

Whitehead's Panpsychism as the Subjectivity of Prehension

Leemon B. McHenry

LEEMON B. McHENRY is Visiting Scholar in the Department of Philosophy, University of California, Los Angeles, CA 90024.

I. Introduction

Whitehead's concept of prehension is undeniably the master principle of his process metaphysics. It is the central function of a creative universe whereby the many past occasions become a novel one. In my view, the concept of prehension is Whitehead's most original and distinctive contribution to metaphysics. It is also the very idea that prevents most contemporary philosophers from understanding or appreciating his thought.

In this paper, I wish to explore the idealist context in which the concept of prehension becomes intelligible. While I do not deny that important influences from physics and biology helped Whitehead frame his idea, I contend that prehension only makes sense as a concept of panpsychistic idealism. Here I use the term 'idealism' not in the sense of nature dependent on mind, but rather nature understood fundamentally as sentient experience.¹ This appears to be Whitehead's intention when, introducing the term 'prehension' for the first time in *Science and the Modern World*, he says:

For Berkeley's *mind*, I substitute a process of prehensive unification. In order to make intelligible this concept of the progressive realization of natural occurrences, considerable expansion is required, and confrontation with its actual implications in terms of concrete experience. (SMW 69)

Whitehead also draws analogies with Leibniz's monads and Spinoza's modes in order to clarify how his novel idea of prehension squares with the notion of individual perspectives interlocked in a system of internal relations. From this point forward the concept of prehension undergoes considerable modification in *Process and Reality*, but the crucial idea of the perspective of the individual *experience* seems to be with Whitehead from the very outset of his excursion into metaphysics.²

II. The case for Whitehead's panpsychism

The view that Whitehead is a panpsychist has been the subject of some controversy. Whitehead himself carefully avoided the term in his writings, and when others described his philosophy as such, he was quick to disown the

characterization.³ Lewis Ford suggests that Whitehead's originally *non-panpsychist* leanings may have led him to distinguish between the physical occasion and the mental occasion so as to allow for the multitudes of actualities utterly devoid of mentality (EWM, 153-54). When Victor Lowe put the question to Whitehead directly, his reply was a rather evasive "Yes, and No."⁴ Like William James, Whitehead seems to have wavered on the point.⁵ But it is just as difficult to read James's *Essays in Radical Empiricism* as it is to read Whitehead's *Process and Reality* without seeing these works as affirming some form of panpsychistic idealism.⁶

Perhaps the best way to understand Whitehead's view on this matter is to situate his philosophy within a context of idealist philosophers who formulated a novel theory of experience against Cartesian dualism and scientific materialism. F. H. Bradley, William James, Charles Peirce, Josiah Royce and Whitehead all shared a common reaction to what Whitehead called a world composed of "vacuous actualities," i.e., insentient bits of matter standing in purely external relations to one another. This was the view of scientific materialism—the villain of Whitehead's *Science and the Modern World*. In opposition to nineteenth-century materialism, each of the above-mentioned philosophers sought to reformulate the concept of experience common to the British empiricists—experience understood primarily as sense experience—by seeking a wider application for metaphysics, and specifically some means of fusing mind and nature. Whereas the empiricists understood experience primarily in terms of its epistemological role, the idealist interpretation of experience in both its monist and pluralist versions functioned more in the context of deciding ontological matters. Whitehead, of course, makes his stand with the pluralists on this score. In this context, 'experience' means more than "clear and distinct" atomic sense data; it includes the sense of valuation, beauty, aversion and attraction, and involves a crucial element of our experience of time as momentary throbs passing one into another.⁷

Panpsychism thus presented an attractive alternative to materialism on the one hand and pure phenomenalism on the other by advancing the notion that actualities are experiences for themselves. As Whitehead says:

The actual world is a manifold of prehensions; and a 'prehension' is a 'prehensive occasion;' and a prehensive occasion is the most concrete finite entity, conceived as what it is in itself and for itself, and not as from its aspect in the essence of another such occasion (SMW 71).

