God.

Wippel (1987; 2000) sees participation as the core of Aquinas' metaphysics, and hence as central to his entire philosophical system. This fact alone is of considerable significance, considering that Aquinas has become one of the most important philosopher/theologians of Western civilization. That the concept of participation was central to Aquinas' thinking further indicates the growing influence of the philosophy of participation.

Apart from Neoplatonism, the Middle Ages and early Renaissance were dominated by the influence of Aristotelian thinking. Even Aquinas, who incorporated some Platonic themes via Pseudo-Dionysius, shows a marked bias towards the ideas of Aristotle. Perhaps this is because Aristotle's worldview posed no threat to the basic Christian principles, whereas Neoplatonism (and Stoicism) were more troubling. More to the point, Aristotle was critical toward the role of participation, and his theory of inert matter was clearly opposed to a panpsychic interpretation of nature. Aristotelian influence reached its peak in the scholasticism of the 11th – 14th centuries, which dominated philosophical discourse of the time.

From the time of Aquinas, Christian mystics like Meister Eckhart (1260-1328) advocated a form of participatory thinking, in that God was seen not as distant and remote but as immanent in humanity and in the natural world. Knowledge of God was achievable through deep participation, through a mystical union with him. Participation was seen as emotional, sensual, and intuitive rather than merely as a rational or intellectual matter. The very concept of 'knowledge' was changed to include the totality of human abilities. In our current age dominated by rational thought, the approach of Eckhart continues to appeal to those who seek a more comprehensive way of relating to the cosmos.

In the 1300's and 1400's, thinking started changing in Europe. Humanist thought began to emerge and to question some of the basic principles of the religious worldview. Boccaccio and Petrarch played important roles in this process, but we may perhaps single out Marsilio Ficino (1433-99) as a turning point of sorts. In one sense, he was quite medieval; his work on uniting aspects of Christianity with Neoplatonism was reminiscent of Plotinus and Augustine, and he tended toward a mystic conception of knowledge of God. On the other hand, Ficino was a leading humanistic thinker, a systematic thinker, and believed that the human soul deserved a central role in the cosmos.

Ficino is symbolic of the shift that was occurring from the religious to humanist/scientific worldview. He saw religion not as supreme holder of knowledge and wisdom, but rather as requiring a philosophical dimension; in the words of Burroughs, "for Ficino philosophy must be religious, religion philosophical." (1948: 187). Ficino

constructed a five-level hierarchy of the cosmos¹¹ which placed the 'soul' at the very center. Soul, for him, is a dynamic quality that exists at all levels of reality, including that of the cosmos as a whole – a reinterpretation of the world-soul. As Kristeller explains it, "[Ficino] is convinced that the universe must have a dynamic unity, and that its various parts and degrees are held together by active forces and affinities. For this reason, he revived the Neoplatonic doctrine of the world soul..." (1964: 43). Here we see evidence of influence by Plato's panpsychism, as well of the Stoic doctrines of the 'active' and of the *pneuma's* dynamic unity.

Though not a panpsychist, Ficino clearly had inclinations toward what we now would call participatory thinking. Not only was soul (in the sense of the cosmic soul) in all things, but he saw 'mind' and human emotion as playing an active role in shaping reality:

Now since for Ficino *'thought' has an active influence upon its objects*, and since love...is an active force that binds all things together, and since the human soul extends its thought and love to all things...soul becomes...the center of the universe. (Kristeller, *ibid.*, my italics)

Participatory philosophy was turning away from the overbearing influence of religious thought and toward humanity and nature. The concept of 'soul' was shifting to the concept of 'mind'. Panpsychism was reemerging as a key element of philosophy, some 1200 years after the waning of Stoicism. But now it was to have a naturalistic, and even an empirical, basis.

7) Renaissance Naturalism of the 16th Century

Beginning with the Renaissance, a new worldview began forming. The religious worldview had reached its peak of influence, and its position as the leading social influence was soon to decline. 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 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 natural world. All these qualities can be summed up in what I have called the Mechanistic Worldview. Its central metaphor was to see the cosmos as a *clockwork mechanism* – consistent, predictable, and comprehensible, even though (perhaps) constructed by a Supreme Creator whose nature was necessarily of an entirely different sort.

As I have argued earlier, all 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 alive, as animated throughout, as possessing mind, sensitivity, and awareness. Empirical science did nothing to dissuade panpsychist philosophers from this view, and in fact more often served to strengthen it. Even some of the founders of mechanistic philosophy, those thinkers most associated with advancing this new worldview, harbored doubts about viewing matter as inherently dead, inert, and insensate. And as before, I will demonstrate that the development of participatory philosophy frequently went hand-in-hand with panpsychist sympathies.

