

God and Matter: An Inquiry into the Nature of God's Action in the Physical Universe

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I. Introduction

THE GOD of biblical faith is a "God who acts".¹ He is the Lord of history; he is a God who involves himself in the on-going drama of history, and makes the decisive difference in the final outcome of historical struggles. The transcendent God of the Bible is also immanent, i.e., present and active in nature and history.

But the concept of an "act of God" has become problematical in contemporary theology. Just as one strand of contemporary theology is involved in a loss of God's transcendence, another strand is involved in a loss of God's immanence. As Rudolf Bultmann reminds us, the problematical character of the idea of an act of God is tied up with the substitution of the modern scientific world view for the ancient mythological world view. Modern man assumes that any event in our world can be accounted for in terms of natural causes. He may not know the cause of a particular event, but his ignorance does not lead him to assume that the event is caused by an act of God; it instead leads him to a renewed search for causes that will enable him to understand and predict this type of event. Stephen Toulmin has suggested that natural science arises out

¹ G. E. Wright, *God Who Acts* (Naper-ville: Alec R. Allenson, 1957).

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of the kind of concrete human situation in which something unexpected happens, which leads to a search for a new understanding, so that the surprising event will, in the future, be expected.² Man no longer believes, as part of either his common sense or his scientific sense, the mythological world view in which God acts in nature and history as a separate force alongside natural forces. There simply are no events which can be isolated and designated as acts of God, except in the vestigial language of insurance policies, in which the phrase "act of God" covers innumerable types of catastrophes that are not insurable!

John Fenton has written, "It is odd that there should be such heavy emphasis upon the God who acts in history by the same generation that considers itself to have arrived at scientific maturity. This scholarly age that takes pride in its critical methods has ironically rediscovered God's mighty acts at the foundation of biblical theology. Most theologians, to be sure, have been extremely vague in their discussions of what an act of God looks like. In a scientific age, their timorousness is understandable. Yet, any theologian who maintains in this age that God acts must be able to tell us both how it is possible and what such an act looks like. . . Ordinarily, we can keep the religious and the scientific views insulated from one another, but talk about 'acts of God in history' appears to bring the two into direct conflict."³

But contemporary theology cannot

² Stephen Toulmin, *An Examination of the Place of Reason in Ethics* (Cambridge: Cambridge University Press, 1950), p. 88.

³ John Y. Fenton, "Random Events and the Act of God", *Journal of the American Academy of Religion*, XXXV (March, 1967), p. 50.

simply drop the concept of an act of God. I would submit that this issue is second in importance only to the issue of the very reality of God. Not only does the concept of God's action permeate biblical language, but it undergirds virtually all other theological topics, from Christology through the work of the Holy Spirit to the efficacy of prayer.

The problem of God's action is at the heart of much contemporary theology. We have already referred to Bultmann's preoccupation with this issue. The death of God theology really seems to point to a dearth of God's actions. The concern for verification of religious language, as in Flew's famous parable of the invisible, odorless, weightless, etc., gardener, seems to be a demand for a way of verifying God's action.

In biblical thought, God acts in history. God's action in nature is naively presupposed. God's delivery of Israel across the Sea of Reeds is primarily an historical event, and only secondarily an action in physical nature. For biblical man, nature is almost collapsed into history. The situation of modern man is different. We cannot naively presuppose God's action in nature. The focus of this paper is on the problem of God's action in nature, which is a problem for modern man, and which must be clarified if talk about God's action in history is not to be evasive.

The problem of the action of God is therefore an interesting one in that it is a problem where biblical theology and philosophical theology meet. It is a point where the God of Abraham, Isaac, and Jacob is also the God of the philosophers; at least, it is a point where the philosophers must clarify certain issues if the action of the God of Abraham, Isaac, and Jacob is to be credible. Though our method of approach will be that of philosophical theology, our motive will be to do justice to the living, acting God of the Bible.

II. Natural Law and Determinism

It is sometimes suggested that modern science presents us with a rigidly deterministic world view. It is held that science teaches that our world rigorously obeys natural laws, so that all events fit into a chain of causes and effects. The state of affairs at any moment is the cause of the state of affairs in the next moment, so that all events are causally determined. The most extreme statement of this view was, of course, that made by the eighteenth century astronomer and mathematician, Pierre Simon Laplace, who argued that an intelligence capable of grasping the situation of the universe at a given moment in its entirety, with all the forces animating it, could foresee in detail any possible future state of the universe; "the future, as the past, would be present to its eyes."⁴

If, as a matter of fact, such a world view is the teaching of modern science, then it would seem to be impossible to find any way to conceive of an act of God. If the state of the universe in the indefinite future is completely determined by natural causes already present and effective, then it is impossible to conceive of an act of God making any difference in the outcome of history. Some theologians who wrestle with this problem seem to presuppose that such a world view is implied by natural science. Bultmann, for instance, seems to assume that this is the teaching of science, and therefore finds room for God to act only in the realm of personal selfhood, which he divorces from impersonal nature.