This line of thought allowed him to develop a metaphysics that accounts for the system of nature and for the emergence of mind from actualities that contain in themselves the value orientation of sentient experience.

When Whitehead appears to be ambivalent about his commitment to panpsychism, I suggest that it is simply a matter of clarifying what type of panpsychism is in question. Throughout his metaphysics it is clear that he never

held the view that consciousness is fundamental to experience.⁸ This would distinguish his form of panpsychism from a position like that of Royce, who viewed apparently inorganic or inanimate nature as a consciousness utterly unintelligible to human perceivers.⁹ For Whitehead, consciousness arises from the more rudimentary basis of experiencing actualities, but only from the ones with a dominance in the mental pole and an intensity in the subjective form of the nexus (PR 267). In such a nexus, the occasions reach what Whitehead calls the "triumph of consciousness," i.e., a final stage of intellectual feelings in the concrescence—the feelings "arising from the contrast between inheritance and novel effect" (PR 279). This is Whitehead's rather complicated way of describing what James, in his *Principles of Psychology*, called the "stream of thought." Clearly these super-sophisticated occasions are relatively few by comparison with the multitudes of occasions that comprise the physical universe.

The variety of panpsychism that views sentient experience as fundamental is the view of Whitehead, James and Hartshorne.¹⁰ Thus Whitehead's repudiation of the term 'panpsychism' or his apparent wavering on the doctrine is a rejection of the view that takes the term to mean literally all is psyche or consciousness. To make things even more confusing, panpsychism is sometimes identified with a naive or primitive animism. Several terms have been introduced to avoid this difficulty: 'pan-valuism,' 'pan-subjectivity,' 'pan-experientialism' and 'pan-aestheticism.'¹¹ All are rather awkward titles for a specific variety of panpsychism that affirms the omnipresence of feeling in a creative universe.

Whitehead's early definition of prehension as uncognitive apprehension explicitly separates conscious or cognitive experience from the more rudimentary activity of sentient experience (SMW 69). This form of perception is clarified later in his *Symbolism: Its Meaning and Effect* with the distinction between causal efficacy and presentational immediacy. The nonsensory perception of prehension becomes the essentially dumb throb of causal efficacy. Since all actualities experience the basic sense of passage or the persistent inheritance of the immediate past, the development of sense organs is not even a necessary condition for experience. Our usual distinctions between organic and inorganic, living and nonliving, and humans and animals fail to have ultimate significance for a metaphysics of this sort. Whitehead, for example, contends that 'organic' and 'inorganic' are terms that merely serve a practical purpose in those endeavors for which such a distinction is relevant (PR 102). Up and down the continuum of nature we find that many apparently inorganic systems sustain the organic ones, and organic systems include subordinate inorganic ones. The philosophy of organism, with its emphasis on low-grade sentience and value in its basic units of experience, thus appears to reduce physics to biology. On this score, it is little wonder that some biologists have found Whitehead's panpsychism particularly illuminating as a foundation for genetics and evolution.¹²

On the frontier of speculative biology, the question of the origin of life is one of the most perplexing and hotly disputed issues.¹³ Among several hypotheses advanced, the ones taken more seriously involve an assumption that all of the necessary raw materials could have been assembled by natural means in the primordial soup; for example, it has been shown that amino acids necessary for the development of proteins emerge spontaneously in environments containing more primitive chemical compounds.¹⁴ Given the theory's experimental support thus far, it now needs to account for the process in which the RNA and DNA carry out the processes of metabolism and replication essential to life processes.

For the biologist seeking detailed chemical explanations, panpsychism would appear woefully inadequate. But as a metaphysical lens through which to view the plausible chain of events that led to the development of more complicated organisms, the theory has the general advantage of providing a smooth and continuous interpretation of nature in terms of the same ontological type. Substance thinking, by contrast, runs up against two abrupt changes in the evolutionary process. One involves the appearance of organic matter from inanimate and lifeless matter. The other involves the emergence of consciousness from organic life processes. While some progress has been made in explaining the first in purely materialistic terms, the second appears to take us well beyond the province of biology, even speculative biology.