The Renaissance was certainly a 'rebirth' of philosophy. The religious worldview had begun to play itself out as the dominant interpretation of the universe, and a new system based in nature and mankind was emerging. Religion was still important, of course, but it was proving increasingly unable to explain the events of the natural world. Ficino kept God in his system, but placed the human soul at the center, and described it as radiating out into all aspects of reality. Similarly, the other central thinkers of the 16th century denied not God but rather religion's claim to sole purveyor of truth.

The forefront of Renaissance philosophy occurred in Italy; new perspectives took root and flourished. This 'new philosophy' of Italy is typically known as *Renaissance naturalism*. Five of the most important philosophers of this era – Cardano, Telesio, Patrizi, Bruno, and Campanella – were Italians. All shared a disdain for the standard theology, all opposed the dominance of Aristotelianism and scholasticism, and all looked to nature for insights into reality. All were panpsychists. And with perhaps the exception of Telesio, all had significant ideas about the concept of participation, and they also developed theories of mind that showed interesting anticipations of hylonoism.

Girolamo **Cardano** (1501-76) was the first notable philosopher in over a millennium to put forth an unambiguous panpsychist philosophy. A student of Stoicism, he also investigated Platonic and Aristotelian philosophy, eventually siding with Plato. Thus it is perhaps not surprising that he adopted a Platonic view of the world-soul, and even extended the basic panpsychist insights of Plato.

The concept of *unity* was central to Cardano's philosophical system. Everything ultimately is One, and the oneness of all reality is its central defining characteristic. The fact that we see distinct objects around us is explained by a three-part 'system hierarchy'. First, all things are parts of the whole, the One. Second, all things are by nature composite, and consist of various sub-parts. Further, any given object is a 'one' to its parts, just as the One is the unity to all the parts of reality. Thus, all distinct objects are simultaneously: (1) a part (of the whole), (2) a unity in themselves, and (3) a composition of sub-parts¹².

This hierarchy of 'systems within systems' was reflected in his view of the human being as a 'microcosm'. Cardano saw in the unity of the human a reflection of the unity of the universe at large. He envisioned similar principles applying to the organization of both the human and the universe; by studying one, a person could learn about the other – and in fact learn something about all natural systems. Commentator Markus Fierz puts it this way: "One studies the movement of the stars in order to divine human fate. One compiles the properties of animals, plants, even stones hoping to procure from them medicinal remedies." (1983: xvii). All natural systems are linked, and share common core properties. This systems-view of mankind and nature is a remarkably modern perspective, and distinguishes Cardano from his medieval predecessors and peers.

Cardano felt that a fundamental principle was necessary to maintain the unity of the One and its many subordinate unities. This principle, he believed, was 'soul' (*anima*); and the particularly human form of this principle he recognized as 'mind'. Furthermore, soul is identified with the whole of the cosmos (the world-soul). If soul is the unifying principle, then it must likewise be *present in all unities* large and small. This recalls the Stoic insight of the *pneuma* as a unifying force in all objects. Cardano takes Plato's

intuition about the soul of the world and formalizes it, making it a principle of unity, which then takes on a causal role in all levels of unity. Plato saw 'gods in all things', but did not see them as a consequence of common principles of organization that act at all levels of existence.

With the idea of 'soul' as the unifying principle in all things, Cardano developed a relatively pure and straightforward panpsychism. In his work *De subtilitate* (On Subtlety, 1550), he explains the central role of *anima*: "[Material] bodies...are generated from matter and form, and are controlled by the *anima*, which in the higher types of beings is mind..." (1550: 117). Again we see the connection between 'soul' and 'mind', with mind being a rarefied form of the more general quality of soul. As with the Greeks, Cardano sees soul as the causal source of all motion in the world: "[U]niversally there must exist a certain *anima*...because a source of motion seems to exist in every body whatsoever..." (ibid, p. 87).

Cardano's other Greek influences also reveal themselves in his writings. For one, there is his theory of 'heat' and 'prime matter' that is strongly reminiscent of the Stoic ideas of 'active' and 'passive'. (Incidentally, notice again the connection between the term 'heat' and the concept of energy; ideas of energy and force frequently recur in the philosophy of the panpsychists). 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' conception of Love and Strife as the two fundamental forces in the universe is reflected in Cardano's 'sympathy' and 'antipathy': Fierz says, "The main principle underlying [hidden] relationships is the sympathy and antipathy of all things, which partake [i.e. *participate*] in a common life." (1983: xvii). Cardano makes 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' to produce form. This is a general ontological principle, and hence, "all permanent bodies, including stones, are always slightly moist and warm and of necessity animate." (1550: 66).

