Whitehead's View of Reality

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By

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In Memoriam

Charles & Dorothy Hartshorne

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2010 PREFACE

It is appropriate that this volume is being reprinted, as there has been a resurgence of interest in the philosophy of Alfred North Whitehead. For example, there have been seven International Whitehead conferences held in the following cities: Bonn (1981), Nagoya (1984), Claremont (1998), Beijing (2002), Seoul (2004), Salzburg (2006), Bangalore (2009). The 8th is being planned for Tokyo, 2011.

This resurgence is due to the leadership of John Cobb in developing the Claremont Center in Process Studies and, more especially, to Charles Hartshorne for his philosophy and his interpretation of Whitehead. Hartshorne (June 5, 1897–October 9, 2000), like Whitehead, was the son of an Anglican minister. The two met while Hartshorne was completing the doctoral program in philosophy at Harvard. Hartshorne's basic philosophy, with C. S. Peirce as his major influence, had been formed by the time he met Whitehead.

Hartshorne is considered by many philosophers as one of the most significant philosophers of religion and metaphysicians of the twentieth century and the only great metaphysician who lived in three centuries. He was one of the philosophers responsible for the rediscovery of St. Anselm's ontological argument. However, Hartshorne was not interesting in the arguments for the existence of God but, rather, focused on the actuality of God. His neoclassical theism differed also from classical theism in that he viewed God as supreme becoming instead of as supreme, unchanging being.

This volume differs from the original in that corrections to the text have been made as required, a Biographical Note on Whitehead has been added, and a Bibliography and extensive Index have been prepared.

I want to express my appreciation to John Gaston for his efforts in preparing this manuscript for publication.

—W. Creighton Peden, 2010

1981 PREFACE

At various transitional stages in human development, particular philosophers have been of crucial importance. Alfred North Whitehead is such a philosopher. It is hoped that this volume will assist and encourage the serious student to an in depth consideration of Whitehead's thought. In it we present an analysis of the historical context in which Whitehead's philosophy develops and then present an exposition of various aspects of his position.

In our society today there is a continuing dialog concerning the appropriate use of language, including pronouns referring to God. While we are sensitive to the issues in this dialog, the language employed has been selected because it seems appropriate to the historical context of Whitehead's thought.

Although there are many students and colleagues to whom we are indebted for critical discussion, we would like especially to express our appreciation to Carolyn Vickers for her efforts in manuscript preparation.

—Charles Hartshorne and W. Creighton Peden
1981

ALFRED NORTH WHITEHEAD: A BIOGRAPHICAL NOTE

BY W. CREIGHTON PEDEN

Alfred North Whitehead was born on February 15, 1861 at Ramsgate in the Isle of Thanet, Kent. His grandfather and father were schoolmasters at Ramsgate. Alfred Whitehead, his father, was ordained in the Anglican Church in 1860, and by 1867 retired from being schoolmaster for full time clerical duties in Ramsgate. In 1871, Alfred Whitehead was appointed Vicar of St. Peters Parish, about 3 miles from Ramsgate, where he served until his death in 1898. Until Alfred North Whitehead left home for his education in 1875, he accompanied his father in his duties.

Whitehead was influenced by the mass of archaeological remains which surrounded him. Roman ruins and Norman architecture dominated the ancient churches on his Island. In the village of Minster on the Island was the Abbey Church, where Augustine preached his first sermon after landing with the Saxons. At the age of fourteen (1875), Whitehead attended school at Sherborne in Dorsetshire. Having moved to the other end of southern England, he found the relics of the past to be even more obvious.

Education for Whitehead conformed to the normal standards of the time. He began to study Latin at the age of ten and Greek when he was twelve, with these being his dominate subjects until the age of nineteen and a half years. Mathematics and the writings of classical authors, especially on history, were also part of his education at this time. He noted that he was excused from Latin Verse and Poetry so that he could devote more time to mathematics.

Whitehead's university life began in 1880 at Trinity College, Cambridge. At Trinity, he moved from being a student to a faculty member and was in residence until 1910. As a student, all Whitehead's lectures were on pure and applied mathematics. He noted that this side of his education was supplemented with constant conversations with students and staff, which generally occurred at the evening meal and lasted for around three hours. These experiences led him to consume vast amount of miscellaneous

reading. He noted that by the time he received his fellowship in 1885, he knew by heart parts of Kant's *Critique of Pure Reason*. However he soon became disenchanted with Kant. He turned to Hegel, but dismissed him after reading some of his comments on Mathematics, which he considered complete nonsense.