When William James considered the question of how the "lights go on" at some stage of neural development in human beings, he was clear that sentience needed to be posited at the outset of the evolutionary process. Organic life processes and consciousness then evolve out of a more rudimentary form of the same stuff. As he makes the point for the doctrine he calls *atomic hylozoism*, he says:

We ought . . . ourselves sincerely to try every mode of conceiving the dawn of consciousness so that it may not appear equivalent to the irruption into the universe of a new nature, non-existent until then. . . . Consciousness, however little, is an illegitimate birth in any philosophy that starts without it, and yet professes to explain all facts by continuous evolution.

If evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things. Accordingly we find that the more clear-sighted evolutionary philosophers are beginning to posit it there (PP 148-49).¹⁵

C. H. Waddington, a geneticist who was strongly influenced by Whitehead, follows this line of thought by arguing: ". . . you have either got to have consciousness or at least something of that general kind, everywhere; or nowhere."¹⁶ In this view, then, consciousness does not emerge from antecedent states of purely physio-chemical systems. To posit such 'emergence' would be

to introduce an entirely new ontological category by means of what James calls an "illegitimate birth." Rather, in the view of Whitehead, James, and Waddington, consciousness emerges from a basis that shares the same characteristics as consciousness itself, namely, sentience and some rudimentary activity of value. It is a matter of difference in ontological degree rather than kind.

III. *Prehension as a generalization from psycho-physiology*

In Whitehead's view, the basic principles of life and evolution are present in a generalized way in the metaphysical principles. Although it is unclear how much Whitehead knew of the mechanics of genetics and evolution or of the specific chemistry behind life processes, he clearly intended to develop a system that accounts for the general features of the natural world (change, evolution and novelty) and for the higher-grade phenomena of mind and consciousness.¹⁷ As he said in one of his few surviving letters: "I am trying to evolve one way of speaking which applies equally to physics, physiology, psychology, and to our aesthetic experiences."¹⁸ In his attempt to capture the rich diversity of concrete experience, Whitehead thus created his psycho-physiological language of the prehensive activity of actual occasions. This allowed him to discuss both high-grade experience of cognition (in terms of 'conceptual feelings') and low-grade sentience of the sort that comprises the basic patterns of monotonous repetition in the physical world. Somewhere in between lies the balance of poles in the occasions that accounts for the evolution of organisms.

Throughout *Process and Reality*, there is little suggestion of Whitehead's method of generalizing from our psycho-physiological embodied experience. But compare, for example, an earlier description of this procedure with a later one. In *Science and the Modern World*, he says:

In this sketch of an analysis more concrete than that of the scientific scheme of thought, I have started from our own psychological field, as it stands for our cognition. I take it for what it claims to be: the self-knowledge of our bodily event. I mean the total event, and not the inspection of the details of the body. This self-knowledge discloses a prehensive unification of modal presences of entities beyond itself. I generalize by the use of the principle that this total bodily event is on the same level as all other events, except for an unusual complexity and stability of inherent pattern (SMW 73).

Much the same idea is advanced in *Adventures of Ideas*, when Whitehead says:

. . . if we hold, as for example in *Process and Reality*, that all final individual actualities have the metaphysical character of occasions of experience, then on that hypothesis the direct evidence as to the connectedness of one's immediate present occasion of experience with one's immediately past occasions, can be validly used to suggest categories applying to the connectedness of all occasions in nature (AI 221).

Both statements make it clear that the concept of prehension originates in introspection on our own concrete experience. Whitehead was particularly careful not to confuse the "clear and distinct" elements in our conscious experience with what is basic. This is where he makes a radical departure from traditional empiricism. In fact, for him, the vague and inarticulate feelings of our total bodily experience more accurately capture the continuous becoming in the perceptual mode of causal efficacy. His radical empiricism thus points to our visceral feelings of well-being as the paradigmatic case of perception. The psycho-physiological embodied experience sufficiently generalized provides Whitehead with the notion that the most complete concrete fact is dipolar, physical and mental.