Bernardino **Telesio** (1509-88) developed a panpsychist philosophy that had a lasting influence in Western philosophy, primarily through the works of Bruno, Campanella, Bacon, and Hobbes. His system was based, like Cardano's, on a return and refinement of

the ideas of the pre-Socratics. He challenged Aristotle's duality of 'matter' and 'form', arguing instead for an emphasis on matter and *force*.

Like Empedocles, Telesio sees two fundamental and opposing forces in the universe, an 'expanding' and motive principle that he calls *heat*, and a 'contracting' principle that he calls *cold*. These forces act on and shape the 'third principle', passive matter, which is associated with the Earth. Thus, for Telesio all things around us consist of an active 'energy' factor (in the heat/cold principle), and a 'mass' factor (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: 309). Once again we find an emphasis on the concept of energy as a key feature of the material world -- an emphasis that originated some 2000 years earlier in Heraclitus' *arche* of fire.

The two forces of heat and cold also had the notable property of *perception*. Heat sought to 'stay warm' and cold sought to 'stay cool', and this tendency Telesio interpreted as a kind of sensation or knowledge. And since heat and cold inhered in all things, all things shared in this ability to sense. Thus his position is sometimes referred to as *pansensism*, a particular form of panpsychism.

Francesco **Patrizi** (1529-97) also sought to undermine the dominant Aristotelian scholasticism, and place greater emphasis on Plato's philosophy. His chief work, *Nova de universis philosophia* (New Philosophy of the Universe, 1591) laid out a complete cosmological system, and introduced into the Western vocabulary the term 'panpsychism'¹³.

Like Ficino, Patrizi creates a hierarchical system of being, though with nine levels¹⁴ instead of Ficino's five. Both men placed soul (*anima*) in the center of their hierarchies. Patrizi's nine levels are deeply interconnected, in a manner that Brickman describes as fundamentally *participatory*:

These nine grades are linked by a process of 'partaking of one another' – *participatio*. This 'partaking' [Patrizi] describes as an 'inter-illumination',

link to: http://www.bath.ac.uk/carpp/publications/doc_theses_links/d_skrbina.html

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... Each grade...is [at once] a 'partaker' (*particeps*),
 and is 'partaken of' (*participatus*). (1941: 34)

Participation is thus described, literally, as an 'en-lightening' process, and is deeply associated with the luminal aspects of the cosmos.

With soul at the center of this participatory hierarchy, it occupies a key role in mediating between the spiritual (four upper grades) and earthly (four lower grades) realms. It is clear that soul, in the form of the world-soul, penetrates all levels of being. The key question, as before, is whether the individual objects of the world possess souls in themselves (true panpsychism), or are merely an extension of the one world-soul. Patrizi clearly endorses the former view. He sees 'soul' as a manifold entity, present both as distinct individuals and as united in the comprehensive world-soul. Kristeller informs us 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." (op. cit., p. 122). In the words of Brickman, soul is "both [unity and plurality], with the many contained in the one." (op. cit., p. 41).

Giordano **Bruno** (1548-1600) looked to the heavens for the basis of his philosophical system, and created a vast and articulate vision of the cosmos. He combined the insight of Lucretius – that the universe was infinite – with the recent theory of Copernicus – that the sun was at the center of the solar system – and produced an astonishingly modern picture of the universe, comprising infinitely many solar systems not unlike our own.

Though bordering on heresy, Bruno argued that in fact his vision had support from standard theology. Since God was an infinite being with limitless power, only an infinite physical universe could do justice to him. A finite cosmos would imply something less than perfection, a kind of limit to God's power. On the other hand, this had a negative implication: if the universe were infinite, this would imply that there was nothing 'beyond' it, no special space or realm that was unique to the divine. Therefore, the divine realm must *be* the universe. As Ingegno says:

link to: http://www.bath.ac.uk/carpp/publications/doc_theses_links/d_skrbina.html

By linking the world necessarily with the divinity and vice versa, the divinity is established as that which is all in all and in everything. It cannot be 'elsewhere', since... 'elsewhere' does not exist. (1998: xx)

Thus, God is somehow both 'the cosmos itself' and a transcendent being of unlimited power. Read in the first sense, Bruno is pantheist; in the second, he is a panentheist. Scholars are still divided as to which interpretation is more correct¹⁵.

Bruno's view of 'the cosmos as divinity' is important in the history of the Participatory Worldview. Ever since Plato and Aristotle there had been a cosmic dualism in which the celestial realm was seen as fundamentally different in nature than the sublunary (earthly) realm. This necessitated an ontological schism in mankind's relationship with the universe at large. All varieties of intermediary systems were concocted to connect the human with the divine. Now with Bruno and his infinite universe, he has found a way to naturally and logically reunite the two; he has issued a "call for a healing of the division between nature and divinity decreed by Christianity" (ibid, p. xxi). Calcagno sees in this an early anticipation of present-day environmental philosophies; he refers to Bruno's "effort to reattach the self to its broader natural context – something perhaps which eco-philosophy is attempting to achieve [today]." (1998: 208). In any case, it is clearly a step at reinserting humanity into the natural scheme of things, and it makes the human a more natural participant in the cosmic order.