Looking back on his extended education, he noted that it had the appearance of a Platonic dialogue. This Platonic approach was especially recognized in his participation in the "Apostles" who meet on Saturdays in each other's rooms, from 10 p.m. until sometime the next morning. Faculty members and visiting scholars and politicians were invited to participate in these sessions, which further enriched the manner in which one received a Cambridge education. However, Whitehead noted that this Platonic education was limited in its application to life.

In 1890, Whitehead married Evelyn Willoughby Wade. His narrow education was fundamentally altered by the experiences of his wife, which he noted to be an essential factor in his philosophic work. Her background was military and diplomatic, which was completely different from his. She enriched his life by her understanding that beauty was the aim of existence, with kindness, love, and artistic satisfaction being ways of attaining beauty. It was an aesthetic appreciation that she brought to his life and which enriched his philosophical development, as it opened to him the riches of great art and literature.

The Whitehead Evelyn Willoughby Wade's three children were born in 1891 and 1898. All three children served in the First World War. North, their elder son, fought throughout the war. Jessie, their daughter, worked in the Foreign Office. Their youngest son, Eric, was shot down over France in March, 1918, with fatal results. With three young children, the Whiteheads decided to move from Cambridge to the Old Mill House at Grantchester, which is about 3 miles from Cambridge. The mill was still working at the time. Some parts of the house dated to the sixteenth century, with one of the mill pools having been mentioned by Chaucer. They formed close friendships with neighbors—the poet Rupert Brooke, Shuckburgh the translator of Cicero's letters, and the geneticist William Batesons. They had a beautiful garden with flowering creepers covering much of the house and a yew tree which they thought might have been planted by Chaucer.

Whitehead's first book, *A Treatise on Universal Algebra,* was published in February, 1898. He noted that the ideas in it were essentially based on Herman Grassmann's two books, the *Ausdehnungslehre* (1844) and the *Ausdehnungslehre* (1862). He was also influenced by Sir William Rowan Hamilton's *Quaternions* (1853) and a preliminary paper (1844), as

well by Boole's *Symbolic Logic* (1859). Whitehead suggested that his work on Mathematical Logic was derived from these influences. Between 1898 and 1903, Whitehead worked on a second volume of *Universal Algebra*, which was never published.

Bertrand Russell began as a Cambridge student in the early 1890s and soon became a student of Whitehead's. In 1903 Russell published his first work, *The Principles of Mathematics.* Russell and Whitehead soon realized that each was working on a second volume on practically identical topics. They expected to produce a joint publication within a year, but it took almost nine years before *Principia Mathematica* was produced in three volumes (1910, 1912, and 1913).

In 1910 Whitehead left his academic position at Cambridge University and moved to London. For most of their time in London, the Whiteheads lived in Carlyle Square. During his first academic year in London, Whitehead did not teach, devoting his time to writing his *Introduction to Mathematics* (1911). Between 1911 and 1914, he had various positions at University College, London.

From 1914 to 1924 Whitehead had a professorship at the Imperial College of Science and Technology in Kensington. In addition to teaching, he also served in different administrative positions: Dean of the Faculty of Science in the University, Chairman of the Academic Council, Chairman of the Council that managed The Goldsmith's College, and he also served as a member of the Council of the Borough Polytechnic.

We gather a glimpse into the Whitehead's personal life from Gertrude Stein's *Autobiography of Alice B. Toklas.* Because of the War, Stein and Toklas left Paris in 1913 for the safety of Britain. Stein had heard a good deal about Doctor and Mrs. Whitehead and found them interesting. While in Cambridge Stein and Toklas were to have dinner at the home of Hope Mirlees, which was also attended by the Whiteheads. Stein tells us that she spent most of the dinner looking at Dr. Whitehead; "later we went into the garden and he came and sat next to me and we talked about the sky in Cambridge."[1] Following the dinner with Dr. , Stein has Toklas saying "I met my third genius."[2] The two couples found each other interesting, with the Whiteheads inviting Stein and Toklas for dinner in London. "We dined with the Whiteheads and liked them more than ever and they like us more than ever and were kind enough to say so."[3]

The Whiteheads had a country home in Lockridge, near Salisbury Plain, to which they invited Stein and Toklas for a weekend visit. The War was becoming more dangerous by the day, as the Germans had just invaded Belgium. At the end of the weekend Stein and Toklas were leaving to return to Paris. Mrs. Whitehead invited them to stay with them

until the situation become more positive. Stein and Toklas accepted, but had to return to London to secure their luggage and to arrange the securing of money from the United States. They then met Mrs. Whitehead at the train and went back to Lockridge. Toklas joined Mrs. Whitehead who was very involved in planning for war activities and helping everyone she could. "Gertrude Stein and Doctor Whitehead walked endlessly around the country. They talked of philosophy and history, as it was during these days that Gertrude Stein realized how completely it was Doctor Whitehead and not Russell who had had the ideas for their great book. Doctor Whitehead, the gentlest and most simply generous of human beings never claimed anything for himself and enormously admired anyone who was brilliant, and Russell undoubtedly was brilliant."[4] On these walks they talked with game keepers and mole-catchers.