It seems clear in retrospect, however, that Laplace's determinism was more a result of his metaphysics than of his physics. Contemporary philosophers of science make much more modest claims about the sort of world view implied in the work of scientists. Stephen Toulmin, for instance, who is emerging as

⁴ Pierre Simon Laplace, *A Philosophical Essay on Probabilities* (New York: Dover Press, 1961), p. 4.

one of the most important philosophers of this generation, is critical of such determinism.

Toulmin's discussion of the philosophy of science is especially valuable in that he seeks to avoid the clichés about scientific method found in many logic text-books and seeks instead to examine the activity of science as it is actually carried on by practitioners. He points out that the scientist rarely has occasion to use the term "cause". The search for causes has a practical motivation; it comes out of a desire to change things. Toulmin writes, "Wherever questions are asked about causes, some event, which may matter to us or may not, has a spotlight turned on it: the investigation of its causes is a scrutiny of its antecedents in order to discover what would have to be different for this sort of thing to happen otherwise — what in the antecedents God or man would need to manipulate in order to alter the spot-lighted event."⁵ Therefore, the search for causes is the work of the applied sciences — such as medicine — rather than of the physical sciences as such. "The study of the causes of this or that event is, therefore, always an application of physics. It is not of direct importance to the physicist."⁶

The diagnostic sciences, such as medicine, do look for causes, but the diagnostic and every-day search for causes differs in two important ways from the metaphysics of determinism. "First, the chains of circumstances which we speak of as leading, e.g., to a railway accident have nothing in the way of necessity about them: when we say 'The chain of circumstances was as follows . . .', our aim is to tell how it was that the accident came to happen, not to show that it must inevitably have happened. It is a further question whether or no, under the circumstances, the accident was in

any sense bound to happen. And secondly, such chains as these do not correspond for one with causal chains. They could be fitted into the determinist's picture only by including in them links from many different causal chains — as many, indeed, as the different branches of scientific theory which would have to be invoked, if we were to produce an exhaustive picture of the physical processes involved in the accident. The ways in which things happen outside the laboratory conform with unlimited exactness neither to the decrees of a machine-like Destiny nor to the pattern of any one simple argument."⁷ In summary, in the real world outside the laboratory, the search for causes explains how events came to pass, not how they inevitably had to come to pass, and no simple account of these causes is ever exhaustive.

The "nexus of cause and effect" is not basic to the working of science. "The chain manufacturer who made chains having the properties of causal chains would soon be a millionaire. For, as machines wear out and break down, so also do chains wear and snap. We do not find unbreakable chains in Nature, nor do we know how to make them."⁸ Toulmin flatly declares, "The Causal Nexus is . . . a myth."⁹

Of course, we do live in a universe that exhibits order, and scientists formulate laws that account for the structure in the order or regularity in nature. But we must not think of natural phenomena obediently following natural laws, like good citizens of a constitutional government.

I have found Alfred North Whitehead's analysis of the status of natural laws convincing. For Whitehead, the actual entities or occasions which compose the universe are internally related, so that they influence one another. Each occasion is inherited by a succeed-

⁵ Stephen Toulmin, *The Philosophy of Science* (New York: Harper & Row, 1960), pp. 120-121.

⁶ *Ibid.*, p. 122.

⁷ *Ibid.*, p. 164.

⁸ *Ibid.*, p. 163.

⁹ *Ibid.*, p. 161.

ing occasion, so that the characteristics of a given occasion tend to be passed on and so influence its successor. Occasions tend to reproduce their characteristics. The order of the universe therefore results from what Whitehead called the "customs" of a society of occasions, whether that society be a molecule, a cell, or a human society. It is not so much that phenomena obey natural laws; rather, natural laws point to the fact that actual occasions influence one another, causing a kind of physical sameness or order in the universe. Since the influence of an occasion on its successor is never complete, the laws tend to be statistical abstractions from the behaviour of actual entities. Different types of entities have different characteristics, and therefore pass on different sorts of influences. Therefore, there will be different laws for different types of entities, and as new kinds of entities emerge in evolution, we can say that new laws emerge with them, as a corollary to a new kind of social influence.