If the universe is infinite and all-encompassing, then clearly the universe must be seen in a fundamental sense as a *unity*. We saw the same emphasis in Cardano. In Renaissance Italy one finds the emergence of the concept of *naturalistic holism*, of seeing the cosmos as a naturally unified system. This kind of holism is a new feature of the larger stream of participatory thinking, and supplements the panpsychist element. From this point on, holism is an almost universal feature of participatory philosophy.

Bruno's panpsychism is developed primarily in his two dialogues *De la causa, principio, et uno* (Cause, Principle, and Unity), and *De l'infinito universo et mundi* (On the Infinite Universe and Worlds). Like the other Renaissance naturalists, Bruno endorses the idea

of God as a world-soul, and then explains that the general concept of 'soul' must adhere in everything, if only to maintain a consistent ontology. He states, "[N]ot only the form of the universe, but also all the forms of natural things are souls" (1584a: 42). Like the Greeks, he effectively equates life and soul, seeing them everywhere: "there is nothing that does not possess a soul and that has no vital principle" (ibid: 43). Soul is seen not as identical with being, but rather as an element or an aspect of all material objects:

All things, no matter how small and miniscule, have in them part of that spiritual substance... [F]or 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).

Summarizing Bruno's panpsychism, Kristeller writes: "For [Bruno] all things are animated by the world soul, and all matter is everywhere permeated by soul and spirit." (1964: 133). Thus it is not entirely clear to what degree the soul of individual things is truly independent of the world-soul. Bruno seems ambiguous, and perhaps with good reason; hylonoism offers to explain this ambiguity. Hylonoism argues that things are both independently minds *and* simultaneously participants in higher-order mind.

* * * * *

To continue this idea, let me briefly reexamine the philosophy of the first four Renaissance naturalists in light of hylonoism. There are a number of striking similarities, particularly with Bruno. This I take as evidence of a common perspective on the nature of reality. Hylonoism sees the world as an animate, participatory, holistic realm, and thus one should expect to find correlations with the similar views of the Italian naturalists. Such an exercise sheds light both on their views and on my theory.

Cardano was a mathematician as well as philosopher, and thus it is not surprising that he should see the world from a mathematical perspective. His system of a *three-part hierarchy* is significant because it links all levels of being in a common framework. Recall that for Cardano all things (1) are composed of parts, (2) are unities in themselves, and (3) are parts of a larger whole (with the possible exception of the cosmos).

Everything is linked to other systems, those both 'above' it and 'below' it. The 'below' is an internal structure, and the 'above' is an external structure. Any point in the chain from (presumably) atom to cosmos is linked to both an internal structure and an external structure. And all structures are ultimately connected in the One that is the cosmos.

Furthermore, every link in this chain is a *unity in itself*, resulting from the presence of a soul – interpreted as a generalization of 'mind' – acting in that link. As with the Stoic *pneuma*, the soul integrates each thing individually, makes it one, and makes it whole. And as with hylonoism, the hylon is the unity of the object, existing more or less intensely *depending on the degree of participation* between the elements. The difference of course is that the hylon is not a 'force', but rather the measure or indicator of unity.

So Cardano's system can be seen as a nested hierarchy of 'souls within souls', stretching from the very minute to the world-soul. This holds true for the human soul no less than for every soul (one recalls Nietzsche's proclamation that "our body is only a social structure composed of many souls [minds]" – 1889, sec. 19). This picture of 'nested souls' corresponds closely to the concept of 'nested minds' offered by hylonoism. In hylonoism, for example, the atom possesses a mind (hylon), and the molecule composed of many atoms possesses its own hylon, though in conjunction with the hylons of the atoms. So too does the protein which is composed of many molecules. The layers exist *hierarchically* and *simultaneously*. Every level of structure, from lowest to highest, has a dynamic description that can be captured in the concept of the hylon – which has the characteristics of mind. Cardano seems to have grasped this insight and expressed it in the terms of his day.

Finally, I want to note one other observation. Recall that I have argued that the hylon is inherently connected with all structures of matter, that this singular point of mind is associated with all physical systems, and yet the point itself dwells in a non-physical space that I have called the Partimens. Mind is connected to matter, but yet set apart. Cardano makes a very similar observation of soul. We saw previously that *anima* (or mind) was a basic principle of all bodies. He adds, "Moreover, *anima*, matter, and form all necessarily *have* body, and yet *anima* does not seem to be a *part* of body." (1550: 117, my italics). Soul (like matter and form) is connected to material objects, but is

uniquely immaterial. Cardano does not tell us why this is so; hylonoism, on the other hand, gives us a detailed description of the unity of mind, and how it is connected to matter yet apart from it.