In its most basic formulation, prehension is the sense of having emerged from one's own immediate past. The connectedness of nature that eludes a philosopher like Hume lies right under our noses. The precise elaboration of prehension, however, requires more than the vague sense of passage from our bodily experience; it requires an explanation of the process of appropriation. Hence in *Process and Reality*, Whitehead undertakes a detailed analysis of the concrescent process in human consciousness to discover clues to the basic mechanism by which novelty arises in nature.

The agency in the present experience is strongly suggested by Whitehead's use of the term 'value' to characterize the intrinsic reality of an actual occasion. When an occasion's subjective aim selects some element from its immediate past, it *includes* the datum as part of its constitution. Prehension is the activity in the present subject that appropriates the objective past. It is a matter of "picking up" rather than "passing on."¹⁹

In his *Principles of Psychology*, James identifies this selective attention as the fifth characteristic of the stream of thought. Few of us, he says, are aware of how incessantly the activity of choice is at work in operations not ordinarily called by these names: Sensation, reasoning, and aesthetic and ethical judgments are all shaped by the activity of the will in consciousness. As he puts the point: ". . . the mind is at every stage a theater of simultaneous possibilities. Consciousness consists in the comparison of these with each other, the selection of some, and the suppression of the rest by the reinforcing and inhibiting agency of attention" (PP 288). Properly generalized, this becomes Whitehead's view that the emergence of novelty in the natural world depends on the selective activity of occasions of experience.

It is not until *Process and Reality* that Whitehead refines the idea of selective activity in the concrescent process and distinguishes between positive and negative prehensions. 'Feeling' is the term he chooses to describe the activity of inclusion in a positive prehension. James's idea of suppression and inhibition associated with attention describes the activity of exclusion with negative prehensions. The emergence of novelty and the extinction of current forms of

existence are then explained by this fundamental activity of micro-entities in the creative process.

Hartshorne has noted that the highly original element in Whitehead's concept of prehension is that it combines two previously unrelated psychological phenomena: perception and memory.²⁰ Both link the present experience with an object in the past. In his psychology and radical empiricism, James had focused on the "felt transitions" in the stream of experience. His concept of "primary memory" captures the basic sense of survival of the immediate past in the specious present (PP 646f). But the link with perception to articulate one metaphysical idea with numerous applications for our understanding of the natural world was the unique insight of Whitehead's generalizing power.

IV. Ford's compositional analysis

In a provocative essay, "From Pre-Panpsychism to Pansubjectivity," Lewis Ford argues that Whitehead's concept of prehension in *Science and the Modern World* was not originally panpsychist in character. According to his compositional analysis of Whitehead's writings, we must be constantly on guard against interpreting Whitehead's earlier metaphysical works in terms of the process theory finally articulated in *Process and Reality*. If Whitehead did shift his position significantly from one work to another and even within the same work, then treating his entire metaphysical period as if it were one system not only distorts the meaning of each text but also misses the crucial development of his ideas.

While I am largely sympathetic with Ford's approach and have greatly benefited from his detailed investigations, I wish to raise a few problems with his interpretation of *Science and the Modern World*. As he himself notes in a caveat to his method, "the compositional analysis may only suggest and cannot determine the genetic analysis. Differing interpretations are possible on the basis of the same compositional analysis" (FPP 41).

Ford argues that neither panpsychism (all events possess mentality) nor pansubjectivity (all events possess subjectivity) is present in *Science and the Modern World* despite the emphasis placed on perception, interiority and prehension in all natural events. Accordingly, Whitehead's definition of pansubjectivity—"apart from the experiences of subjects there is nothing, nothing, nothing, bare nothingness" (PR 167)—cannot be used in any manner to characterize his thought before the 1926 essay on "Time." Ford agrees that the interpretation of nature in terms of consciousness is not the issue, since the concept of prehension is divested of its association with human perception. But he argues that interiority and prehension are preconditions of experience instead of *vice versa*, i.e., experience or subjectivity is the precondition for prehension and interiority. This directly contradicts much of what I have argued above.