But for Whitehead, this pervasive influence of occasions on their successors is never complete. At the lower levels of existence, this social influence tends to dominate, so that we can speak with some precision of natural law. Molecules tend to be more orderly than human societies. Novelty, partial freedom from physical inheritance, is never completely excluded even at the lowest levels, however, or there would be no creative advance, no evolution, in the universe. Social conformity to their inheritance does not completely explain the behaviour of the entities we discover in the universe. Such conformity accounts for the order in the universe; but there is novelty as well as order. The search for causes comes out of our insight that the present doesn't come into being *de novo*; it must take account of the past. But there may be **alternative** ways of taking account of the past, so

there may be real novelty in the universe.¹⁰

This picture of the universe is similar in many ways to the picture which emerges from the study of quantum mechanics. The development of quantum physics suggests that there may be an element of intrinsic unpredictability or indeterminacy in the behaviour of sub-atomic particles. If this is so, there may be real freedom in the universe, even at its most elementary physical level. The universe is lawful, but the laws are statements of probability rather than of certainty. Some theologians have seized upon this development in quantum mechanics to suggest that God acts in the universe by influencing the behaviour of sub-atomic particles. Willam Pollard argues that, in terms of quantum mechanics, there are alternative ways in which a lawful universe may develop. Science describes the probabilities of any particular course, from the various possible courses, is actually taken, is a matter of chance, so far as science is concerned. For Pollard, this scientific chance is the "open door" through which God's providential action in the universe is effective.¹¹

John Fenton has criticized Pollard's argument on the basis that "indeterminate" does not necessarily imply "undetermined". There may be natural causes of which we are ignorant. Fenton presumably agrees with Einstein that God does not play dice with the universe. There is always a danger of having a "God of the gaps" who acts only in the areas of temporary scientific ignorance. However, there is good evidence that the Principle of Indeterminacy points not to a temporary scientific ignorance but to a real characteristic of

¹⁰ Alfred North Whitehead, *Process and Reality* (New York: Harper & Row, 1960), pp. 127-167. Cf. Richard Overman, *Evolution and the Christian Doctrine of Creation* (Philadelphia: Westminster, 1967), pp. 185-191.

¹¹ William G. Pollard, *Change and Providence: God's Action in a World Governed by Scientific Law* (New York: Scribner's, 1958).

the physical universe. Heisenberg argues that quantum mechanics has really restored potentiality, as opposed to determinism, to the world of nature. Fenton seems dogmatically to assume that the universe must be deterministic.¹²

My problem with Pollard is somewhat different. Pollard simply juxtaposes scientific chance with theological providence without showing how they are related. As Ian Barbour puts it, "He tries to correlate theological and scientific terms, such as providence and indeterminacy, without using philosophical middle terms."¹³ Even if we were to grant that God acts in the universe by influencing the behaviour of sub-atomic particles, the real problem is to develop an adequate conceptual understanding of the way in which God "influences" those particles.

We are not tied to a deterministic metaphysics which leaves no room for an act of God. An act of God presumably does not disrupt the regularities of nature formulated in natural laws. But there may be alternative ways in which the universe can exhibit order or regularity. The problem in conceiving an act of God is therefore not deterministic metaphysics. Our problem is that for us today the laws of science have explanatory power while the expression "act of God" does not have such explanatory power. The concept of an act of God will have no explanatory power if a clear meaning for this expression cannot be suggested. It is to this task that we now turn.

III. God and the World

Our problem is to suggest an adequate model for conceiving God's action. I would submit that we should turn to the realm of human personal action for

such a model. It is in examining the action of the human person, the image of God, that we may find an analogy or model for the action of God. The concept of action seems to be correlative to the concept of person. Only persons act; when speaking of the sub-personal, we would more accurately refer to "behaviour." An action, as distinguished from mere behaviour, proceeds out of purposeful subjectivity. As James McClendon has suggested, the logic of the statement "God led Israel across the Red Sea" seems to be closer to that of "Caesar crossed the Rubicon" than to that of "The pointer is to the left of 17 degrees."¹⁴

To adopt this approach is to hold, of course, that God is personal. It is to suggest that God must be conceived as ultimate Self, Mind, Thou, Ego, Soul, Subject, etc., who stands in relation to the physical universe much as our own selves are related to our bodies. God transcends and is immanent in the universe just as our selves transcend and are immanent in our bodies. The universe functions in relation to God as our bodies function in relation to us; the universe is God's body. There is, of course, a strong tradition in philosophical theology, from Plato to Hartshorne, that has exploited this analogy. Schubert Ogden, for instance, writes, "I hold with Hartshorne that the interaction between God and the world must be understood analogously to this interaction between our minds and bodies — with the difference that the former interaction takes place, not between God and a selected portion of his world (analogous to our own brain cells and central ner-

¹² Fenton, *op. cit.*, pp. 51-52. A good summary of the various interpretations of the implications of the Principle of Indeterminacy is in Ian Barbour, *Issues in Science and Religion* (Englewood Cliffs: Prentice-Hall, Inc., 1966), pp. 298-316.

¹³ Barbour, *op. cit.*, p. 430.