Telesio has only indirect connections to hylonoism. Perhaps the most significant is his conception of *memory*. Telesio's 'soul' was very similar to the *pneuma*, except that it had the additional important quality of memory. Kristeller notes this same point: "[soul] possesses, besides sensation, the faculty of memory or retention". (1964: 100). This is significant because it is the first instance of memory playing an important role in a metaphysical system. This can be seen as an early anticipation of Bergson's philosophy, and even of the concept of memory as defined by chaos theory -- recall that all chaotic systems are inevitably changed by physical interaction; i.e. the path of the hylon through phase space is forever altered by even the smallest influence. A chaotic system 'records' all interactions (in the sense that the system evolves differently than if the interaction had not occurred), but does not necessarily have the ability to 'recall' a given experience. It is not clear how Telesio intends us to take his concept of memory -- as 'persistent record of experience' (as in chaos), or as 'ability to recall'. But the mere fact that he recognized the metaphysical significance of memory is notable.

Patrizi has no significant correlation with hylonoism, so I move on to Bruno. There are three important aspects of Bruno's thought that intersect with hylonoism. First is his concept of the '*monad*', and its relation to the concept of the hylon. Bruno is clearly an atomist, and believes that there exist some ultimately small and simple elements of matter; he refers to these variously as 'atoms', 'minima', or 'monads'. As it turns out, Bruno is not entirely clear or consistent in his definition of these monads, hence we see confusion 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 [they] have in them some of the qualities of the whole" (ibid: 72). Hoeffding states that monads are "also active force, soul, and will." (1908:138).

Consider Bruno’s own words on the matter: “Here is the monad, the atom: and the whole spirit extending hence upon every side; *it is without bulk*, its whole essence constituting all things by its symbols. ... For it is the prime basis of all things.” (*De minimo*, cited in Singer, 1950: 74; my italics). Elsewhere Bruno describes monads as “neither discrete nor continuous; but as forming a single continuum...” (*De l’infinito*, cited in *ibid*: 73). Certainly rather unusual and paradoxical things.

Interestingly, 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 elaborates: “the sun with its whole planetary system is a minimum in relation to the universe. Indeed, even the whole universe is called a monad. ... [T]he world-soul too, even God himself, is called a monad.” (1908: 138-9).

Bruno is often credited with creating the concept of the monad, but the term actually goes back to Plato, and perhaps before him to Pythagoras (more on this when I discuss Leibniz). We know this not directly, but through Aristotle. In *De anima* Aristotle discusses Plato's theory of mind, and notes that for Plato, "Mind is the monad." (404b22). The reference is to Plato's theory of numbers, and his assignment of 'mind' to the number one – mind as a singularity. This follows from the word 'monad', which comes from *monas*, 'unity'. As a neo-Platonist, it would not be surprising if Bruno in fact picked up this term of Plato's, and elaborated upon it. The fact that mind is seen by Plato as a unity is perhaps no great insight; even in folk psychology, the unity of the ego is well-recognized. What is new – and this is to Bruno's credit – is seeing mind not merely as a unity, but as a *point-like* unity. This is something new and unexpected. And it is of course notably consistent with the hylonoetic interpretation.

The hylon is the result of ‘active force’, representing the soul/mind of the system; it is “without bulk”; it exists in ‘different degrees’, applies to all systems large or small, and represents the wholeness or unity of a system. As I interpret Bruno, he had two different conceptions of ‘singularity’ in mind, but was unable to differentiate them. On the one hand he had Democritus’ material atoms that compose the physical world. On the other he had an *intuitive idea* of the unity point of the soul/mind. Here were two 'infinitesimal points' that somehow belonged to reality, were clearly related yet not identical. In the

terminology of hylonoism, we can now distinguish them; atoms have hylons, but atoms are not themselves hylons. This perhaps was the source of Bruno's confusion.

The second important feature of Bruno's philosophy (with respect to hylonoism) was his view that 'souls' overlap and interpenetrate with one another, and with the universe as a whole – not unlike Cardano's nested souls. Again this relates to hylonoism, where each hylon is seen as inextricably linked with all other parts of the universe, and which is part of a multi-layered system. Bruno is quite clear on this matter:

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. ... [T]he innumerable spirits and souls diffused throughout the same space interfere not at all with one another, nor doth the diffusion of one impede the diffusion of the infinity of others. (*De magia*, cited in Singer, 1950: 90-1).