The Germans were getting nearer and nearer to Paris, which led Whitehead to ask Stein if her manuscripts were in Paris. She replied that they were. Later Whitehead came to Stein's room to tell her that Paris was saved, as the Germans were in retreat.

Stein found the Whitehead's home to be a center of much activity with a great many people coming and going. Lytton Strachey, who lived near Lockridge, was often a visitor. Strachey and Stein had met previously in London. In renewing their acquaintance they took long walks discussing Picasso and the Russian ballet. Bertrand Russell came for a visit. Mrs. Whitehead could not bear listening to Russell's views on the war, so Stein introduced the subject of education. Russell explained the weakness of the American educational system, particularly the neglect of the study of Greek. Stein fussed Russell by arguing that "the lack of value of Greek culture for the Americans based upon the psychology of Americans all different from the psychology of the English…"[5]

With the Germans in retreat, it was now safe for Stein and Toklas to return to Paris. Mrs. Whitehead, who had been ill, decided to accompany them, intending to take a heavy coat to her son, North. After a short time, Mrs. Whitehead had arranged to get the coat to North, so she returned to London.

Whitehead's fourteen years in London transformed his views concerning the problems of education in a modern industrial society. The First World War had brought an end to societies based on special privilege. Now the masses from every social grade were seeking intellectual enlightenment and adequate knowledge for solving the problems facing civilization following the War. This was true in Europe as well as in the United States. He hoped that the novel adaptation of education would be one of the factors which might save civilization.

The increasing problems in education were also developing during Whitehead's years at Cambridge. The role of women at Cambridge had arisen, with Whitehead serving on the University Syndicate which reported in favor of equal status for all students in the University. After stormy sessions, the report was defeated. The issue also arose in London, but was also defeated. However, by 1918, the issue had been positively settled.

Although education was Whitehead primary concern while in London, he did return to philosophic writings toward the end of the War. The London Aristotelian Society served as a center where he could share and discuss his ideas. Whitehead served as president of the Aristotelian Society, 1922–1923. He was a Fellow of the Royal Society since 1903 and was elected to the British Academy in 1931.

In 1924, at the age of sixty-three, Whitehead received an invitation to join the Faculty of Harvard University in the Philosophy Department. He found these years at Harvard to be very stimulating, retiring in the spring of 1937. A tradition of the Whiteheads at Harvard was to have an open house each Sunday evening, where interested students could question and listen to Whitehead speak on various topics. Lucien Price, an editorial writer on the *Boston Globe*, attended these Sunday evening sessions. Price had trained his mind to function almost as a recorder. He would listen to Whitehead speaks for hours. Upon returning to his lodging, he would write out word for word what Whitehead had said. After some years had passed, Price invited Whitehead to make any corrections needed in his record of these Sunday evening sessions, which were published in 1956 as *Dialogues of Alfred North Whitehead* as Recorded by Lucien Price.

WHITEHEAD IN HISTORICAL CONTEXT

BY CHARLES HARTSHORNE

THE BASIC CATEGORIES

What Whitehead called speculative philosophy, the central or noncontingent core of which he sometimes called metaphysics, is a difficult enterprise; and at most only a few crucially important individuals occur in it in a century. Plato and Leibniz were outstanding examples in the past, and in the hundred years ending in 1970 I personally take the most important to have been Peirce, Bergson, and Whitehead. Whitehead was deeply influenced by Plato and to some extent by Leibniz and Bergson but came to know about Peirce as philosopher too late to be influenced directly by him. Like Whitehead, Peirce, and Leibniz, Plato took mathematics to be an important aid in philosophizing. Plato's Academy was supposed to be open only to those who had studied geometry. Whitehead wrote the article on geometry for the great Eleventh Edition of the *Britannica.* Leibniz, Peirce, and Whitehead, as few others in the history of philosophy, combined intensive work and competence in mathematics, formal logic, physics, and speculative philosophy. They were well acquainted with the history of science and philosophy, as well as with the intellectual situation in their own time.

Bergson was not a mathematician or formal logician, though he did a year's work in mathematics at the Ecole Normale Superieure and won a prize in that subject. His theory of intuition rationalized his lack of high competence in rigorous reasoning. Whitehead thought, as many others have, that this lack somewhat limited Bergson's achievement. In any case Whitehead took Bergson's view into account, and one can claim that he assimilated much of what was best in them.