¹⁴ James Wm. McClendon, Jr., "Can There Be Talk About God-And-The-World?", *The Harvard Theological Review*, 62 (January, 1969), pp. 36-37. Cf. p. 49: "The problems in talk about God are not totally unlike the problems in talk about human acts, and . . . therefore the logic of the former may be more clearly delineated by investigating talk about men and their acts."

vous system), but between God and the whole world of his creatures."¹⁵

The problem is that there is a variety of possible interpretations of the relation of the self to the body. We cannot assume any consensus as to the relation of the self to its body and more particularly of the mind to the brain. For our purposes, this fact presents problems, but it also raises some interesting possibilities. As McClendon has pointed out, each of the current understandings of the mind-brain problem may suggest a different model for an understanding of the relation of God to the universe. There are various live options for conceiving God's relation to the universe, and these may parallel the various solutions of the mind-brain problem.¹⁶

For our purposes, we may classify the various solutions of the mind-brain problem into four groups. The two extreme positions in the spectrum we will discuss only briefly; the two positions that I consider live options will receive more attention.

1. At one extreme is the physicalist hypothesis which argues that the mind is simply an epiphenomenon of the brain. The thinking mind is totally dependent on, and reducible to, the working of the brain. The subjective mind is impotent, despite our introspective experience to the contrary. This argument reduces man to the **behaviour** of his body, as opposed to the **action** of a self. This position has a long philosoph-

¹⁵ Schubert Ogden, *The Reality of God* (New York: Harper & Row, 1966), p. 178. Even those who hold that personalistic language is inappropriate in terms of God in his aseity often turn to such language in discussing God's relation to the world. For instance, Robert Neville, who argues strongly for the "indeterminancy" of God, is willing to speak of God as personal when discussing the doctrine of providence. Robert C. Neville, *God the Creator* (Chicago: University of Chicago Press, 1968), pp. 257-273.

¹⁶ Language about acts of God "stands related to competing concepts of God just as the logical placing of talk about human acts stands related to competing current doctrines of mind." McClendon, *op. cit.*, p. 45.

ical history going back to the Greeks. An interesting contemporary statement is in a semi-popular work by Dean Wooldridge titled, revealingly enough, **Mechanical Man**. His argument is that the content of consciousness is "always and in detail the result of purely physical causes — the genetically determined wiring diagram of the nervous system and the physical activity in the neurons."¹⁷ He supports this by pointing to a wealth of experimental data in which artificially induced changes in the brain bring about corresponding changes in the state of consciousness. He does not deny the reality of consciousness. Consciousness exists, but it is impotent. "Every detail of the past and future history of mankind would be the same if consciousness were completely nonexistent, just so long as the physical laws of nature were kept unchanged."¹⁸

Behaviourism in psychology represents such a viewpoint, and Wooldridge describes biological evolution from this perspective. It is a widespread perspective among educated people, despite the serious objections that a number of philosophers have urged against it. I will not take time to summarize those objections, since I have nothing to add to them, but I will simply indicate that I concur with Charles Sherrington when he writes, "Regarded broadly, the goal toward which animal integration tends, if goal there be, would seem 'mind and more mind', and the immediate meaning of the finite mind in the body would seem to be to influence acts. Is influence acts. Its influence upon acts is what, we would think, has given it survival-value."¹⁹

If the action of God in the universe were conceived in terms of this model, God would have to be conceived in terms

¹⁷ Dean E. Wooldridge, *Mechanical Man: The Physical Basis of Intelligent Life* (New York: McGraw-Hill, 1968), p. 146.

¹⁸ *Ibid.*, p. 134.

¹⁹ Charles S. Sherrington, *Man on His Nature* (Cambridge: Cambridge University Press, 1951), p. 232.

of what may be called "naive supernaturalism." God would have a recognizable body, with its own recognizable pattern of behaviour, which would act as a force alongside of, and in competition with, natural causes. Such a naive supernaturalism can be discerned in portions of the Bible. Indeed, it is precisely the supernaturalistic understanding of God's action which Bultmann criticizes as "mythological," and it is therefore not a model which is particularly helpful to us.

2. At the other extreme of our spectrum is an idealistic understanding of man. The mind is real and potent, but the physical world, including the brain, is reduced to the status of ideas or sense data. Evolution is evolution of the Absolute Idea, rather than of matter. This perspective also has a rich philosophical history, and there is a corresponding idealistic understanding of God and the world, which usually tends toward pantheism. Once again, having indicated that this position is part of our spectrum, we will not develop it in any detail. The philosophical objections are powerful, so that, with a couple of interesting exceptions, it is not a strong contender on the current philosophical scene. As one who accepts the incarnation of the Logos in human flesh, I also have theological grounds for desiring to take matter with greater seriousness than does idealism.²⁰

3. This leaves us with two central positions, each of which takes both mind and matter as significant realities. Our third position thinks in terms of a dualism of mind and matter which has roots in the Platonic separation of soul and body and in the Cartesian distinction of thinking substance and extended substance. Mind and matter are irreducible realities which nonetheless,

simply as a matter of fact, are able to act upon one another.