Singer even describes this inter-diffusion in terms of *participation*: “the World Soul too is for Bruno an infinite continuum in which all things partake” (ibid). And Hoeffding relates a similar structure within the monads (atoms) themselves; he writes that “[Bruno] conceives atoms as being of different degrees, and atoms of one degree may include atoms of another.” (1908: 138).

Finally, the third connection to hylonoism is found in Bruno's theory of matter. He sees matter as one substance that exhibits two modes: ‘power’ (*potenza*), and ‘subjectivity’ (*soggetto*). 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 concepts of energy that we discussed earlier. The hylon is intimately connected with the ‘power’ (energy) of a given system, and in fact the power determines the intensity of the hylon and the characteristics of the quasi-attractor (‘personality’). 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 -- much like the virtual attractor. And like the hylon, subjectivity for Bruno is something incorporeal. In short, the *potenza* and *soggetto* represent the

‘physical’ and ‘mental’ modes of matter, respectively. Such a dual-aspect ontology is clearly compatible with a hylonoetic interpretation, and it anticipates the important advances by Campanella and Spinoza.

8) Campanella and the Transition to the 17th Century

The last of the five Renaissance Naturalists was Tommaso **Campanella** (1568-1639). Born in the 16th century, his thought and writing are perhaps more suited to the 17th; they are both the culmination of Italian Renaissance thought, and the immediate forbearers of the more rigorous philosophical developments of the new century. Campanella's contribution to participatory philosophy is difficult to underestimate, and I devote this final section entirely to his ideas.

Campanella made the first significant advancements in participatory philosophy in his development of *participatory ontology*, and *participatory epistemology*. Like the other Renaissance naturalists, he emphasized an empirical approach to knowledge, but not in the shallow sense of the British empiricists. Rather, he combined experiential knowledge of nature with metaphysical ‘first principles’ to form a complete philosophical system, in which a thoroughly participatory theory of knowledge was central. Before elaborating on this, I want to briefly discuss Campanella’s theory of “primalities” and its relation to his panpsychism.

Campanella’s doctrine of the primalities is one of the most original elements of his philosophy, and something that pervades his entire system of thought. This doctrine is a *participatory ontological theory*. 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 found in all things, from the humblest rock to God himself.

‘Power’ (*potentia*) has for Campanella 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 first and 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 on-going 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 I will discuss shortly.

There are two important points here. First, the usage of power as the preeminent principle of existence represents an advance from the Telesian conception of ‘heat’ and ‘cold’, but retains the essential reference to the idea of energy. And in fact, the terms ‘energy’ and ‘power’ were virtually synonymous in the 16th century, not having yet the notion of power as ‘the time rate of change of energy’. Also, the *potentia essendi* has an intriguing connection to very modern theories of existence, particularly the idea of a “dissipative structure” as an entity that requires ‘power’ to maintain its existence. More on this later.

Second, Campanella’s theory of power draws an interesting parallel to my own three-part conception of ‘participation’ (reference Chapter 1). The powers ‘to act’ and ‘to be acted upon’ align very nicely with participation as giving up something of oneself (*output*, as I worded it) and participation as receiving something from another (*reception*). My third usage was participation as incorporating the thing received into one’s own being, possessing it, and becoming transformed by it -- participation as a state of becoming. This is related to Campanella’s *potentia essendi*, as we shall see in the discussion of his epistemology.

The second primality is *wisdom*, or *knowledge*. Campanella argues that because all things sense, they therefore can be said to 'know', and consequently 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).

Hoeffding elaborates: “Every individual being has an ‘original hidden thought’ of itself, which is one with its nature.” (1908: 153). This, then, is the basis for Campanella’s panpsychism. We see the same idea, very explicitly, in the subtitle of his work *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 it’s 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).

Quite a ‘remarkable’ subtitle, and one that captures many aspects of his philosophy in a single sentence.

Campanella offers a number of arguments in support of his panpsychism as embodied in the primality of wisdom. Like Telesio, he argues that 'like comes from like', i.e. that 'emergence' is impossible:

Now, 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)

He also makes a theological argument for his view. Campanella 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 sees all things as *participating* (his word) in God, and thus sharing his qualities. This argument is again employed in reference not to just wisdom, but 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. As we know, Bruno was burned alive in 1600, and it was at about the same time that Campanella, at the age of 32, was imprisoned by the Inquisition; thus began a 27-year prison term for his beliefs. Fortunately for posterity, he was able to continue writing, and even to smuggle out works for publication by friends and supporters.

Campanella’s third primality, *love*, is a consequence of the primality of wisdom; things ‘love’ existence, and such love follows naturally from self-knowledge. In *Metafisica*, he explains it thusly:

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).