Ford stresses the point that Whitehead's view of subjectivity is not a characteristic of being as it is in Leibniz's monads. Rather, subjectivity is conceived in a temporal manner; it is an act of becoming whereby an occasion moves through its private life to the satisfaction in the concrescence. Since subjectivity is necessarily tied to becoming and Whitehead had not developed his concept of becoming as present immediacy in the concrescent process, pansubjectivity is an inappropriate description of his theory in *Science and the Modern World*. Ford claims that the work seems panpsychist only because readers schooled in the thought of *Process and Reality* mistakenly read subjectivity into basic concepts like interiority and prehension (FPP 52).

Let us then investigate his claim in more detail by concentrating on these two concepts individually.

(a) Interiority. In the passages of *Science and the Modern World* in which Whitehead discusses the intrinsic reality of an event, Ford finds a discussion of what he calls 'interiority.' Whitehead uses the term 'value' to characterize the concrete experience of being an end in itself and says: "The definite finite entity is the selected mode which is the shaping of attainment; apart from such shaping into individual matter of fact there is no attainment" (SMW 94). The attainment of value is the realization of something that exists for itself.

Ford argues that interiority is simply the intrinsic pattern of other events grasped into the unity of the finite entity. Subjectivity is not a necessary condition for interiority, because we can regard interiority in a purely abstract manner of the relatedness of eternal objects or in terms of Whitehead's concept of the 'percipient event' in *The Concept of Nature*. In the earlier pre-metaphysical work, events more or less functioned as points in frames of reference for relativity theory. (The points themselves, however, were only ideal constructions reached by the method of extensive abstraction.)

(b) Prehension. Ford now passes on to analyze prehension as the way in which "every volume mirrors in itself every other volume" in space-time (SMW 65). Again his analysis depends on a comparison with an earlier work of Whitehead's, this time the fifth concept of the 1906 memoir "On Mathematical Concepts of the Material World." Ford compares prehension to projective points, "the bundle of lines from every other point converging together to form this point" (FPP 53). He then argues that Whitehead's references to perception necessary for defining the concept of prehension can be construed in the purely physicalistic terms of Bacon's theory. For example, Bacon says that the weatherglass perceives the weather or the magnet perceives iron (SMW 41f). Neither consciousness nor subjectivity are necessary to understand or interpret this meaning of perception.

Apparently, Ford encourages us to read *Science and the Modern World* in terms of the naturalistic and physicalistic conception of organism expounded in *The Concept of Nature*. Interiority and prehension are preconditions for the

emergence of subjectivity just as primitive feelings are the preconditions for the emergence of consciousness in Whitehead's later theory (FPP 52).

My first objection to Ford concerns the very distinction he makes between interiority and prehension. Since Whitehead himself does not use the term 'interiority,' it is not clear that there is a distinction. Moreover, by Ford's own analysis, they appear to amount to the same thing, namely, the internal relatedness of other events in the grasped unity of some particular focal event. If there is an important distinction here, Ford has not made it sufficiently clear.

Second, Ford's analysis of interiority and prehension results in a view that is far too abstract for the concrete interpretation of events or 'primary organisms' of *Science and the Modern World*. Aside from the critique of scientific materialism throughout this work, Whitehead is also advancing his view of philosophy as the critic of abstractions (SMW 87). His constant appeal to Berkeley's discovery that matter is an abstraction reinforces his claim that a philosophy of nature must be founded on concrete experience. This he combines forcefully with what he calls "an attitude of provisional realism," i.e., nature conceived "as a complex of prehensive unifications" to form the basis for a common world independent of our experience (cf: SMW 64, 68, 72). This view of primary organisms as experiences for themselves is a generalized concept of organism that allows Whitehead to unify the physical and biological sciences.