The mind and the brain may be intimately related, but they are distinct. Sherrington examines the functioning of the brain in detail, but concludes that this still has not brought us to the mind. The brain is somewhat like a telephone exchange, with a series of switches and connections. But a telephone conversation involves more than the exchange; it involves the subscribers "with their thoughts, their desires, their anticipations, their motives, their anxieties, their rejoicings. If it is mind we are searching the brain for, then we are supposing the brain to be much more than telephone exchange. We are supposing it a telephone-exchange along with the subscribers as well."²¹

Sherrington does not deny that events in the brain have implications for the content of the mind. But he argues that the reverse is also true. The mind has an impact on the brain and indirectly on the whole body. He cites pain, for instance, as a mental event which is able to influence human action, regardless of the philosophical difficulties. "'Pain' seems to pay no heed to that old dilemma. My raging tooth drives me to the dentist as if it operated my motion thither."²² We have already quoted Sherrington's contention that it is mind's ability to influence actions which has given it survival value in evolution.

Curt Ducasse also stands in this dualist tradition. He defends the thought that mind can bring about material changes. "It is said, of course, that to suppose something non-physical, such as thought, to be capable of causing motion of a physical object, such as the body, is absurd. But I submit that if the heterogeneity of mind and matter makes this absurd, then it makes equally absurd the causation of mental states by stimulation of the body. Yet no absurdity is commonly found in the assertion that

²⁰ Among the interesting exceptions is the thought of Brand Blanshard, a subtle and insightful thinker. It has been pointed out that philosophical systems are not proven wrong; they simply go out of style. This seems to be the contemporary fate of idealism.

²¹ Sherrington, *op. cit.*, pp. 282-283.

²² *Ibid.*, p. 287.

cutting the skin causes a feeling of pain, or that alcohol, caffeine, bromides, and other drugs cause characteristic states of consciousness."²³

Ducasse's argument is pertinent. But the dualism of this position may still cause us to ask **how** matter brings about mental changes or **how** mind can cause material changes. Ducasse reminds us that asking how anything causes anything else is to ask for the intermediate steps in the causal chain. We can explain causation only by detailing intermediate steps of causation. For instance, in the statement, "Cigarette smoking causes lung cancer," there is presumably a complex series of causes which are summarized in the statement. But once we come to an instance of immediate causation there is no answer to the question of **how** the cause creates the effect. It is simply a brute fact that A causes B, in instances of immediate causation. This is true regardless of whether both A and B are material in nature, or whether A is mental and B is material, or A is material and B is mental. Immediate causation is simply a fact, which is equally as mysterious in the case of a material effect of a material cause as in the case of a material effect of a mental cause.²⁴

If we seek to interpret biological evolution in terms of this dualism of mind and matter, then mind is interpreted as an emergence of a radically new quality out of the earlier material evolution. Whereas Wooldridge is basically reductionistic in his interpretation of evolution, so that the emergence of life and mind in evolution is simply a complex rearrangement of the material world, this dualism argues for a much greater transcendence or emergence in evolution. Such an interpretation is suggested

by Theodosius Dobzhansky, in his work **The Biology of Ultimate Concern**. Dobzhansky argues that natural selection and mutation work together to produce real transcendence in biological evolution, so that real novelty emerges. Life itself is such a transcendence of the earlier cosmic evolution and self-aware mind is a radical transcendence in biological evolution. But there are innumerable lesser transcendences throughout biological evolution. Mind emerges as a real transcendence of matter in the course of evolution.²⁵

This dualistic understanding of mind and matter suggests a model for God's action in the universe. Just as mind and matter are distinct realities, so God and the universe are distinct realities. God's transcendence of the universe is emphasized, just as mind transcends matter. God is external to the universe, but is able to bring about real changes in it. In other words, this model of mind and matter seems to correlate with the theological position of traditional theism. God's action in this position may be interpreted as taking the form of miracle, in the sense of a violation of natural law. But this is not necessarily the case. For those theologians who hold that God's love for the world does not necessarily imply that he rapes the world, it is possible to conceive of God's action without violating natural law. H. H. Farmer's **The World and God** is an essay on the relation of God and the world which presupposes a dualism of this sort. He writes, "In our everyday life we are quite familiar with the idea of a volitional initiation of events which without that volition would not happen; yet it never enters our heads to suppose that the work of science is thereby stultified and thrown into confusion."²⁶

²³ Theodosius Dobzhansky, *The Biology of Ultimate Concern* (New York: The New American Library, 1967), pp. 35-62.

²⁶ H. H. Farmer, *The World and God* (London: Nisbet & Co., Ltd., 1935), p. 146. For Farmer, miracle points to the uniquely personal quality of God's beneficent love, rather than to any violation of natural law.

²³ Curt J. Ducasse, "The Empirical Case for Personal Survival," Antony Flew, ed., *Body, Mind, and Death* (New York: Macmillan, 1964), p. 229.