With this background in place, we can now examine Campanella’s participatory epistemology. First, he emphasizes that the three primalities are of a deeply participatory nature, each intermingled and overlapping the others. In his writings there is repeated reference not only to ‘participation’, but to an even stronger term: *toticipation*, or ‘total and complete participation’. In *toticipation*, the three primalities form a ‘supreme unity’, not unlike the Holy Trinity. Bonansea describes this condition as “not one of [mere] participation...but one of *toticipation* and coessentiation, so that one primality is totally and essentially communicated to another.” (ibid: 147).

The primality of knowledge 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, incorporated into its being, and is *thereby changed*. *It is this change that constitutes knowledge*. Campanella is eloquent: “Every sense is a change in the sentient body.” (1620, cited in Dooley, 1995: 49).

This change is not arbitrary. By incorporating an essence of the object, the knower becomes *like the object*. An *assimilation* occurs. Consider a simple example: how does a child come to know fire? He places his finger near, feels the heat, and recoils in pain. He learns about fire by literally 'becoming hot'. Heat is radiated from the flame to his body, and in a small way, he becomes like the fire. The heat energy is transferred to him, incorporated by his nervous system, and changes him – permanently. He now 'knows' fire in a deep sense, and will likely not forget it.

Thus, ‘knower’ and ‘known’ merge -- at least in part. To know something is to *become* it: an epistemology of becoming. Campanella captures this concept in his famous phrase *Cognoscere est esse* (‘to know is to be’, or ‘knowing is being’). I know something only to the extent that I become it, and I become it by incorporating some essence of it. This insight, as I have mentioned, goes all the way back to Empedocles and his pronouncement that *'like knows like'* – “for by earth we see earth...”. This is truly *deep participation*; a tangible, even visceral concept of knowledge.

Cassirer notes that such a participatory epistemology entails a joint sharing of a common essence, and that furthermore a panpsychist theory of mind naturally follows. He writes:

[T]his 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... (1927/1963: 148)

There are intriguing comparisons between Campanella's *Cognoscere* and Descartes' *Cogito, ergo sum*. The *Cogito* informs us that thinking precedes being; first, I think -- then, as a consequence, I establish my existence. In other words, thought entails being. On the face of it, the *Cognoscere* says something very similar: that 'knowing' really means 'being' (more precisely, 'becoming'). But the context is vastly different. Descartes gives us a static statement of ontology; being is fundamentally thinking. Campanella gives us a dynamic picture of *change*, one that is in fact more complex: things exist; by virtue of existence all things have the power to 'know'; and this knowledge is achieved by assimilating and becoming like the thing known.

Furthermore, implicit in Descartes' statement is his ontological dualism of mind and body, and his focus on the human to the exclusion of all other forms of being. Whereas with Campanella we find an integration and even identification of thought and being, and we find this occurring in all things in the universe. In fact, Campanella places himself firmly in the tradition of Parmenides, and provides the first intelligible elaboration of the Parmenidean identity of Thought and Being.

Campanella was 28 years the senior of Descartes, and naturally developed his views first. *De sensu rerum* was in print some 21 years prior to the Meditations, and we know that Descartes was influenced by Campanella; as Headley says, "Descartes read more of Campanella than he would ever wish to admit" (1997: 90). It thus seems likely that Descartes drew inspiration from Campanella. Even so, the distinction is clear. Descartes opted for a distinct dualism confined to the human species, and Campanella chose to articulate a participatory panpsychism in which knowing was equated to being.

Thus we see that for Campanella, knowledge is assimilation, sympathy -- even empathy. Campanella's is a sympathetic world, one which we come to know only through our participation. Headley, paraphrasing Cassirer, puts it very well: "The limits of one's sympathy for nature become the limits of one's knowledge of nature." (ibid: 163). For

any given being, whether human or non-human, living or non-living, *its degree of sympathy determines and defines its world*. Only to the extent that we sympathize with nature can we come to know nature.

There is one important aspect of Campanella's system that he fails to develop sufficiently, and that is the idea of *reciprocity*, or *exchange*. He lays out a cosmos in which all things have sense and knowledge, and he describes how the knower assimilates some essence of the thing known; the knower 'knows' by becoming changed, by becoming 'like' the known. The implication is that this is some kind of a one-way transaction, which is not at all the case. The 'thing known', while in the process of giving up some essence to the 'knower', is *simultaneously experiencing and comprehending the 'knower'*. When one being confronts another, *both are at once 'knower' and 'thing known'*. If I pick up a rock and contemplate it, feel its weight, its texture, see its color, I am incorporating some essences of that rock into my being, becoming changed by them, and thereby knowing the rock. At the same time, the rock is sensing me, receiving the heat of my body, feeling the force of my hand -- these influences change the rock, in however slight a manner, and thereby it comes to 'know' me. I become, in some small way, 'like the rock', and likewise the rock becomes, in some small way, 'like me'. We are both, simultaneously, knower and known. We change each other, together. *We participate in one another's existence*.