Berkeley had the right idea by insisting on the role of experience for concrete actualities but failed to see that actualities could be experiences for themselves existing independent of human perceivers. This is what I take to be the essence of Whitehead's point when he says, "a prehensive occasion is the most concrete finite entity, conceived as what it is in itself and for itself, and not as from its aspect in the essence of another such occasion" (SMW 71). Further comparisons with James's concept of the specious present and Bergson's *durée* make clear Whitehead's orientation to a radical empiricism in which transitions are parts of the experiences (SMW 50, 73, 104, 147). In this respect, I find that Ford's analysis suffers from a "misplaced concreteness" by stripping prehension of subjectivity. He has taken away the flesh and blood of concrete experience and left us with the bare bones of an abstract scheme of relations. Construed in this way, there is nothing left to do the actual work of prehending. Even his discussion of Bacon seems to miss Whitehead's point that Bacon had "expressed a more fundamental truth" by extending the meaning of perception. Bacon's theory allowed another possibility that might be more adequate for dealing with the problems of nature (SMW 42).

Third, when Whitehead used the term 'value' to define the intrinsic reality of an event, he was clearly aware of the association with subjective experience and the role of selectivity in characterizing his primary organisms. "Aesthetic attainment," he says, "is interwoven in the texture of realization" (SMW 94). Ford claims that this is not sufficient to ascribe subjectivity to all events (FPP

52), yet he admits that "subjectivity is essential for any emergence whatever, because only in the presence of subjectivity can there be any appropriate response to novel possibility" (FPP 48). But it is not clear how, in Ford's view, any evolution is possible if the events are not efficacious in terms of their selective activity. Ford does not account for this crucial aspect of Whitehead's thesis in *Science and the Modern World* because he contends that concepts like subjective aim are much later developments in Whitehead's thought (FPP 55, also cf: EWM 31). The evidence in the text, however, supports some rudimentary concept of aim. Like Peirce and James, Whitehead saw that the evolution hypothesis required a new ontology that "naturalized mind" and "mentalized nature."²¹ But he also saw that the received doctrine had neglected an important aspect of the development of nature. Whitehead identified two sides of the machinery of evolution: adaption to the environment, which he claimed had been emphasized by Darwin's followers, and the creativeness of organisms that results in a modification of the environment. With the cooperation of other organisms, a single organism alters the environment according to its own purpose (SMW 111). Whitehead's notion that "the emergence of organisms depends on a selective activity which is akin to purpose" accounts for this neglected side of evolution (SMW 107).

I accept Ford's discovery that temporal atomicity and epochal becoming were added to the text of *Science and the Modern World* after the Lowell Lectures. This is a crucial shift that allowed Whitehead to develop the detailed features of the concrescent process. This does not, however, necessarily mean that pan-subjectivity (or panpsychism as I defined the term above) had to come after this discovery. In this respect, I agree with David Griffin's early critique of Ford's *The Emergence of Whitehead's Metaphysics* when he says, "it appears . . . that Ford's interest in magnifying the importance of this shift to temporal atomicity—which seems to be a genuine discovery on his part has led him to be misleading about the extent to which pansubjectivity is already clearly expressed in earlier passages."²² For the most part, the language of pansubjectivity is absent from the text of *Science and the Modern World* but the concepts are present, albeit in a very rudimentary form.

V. Conclusion

Whitehead's commitment to panpsychism is comparable to that of James and Bradley, who both considered the doctrine but were, for various reasons, careful in their espousal of the view. It was simply too easy for others to misconstrue or ridicule and appeared to be reverting back to a primitive teleology abandoned with the scientific revolution.²³ The doctrine supplied the right kind of answer to the metaphysical and epistemological quandaries of dualism and provided some intelligible basis for understanding evolution, but at the same time, the charge of the pathetic fallacy (giving inanimate nature attributes that belong solely to human beings) loomed large in the background.