²⁴ Curt J. Ducasse, *Nature, Mind, and Death* (LaSalle, Ill: Open Court, 1951), pp. 101-149.

Farmer goes on to work out a theology of miracle understood without using the concept of a violation of natural law.

4. The fourth model also takes seriously both the mental and the material, but instead of relating them to one another externally and dualistically, a more internal and unitary relation is sought. This is panpsychism, which holds that mind and matter are two aspects or poles of a single kind of reality, so that they are two sides of the same coin, or even more intimately, like the concave and convex sides of an arc. Wherever matter exists, there is also a subjective, mental, inner aspect, so that reality is truly panpsychic. Mind exists in the most rudimentary states of matter.²⁷

Pierre Teilhard de Chardin holds this position. He argues that nothing radically new could ever emerge in the course of evolution. Contrary to Dobzhansky, he argues that whatever emerges in evolution must already have existed in a rudimentary or primordial way in the earlier stages of evolution. Yet, unlike Wooldridge, he is not a reductionist. Therefore, the only alternative is to make the original "stuff" of evolution more complex or mysterious than is ordinarily supposed. This means that the original material from which evolution began must have already contained a psychic, or "within", quality, as well as a physical, or "Without," quality. "Since the stuff of the universe has an inner aspect at one point of itself, there is necessarily a **double aspect to its structure**, that is to say in every region of space and time . . . **coextensive with**

²⁷ There are several grounds for panpsychism. It uses our own immediate experience as a clue to reality, since however reality is constituted, it must be such as to give rise to our own experience. Panpsychism insists on the continuity of the different levels of being, so that our own level is grounded in more rudimentary levels. Finally, it sees categories of metaphysical generality and coherence.

their Without, there is a Within to things."²⁸

However, it is not Teilhard's panpsychism that I find most convincing. There is both a spatial and a temporal panpsychism. When Teilhard speaks of the Within and the Without of reality, he is using a spatial metaphor. For Teilhard, entities are simultaneously mental and physical, within and without. Whitehead, on the other hand, uses a temporal metaphor. Each actual entity or occasion has a physical pole, which is the occasion's inheritance of a fixed, objective past, and a mental pole, which is its relatively free subjective aim towards a future satisfaction. The physical pole is part of the reason there is order in the universe and the mental pole is part of the reason there is novelty in the universe, as we have already seen.²⁹ An occasion is not simultaneously physical and mental. The entities of the universe are occasions of experience which are units of process in time. An occasion is in process from its physical pole to its mental pole. Subjective and objective are distinct phases of the concrescence of an event.³⁰

The mental pole is present in each occasion in the universe, no matter how rudimentary. In this sense, Whitehead is a panpsychist. Without the mental pole, there would be no novelty or life. However, the mental pole is inaccessible to the scientist, who, since he is dependent on sense data, can only observe that which is accomplished, fixed, physical. The mental pole takes place, writes Whitehead, in empty space. The novel, free, creative life in a cell, for instance,

²⁸ Pierre Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper & Row, 1965), p. 56.

²⁹ Order is also grounded in God's structuring of the possibilities from which an occasion chooses and novelty is also grounded in the fact that God offers alternative possibilities for actualization.

³⁰ Cf. Ian Barbour, "Teilhard's Process Metaphysics," *The Journal of Religion*, 49 (April, 1969), p. 143. Cf. Overman, *op. cit.*, p. 227.

is in the empty space of the cell; only the physical pole is observable as the molecules, etc., in the cell. Though the mental pole is always present, its presence may be vanishingly small, at the most rudimentary levels of existence. The physical pole tends to dominate at these levels, so that novelty is minimal, and "law and order" tend to prevail.³¹

In higher organisms, however, and especially at the human level, there is a dominant or presiding occasion of experience, which Whitehead calls the soul, and which we experience introspectively as the mind. The mind dominates the entire society or organism, even though we must not forget that the organism is composed of other occasions, each of which also has its mental pole. The dominant occasion is not only mental, but more specifically, it is self-conscious. The dominant occasion, or mind, is located in the empty spaces of the brain.³² Even though the mind is able to experience immediately only the adjacent occasions in the brain, in this region it is able to experience indirectly the entire body, because of the complex outreach of the central nervous system. By experiencing the occasions in the body, it is also able to experience the external world, which transmits information through the senses. The immediately contiguous occasions in the brain become the physical inheritance of occasions in the mind, which synthesizes its inheritance into conscious experience. However, the mind does not merely passively receive experience from the adjacent occasions in the brain. It in turn

is able to preside over the entire organism by passing its own experience back to the occasions in the brain and through the central nervous system it influences the actions of the body. Mind is able to act upon matter, but in this panspsychic position, this is not simply a brute fact. Mind can act upon matter, because the occasions of the brain have a mental or subjective pole which inherits the characteristics of the mind.