In such a picture, knowledge becomes reciprocal. It is all based on the concept of *exchange*. Each thing gives something of itself to the other, and through this process we come to know one another. Thus, participatory knowledge is based on *exchange*, and on *mutual transformation*. We co-create and co-define each other.

We move through the world by a series of interactions. Various things come in and out of our field of sensitivities. As things come into our perceptive field, we interact with them, and they interact with us. This interaction takes the form of exchange, as it must. Writing in the late 1800's, Georg Simmel noted this very fact, and stated it most concisely: "Every interaction has to be regarded as an exchange" (1900/1978: 82). It is this exchange, and the subsequent transformations, that are the basis of participatory knowledge.

But what exactly is exchanged? For Campanella it was his 'essences', but he was unable to more clearly define what these were. He could not quantify precisely what it is that gets exchanged. From the perspective of a material world, however, the answer is simple: mass or energy, in various forms. Different forms of energy have different effects on the 'knower', depending on its sensitivity to that particular form of energy. The sensitivity is determined by the path or channel through which the energy is incorporated into the knower. A shot of cognac may taste rich and sublime, and through this interaction I come to know some aspect of it. A splash on my hand may feel cool and clean, and this way I learn about some other aspect. Or, the same splash in my eye may sting badly, and bring about an altogether different type of knowledge. In all cases I assimilate the alcohol, but because the path of assimilation is different I learn different aspects of it.

By way of comparison, let me note here that in hylonoism I take Campanella's theory of participatory knowledge and extend it significantly. I claim that not merely knowledge but *mind itself* arises from interaction and exchange. The exchange of electrical energy in the brain results in the 'brain-mind', as one (dominant) aspect of the total mind of the body. But this phenomenon is general. *Every interaction is an exchange, and every exchange results in mind.* This is participatory panpsychism.

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."¹⁶ Leibniz ranked him with Bacon, Hobbes, and Descartes¹⁷. He remains, along with Bruno, as the outstanding exemplars of Renaissance naturalism, and they mark the turning point from a medieval, theological worldview to a modern, scientific worldview.

NOTES:

[1] There are some panpsychist positions which 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. This will be examined in more detail in Chapter 6.

[2] Additionally, there were at least another 80 or so lesser figures, including Xenophanes, Alcmaeon, Hippasus, Melissus, Archelaus, and a host of utterly obscure individuals. I will not be addressing their ideas here.

[3] Democritus was actually younger than Socrates, but he is typically grouped with the other pre-Socratics because of his close connection to Leucippus. I will follow tradition and refer to the 'Democritean theory of atomism', even though it is likely that Leucippus originated some of the concepts.

[4] Heraclitus does use a variant of *zoe* as an adjective describing his *arche* of fire. More on this in the text that follows.

[5] 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.

[6] It has been estimated that 90% of all world religions are or have been monotheistic.

[7] Iamblichus' development of his ideas on participation occur in Book I of his main work, On the Mysteries (ca. 290/1989). See especially chapters 7-10 and 18.

[8] See for example the passages 628, 743, 1041, 1069, 1070. Also helpful is the introductory discussion of this work by Morrow and Dillon (in Proclus, 1987: xix-xxiv).

A good general discussion of participation in Proclus can be found in Lloyd (1967: 305-313).

[9] O'Rourke observes: "His [Dionysius'] importance for Aquinas...should not be underestimated; the phrases and themes of Dionysius appear almost at every turn and in the most unexpected contexts." (1992: 276).

[10] The most recent account is Wippel (2000), especially Chapter 4, "Participation and the Problem of the One and the Many" – though this material is primarily a minor updating of Wippel's (1987). Other writings on the topic include Henle (1956), Clarke (1994), and Te Velde (1995). The earliest works focusing on Aquinas' theory of participation are Fabro (1939) and Geiger (1942), though neither book has been translated into English.

[11] His hierarchy consisted of: God, angelic mind, rational soul, 'quality', and 'body'. Soul, being in the third position, was at the 'center' of the cosmic hierarchy.

[12] This is virtually identical to Koestler's definition of the "holon" – see his 1967. Unfortunately Koestler nowhere cites these ideas of Cardano, which indicates a somewhat surprising lack of knowledge on his part.

[13] Patrizi's actual term was 'pampsychia'. I have found no explanation why he would have used an 'm' in his spelling.

[14] These levels are: unity, essence, life, intelligence, *soul*, nature, quality, form, and body.

[15] See for example Calcagno (1998: 195).

[16] Both quotations cited in Bonansea (1969: 35).

[17] Cf. Bonansea (1969: 36).