Whitehead's devastating critique of scientific materialism required that he offer his own solution. As he says:

A theory of science which discards materialism must answer the question as to the character of these primary entities. There can be only one answer on this basis. We must start with the event as the ultimate unit of natural occurrence. An event has to do with all that there is, and in particular with all other events . . . a non-materialistic philosophy of nature will identify a primary organism as being the emergence of some particular pattern as grasped in the unity of a real event (SMW 103).

In attempting to bridge the gap between human consciousness and the rest of nature, panpsychism appeared to be too large a price to pay.²⁴ The description of his events in terms of organisms downplayed the distinction between living and non-living systems. Whether such events must be conceived as sentient to make sense of his solution has been the main issue of disagreement above. *Science and the Modern World* is an obscure text on the issue of subjectivity. It is a hard nut to crack precisely because it is a newborn metaphysics with novel ideas not fully worked out. Ford's interpretation finds more in common with *The Concept of Nature* and "On Mathematical Concepts of the Material World" than with *Process and Reality*. But viewed in this way, the text becomes less rather than more intelligible. As I argued, the very concept of prehension makes little sense without viewing Whitehead's events as centers of experience actively selecting from their environments.²⁵

REFERENCES

- EWM Ford, Lewis S. *The Emergence of Whitehead's Metaphysics*. Albany: University of New York Press, 1984.
- FPP Ford, Lewis S. "From Pre-Panpsychism to Pansubjectivity," *Faith and Creativity: Essays in Honor of Eugene Peters*, Eds. George Nordgulen and George Shields. St. Louis: CPB Press, 1987.
- PP James, William. *Principles of Psychology*, Vol. I. London: Macmillan and Company, 1891.

NOTES

1. Whitehead himself always considered idealism to be an inadequate foundation for the special sciences, but this applies mainly to the epistemological doctrine of Berkeley's subjective idealism. Whitehead's realism is not incompatible with panpsychistic idealism since all observations are prehensions of an objective past existing independently of the subject. This secures the objectivity required for science.

2. This is clear throughout Whitehead's chapter "The Romantic Reaction" in *Science and the Modern World*. Consider, for example, his characterization of an event as an entity having intrinsic value in explicit contrast to his view in *The Concept of Nature*: "Remembering the poetic rendering of our concrete experience, we see at once that the element of value, of being valuable, of having value, of being an end in itself, of being something which is for its own sake, must not be omitted in any account of an event as the most concrete actual something. 'Value' is the word I use for the intrinsic reality of an event." (SMW 93)

3. See Victor Lowe, "The Concept of Experience in Whitehead's Metaphysics," in George L. Kline, ed., *Alfred North Whitehead: Essays on His Philosophy* (Englewood Cliffs: Prentice Hall, 1963) 126.

4. Victor Lowe to Leemon McHenry, 19 October 1983. Lowe does not give the date of his question.

5. For an interesting comparison of Whitehead and James on the issue of panpsychism, see Marcus Ford's *William James's Philosophy: A New Perspective* (Amherst: The University of Massachusetts Press, 1982), especially chapters 5 and 6.

6. Also see Whitehead's later essay, "Nature Alive," in *Modes of Thought* for what is normally taken as the clearest statement of his panpsychism.

7. The term 'throbs' of experience is here used to emphasize Whitehead's conviction that process is constituted by individual durations that are sentient but noncognitive.

8. This was a point that Whitehead shared with Absolute Idealist, F. H. Bradley. Whitehead also claims a special debt to Bradley for the concept of feeling. See my *Whitehead and Bradley: A Comparative Analysis* (Albany: State University of New York Press, 1992).

9. See for example, Royce's *The World and the Individual*, Vol. 2 (London: Macmillan and Company, 1901) 240.

10. For a more recent defense of this type of panpsychism, see Chapter 3. "The Vindication of Panpsychism," of Timothy Sprigge's *The Vindication of Absolute Idealism* (Edinburgh: Edinburgh University Press, 1983). Also in this connection, see his *James and Bradley: American Truth and British Reality* (LaSalle: Open Court, 1993).