Whitehead suggests that the mind may also receive experience directly from other minds, in addition to its physical inheritance from the brain. Whether this is true or not is an empirical matter, but Whitehead was interested in investigations in telepathy which suggest that this is possible. In such a case of immediate apprehension of another subjectivity, the two subjectivities do not need to be spatially adjacent, as in the case of physical inheritance from the brain. We never experience a pure instance of prehension of another mind, since our minds are simultaneously being flooded with data from the brain. This is what makes the whole matter so complex.³³

In terms of biological evolution, mind does not emerge as a transcendence, which then is dualistically alongside matter. As we have seen in Teilhard's thought, mind is a dimension of the suff with which evolution began. It simply becomes more complex and changes qualitatively in the course of its complexification. This mental or radial energy is, for Teilhard, the source of direction in evolution. While Teilhard sees evolution as a single unitary process, Whitehead insists on many finite centers or occasions of evolutionary experience. But for Whitehead, too, there is final causation in evolution, as well as efficient causation, since at each level of evolution occasions have a mental pole as well as a physical pole.³⁴

³¹ Cf. Overman, *op. cit.*, pp. 191-198. Cf. Whitehead, *op. cit.*, pp. 127-167.

³² Whitehead's view of the soul is summarized in John Cobb, *A Christian Natural Theology Based on the Thought of Alfred North Whitehead* (Philadelphia: Westminster, 1965), pp.47-91. I share Cobb's view of the soul as being located in "a considerable region of the brain including both empty space and the regions occupied by many societies," p. 83, rather than Whitehead's own view that the soul "wanders" among the interstices of the brain. Cf. Whitehead, *op. cit.*, p. 160-163, 516.

³³ Whitehead, *op. cit.*, p. 469. Cobb, *op. cit.*, pp. 53-54.

³⁴ Cf. Overman, *op. cit.*, pp. 198-219.

This panpsychic model suggests a concept of God's action in the universe which parallels the panentheistic understanding of God of process theology. Mind is internally related to matter and the world is internally related to God. Transcendence of God is not lacking, just as my mind transcends the cells in my body. But the emphasis is on immanence. The many subjectivities of the universe are within the ultimate subjectivity which is God. These many finite subjectivities are immediately experienced by God and immediately influenced by God. Just as my mind exerts physical leverage by influencing the subjectivity in the cortex of my brain, God acts by influencing events even at the sub-atomic level of quantum mechanics. The difference between Whitehead and Pollard is that for Pollard, nature is merely physical, dead, neutral. He is not able to show how God acts at the sub-atomic level. Whitehead is able to do this, because for him all nature is panpsychic.³⁵

Our point about God's action at the quantum level of reality is not intended to suggest that God acts only at the sub-atomic level. Such a suggestion would locate "God's relationship to the world so far from the level of human historical existence as to make God practically absent from our lives."³⁶ However, we have focused on this point, because if God cannot exert a meaningful influence at this sub-atomic level, it is doubtful if we can conceive of his influence on higher levels which are dependent on these more elementary foundations. Our point is that God acts by influencing the subjectivities of the universe at whatever level those subjectivities are open to influence. At the quantum level, there is minimal subjectivity, and so minimal influence of God, but this does not mean that we should rule out all subjectivity and all influence. Granted the immense numbers of subjectivities

at this level, God is able to move the world, though the novelty possible in any given occasion is vanishingly small. (This is perhaps why evolution moved so incredibly slowly during its cosmic or inanimate stage; there was minimal subjectivity for God to lure and to influence. Evolution seems to be picking up tempo as subjectivity intensifies. God is able to exert greater influence. At the stage of human cultural evolution, of course, the tempo of evolution is astonishing.)

At the human level of subjectivity, God's action is more intensive. The human level of subjectivity is complex and profound enough to allow God much greater scope for acting, influencing, luring. Among the complex factors which constitute our human subjectivity, there is a sympathetic awareness, or prehension, of God's own subjectivity. As a rule, this awareness is pervasive and unconscious, but on occasion, this awareness arises to consciousness. Whitehead was interested in telepathic research as providing some evidence for this type of immediate communication of subjectivities with one another. Don Browning, in his book *Atonement and Psychotherapy*, draws on psychotherapy as evidence for this immediate awareness of another subjectivity, which he calls "subception", as contrasted with "perception". Just as the client has to subceive the therapist's acceptance, so we are able to subceive God's ultimate acceptance.³⁷

Richard Overman, in his study of Whitehead, writes, "If God really is a living person as we have suggested, then we are quite justified in speaking of him using personalistic words from our own experience as persons Therefore, if we find ourselves addressed by God questioned, judged, and blessed by him, as Bultmann puts it, this discovery may be grounded in God's actual questioning, judging, and blessing

³⁵ Cf. Overman, *op. cit.*, pp.137-138.