11. See for example, Victor Lowe, *Understanding Whitehead* (Baltimore: Johns Hopkins University Press, 1966) 312; David R. Griffin, *Founders of Constructive Postmodern Philosophy*, ed. by David R. Griffin et al. (Albany: State University of New York Press, 1993) 3ff.

12. See, for example, C. H. Waddington, *The Nature of Life* (London: Allen and Unwin 1961) and *Towards a Theoretical Biology*, Vol. 2 (Edinburgh: Edinburgh University Press, 1969); W. E. Agar, *A Contribution to the Theory of the Living Organism* (Carlton:

Melbourne University Press, 1951) and Sewall Wright, "Gene and Organism," *The American Naturalist*, Vol. 87 (1953).

13. See for example, John L. Casti's "A Warm Little Pond", Chapter 2 in *Paradigms Lost* (New York: Avon Books, 1989).

14. Stanley Miller, "The First Laboratory Synthesis of Organic Compounds Under Primitive Conditions," *The Heritage of Copernicus*, ed. J. Neyman, (Cambridge, MA: MIT Press, 1974). 228-241. Miller's work has moved to the forefront of the debate because of his experimental success in 1952. In the Miller-Urey experiment, a combination of methane, ammonia, water vapor and hydrogen was placed in an apparatus that was then stimulated by a spark discharge simulating lightning. After some period of time, the mixture was found to contain significant amounts of the amino acids glycine and alanine, the building blocks of protein.

15. Although James did not actually embrace panpsychism at this point in his psychological writings, it is clear that this is an option he took more seriously for his later metaphysical works. See Marcus Ford, *William James's Philosophy*, 75-76.

16. C. H. Waddington, *Beyond Appearance* (Edinburgh: Edinburgh University Press, 1969) 114.

17. This point is discussed at some length by George Lucas, Jr. in chapter IV of *The Rehabilitation of Whitehead* (Albany: State University of New York Press, 1989).

18. Letter to T. North Whitehead dated March 7, 1928 printed in Victor Lowe, *Alfred North Whitehead: The Man and His Work, Vol. II* (Baltimore: Johns Hopkins University Press, 1990) 333. Whitehead's statement is remarkably similar to C. H. Waddington's view that: "Something must go on in the simplest inanimate things which can be described in the same language as would be used to describe our self-awareness." *The Nature of Life*, 121.

19. Dorothy Emmet, "Creativity and the Passage of Nature," *Whitehead's Metaphysics of Creativity* eds. Friedrich Rapp and Reiner Wiehl, (Albany: State University of New York Press, 1990) 64. Emmet argues that Whitehead did not recognize the difficulties with this view of prehension as "picking up."

20. Charles Hartshorne, *Whitehead's Philosophy* (Lincoln: University of Nebraska Press, 1972) 126. Also see 136.

21. It should be clear that while the Darwinian theory of evolution is entirely mechanistic and materialistic, the metaphysical theory that articulates the foundations of evolution need not embrace this formulation. Whitehead attacked the materialistic theory of evolution on the grounds that nothing could evolve from inert matter standing in purely external relations.

22. David Ray Griffin, review of Ford's *The Emergence of Whitehead's Metaphysics*, *Process Studies* 15.3 (1986) 195.

23. W. V. Quine and J. J. C. Smart, for example, contend that psychological phenomena are merely a "bump on the bump." As Quine writes, "The propositions of biology and psychology are local generalizations about some terrestrial growths of our acquaintance." *Theories and Things* (Cambridge: Harvard University Press, 1981) 93.

24. Even as early as *The Concept of Nature*, Whitehead had speculated that, "this alliance of the passage of mind with the passage of nature arises from their both sharing in some ultimate character of passage which dominates all being" (CN 69). This is not a consideration for his philosophy of natural science, but it became the focus of his metaphysical synthesis.

25. I should like to thank Professors Dorothy Emmet and Timothy Sprigge for their invaluable criticisms of an earlier draft of this paper during my stay in Cambridge and Edinburgh in the summer of 1994. Discussions with Rebecca Whisnant also helped me express more clearly what I wanted to say.