³⁶ *Ibid.*, p. 137.

³⁷ Don Browning, *Atonement and Psychotherapy* (Philadelphia: Westminster, 1966).

of us, felt as we prehend occasions of God's personality along with other occasions in our past. The question—and it is vexing indeed — it whether in tracing the origin of our own conscious feelings we are correct in attributing feelings of judgment and blessing to God, or whether they, in fact, originate in some other actual entities—perhaps merely in our own personality! But that God addresses us, questions, judges, and blesses **may** be quite literally true, not an archaic expression in need of demythologization."³⁸

In a moving, almost mythological statement at the close of his book *The Phenomenon of Life*, Hans Jonas raises the possibility that "by the reflection of its own state as it wavers with the record of man, the transcendent casts light and shadow over the human landscape."³⁹ He raises the issue of the final significance of the mass murders of our century, "the gassed and burnt children of Auschwitz . . . and of all the other, numberless victims of the other man-made holocausts of our time."⁴⁰ Surely such outrageous crimes as our century has committed make their mark in God's transcendent subjectivity, and if the thought that we have outlined is at all correct, that subjectivity of God is reflected back and felt in the subjectivity of each of us. Jonas writes, "This I like to believe: that there was weeping in the heights at the waste and despoilment of humanity; that a groan answered the rising shout of ignoble suffering, and wrath—the terrible wrong done to the reality and possibility of each life thus wantonly victimized, each one a thwarted attempt of God. The voice of thy brother's blood cries unto me from the grounds: should we not believe that the immense chorus of such cries that has risen up in our lifetime now hangs over our world as a dark and accusing cloud? that eternity

looks down upon us with a frown, wounded itself and perturbed in its depths?

"And might we not even feel it? I think it is possible, in spite of what I have said about the closed immanence of the worldly realm. For the secret sympathy that connects our being with the transcendent condition and makes the later depend on our deeds, must somehow work both ways . . . If so, the state of transcendence, as we have let it become, will in turn have a resonance in ours—sometimes felt, though mostly not, and presently felt, perhaps, in a general malaise, in the profound distemper of the contemporary mind. Things human do not prosper under our hands. Happiness eludes our pursuit, and meaning mocks our desperate need. Could it be that, superinduced upon the many-layered, but never completely explaining causes from within our historical existence, also the disturbance of the transcendent order which we have caused by the monstrous crimes of our time, thus reacts on the spiritual mood of men . . . ?"⁴¹ That our contemporary malaise and despair is a reflection of God's wrath at the crimes of our century, and that God's characteristic act at this point in history is an eclipsing of his presence, is a sobering thought indeed.

IV. Conclusion

The two concepts of the mind-brain problem that we have emphasized parallel the Greek and Biblical views of man. The more dualistic understanding is grounded in Plato's sharp distinction of soul and body. The pansychic solution is parallel to the biblical emphasis on man as a living, personal body. Therefore, I would agree with Hartshorne that theism is grounded in Greek metaphysics while pantheism is grounded in biblical faith.⁴²

³⁸ Overman, *op. cit.*, pp. 277-278.

³⁹ Hans Jonas, *The Phenomenon of Life* (New York: Harper & Row, 1966), p. 277.

⁴⁰ *Ibid.*, p. 279.

⁴¹ *Ibid.*, p. 280.

⁴² Thomas M. Dicken, "Process Philosophy and the Real Presence," *Journal of Ecumenical Studies*, 6 (Winter, 1969), pp. 68-75.

Another parallel is worth noting. The theology of the Eucharist is always an area of discussion in which conflicting attitudes toward matter are revealed. It seems that an emphasis on the physical real presence, as in the idea of transubstantiation, would parallel the physicalist concept of man. Only the physical or material is objectively real and potent. The Quaker rejection of the bread and wine, on the basis that only a spiritual, inner communion and real presence is valid, parallels the idealist attitude towards matter. Calvinistic emphasis on a spiritual real presence along with the physical bread and wine is a dualistic attitude. Finally, I have attempted to work out the logic of the real presence in terms of process philosophy in an article in the *Journal of Ecumenical Studies*, entitled "Process Philosophy and the Real Presence".⁴³

There are several directions in which

⁴³ *Ibid.*

these conclusions could be pushed. I am sure that we will be hearing much throughout this Institute on the theologies of hope and of revolution. These theologies are primarily concerned with God's action in history. For this reason, they are more typically biblical theologies, than is my own concern with God's action in nature. However, I would argue that the twentieth century Christian cannot fully accept the biblical worldview, and this is one symptom of that fact. The development of modern science has given us a kind of concern with the world of nature which would be alien to biblical man. For us, God's action in history cannot be naively divorced from God's action in the world of nature. I would argue that Whitehead's process philosophy, with its emphasis on mind as a novel straining into the future, offers the best philosophical grounding for a theology of hope and revolution.