There are philosophers important *for* speculative philosophy who are not important *in* speculative philosophy. These are the critics of speculative systems who scarcely have a system of their own, the skeptics or agnostics who point to weaknesses in systems and, in this way, enable the system-makers to do a better job. Among these relatively nonspeculative thinkers, Hume, Kant, Russell, William James, and Wittgenstein have been important. Except apparently for Wittgenstein, Whitehead certainly considered these thinkers with some care.

The line between system-makers and critics is not sharp. Of the writers just listed, at least four—Hume, Kant, Russell, and James—took some steps into metaphysics. But Hume's metaphysical doctrine is an extreme

pluralism summed up by the words, "What is distinguishable is separable," where "separable" means that either of two distinguished items might conceivably exist or occur without the other. Thus, if we distinguish two events, *a* and *b*, occurring in that order, then *a* might conceivably have occurred though *b* did not follow, and *b* might have occurred though *a* had not preceded it. This doctrine of mutual independence makes causal dependence of events on previous conditions a mystery. (Russell repeats Hume in this respect and his philosophy, apart from niceties in formal logic, adds little to the Humean paradox.) Hume also takes a metaphysical position in defending causal determinism. This not only does not follow from his pluralism but seems incongruous with it. True, Hume thought that empirical science had established determinism. However, as Kant rightly argued, no such concept as absolute and universal causal order could be justified by mere observation.

Whitehead, like Peirce, seems to have begun his philosophizing as a student of Kant but doubtless saw that Kant's ideas of science, mathematics, and logic were partly antiquated by intellectual progress after Kant's time. Kant was not himself a mathematician or formal logician, though he did make some contributions to natural science. Kant's agnosticism, his rejection of much of what had been metaphysics, was combined not only with an acceptance of determinism but also with a concept that Hume tried to show was fallacious, that of "substance"—meaning the idea of a thing which changes through time and yet remains in an absolute sense the "same" reality. Kant did not exactly accept Hume's pluralism; but he avoided it only by attributing causal dependence and order, also substantiality, not to the things given in our experience but to our human way of experiencing them. So the order we know is to be taken not as that of things as they are apart from us, but only as the order of our experiences themselves. We know ordered appearances not ordered realities. And we have no theoretical evidence of the existence of God or human freedom, even though for ethical reasons we need to believe in them.

Whitehead accepts from Hume his critique of substance (or of absolute genetic identity) and on this point disagrees somewhat with Kant. But he agrees with Kant that absolute pluralism is a mistaken doctrine, not, however, because our minds force the given into some causal order but because causal dependence is in the things we experience, quite apart from our experiencing them. Moreover, he holds (and there may be an influence of James here) that Hume and Kant are both wrong in absolutizing causal order in the deterministic fashion. All events have necessary conditions in previous events, but they do not have strictly "sufficient" conditions if that means conditions strictly determining what then happens. For Whitehead,

as for Bergson and James (also Peirce, but Whitehead did not know about his views until his own were fully formed), there is always at least a bit of freedom or uncertainty in what a given situation will produce as its effect. The past is settled and present action must "conform" to it; but always there is more than one possible way of achieving this conformation. On the higher levels we call this indeterminacy freedom. Peirce's word of it was "spontaneity," Bergson's and Whitehead's was "creativity," Berdyaev, exiled Russian thinker, had a similar view and used the same word (but also "freedom"). Dewey too believed that indeterminacy was found in nature apart from humanity.

On one issue Whitehead agrees with all the great metaphysicians mentioned in the first paragraph of this essay. Plato, Leibniz, Peirce, Bergson, all believed that the explanation of matter was to be sought in mind, not that of mind in matter. Of the four, Plato was least clear on this point, but he did hold that mind (or "soul") was "self-moved" and the source of all motion or change. For Leibniz what we call matter is merely mind in low-grade forms and in various kinds, individual instances of each kind (atoms, cells, etc.) occurring in large numbers. These instances are insignificant taken one by one and are therefore perceived by us only in masses, like a swarm of bees seen at a distance. Peirce followed Leibniz in this analysis and so did Bergson. Whitehead is in this tradition, which he developed and clarified. He regarded the notion of mere matter, dead and without feeling or thought, as an empty abstraction, and one the usefulness of which in science had been steadily diminishing in recent decades. On this issue three great mathematician-logician-philosophers agree. There is also some agreement on this topic between the three Western philosophers and the Buddhist tradition in Asia. A Buddhist slogan was "mind only."

On the question of substance, or absolute identity through change, Peirce is somewhat unclear, and so, I find, is Bergson, while Leibniz was the extremest defender of strict substantial identity. Whitehead, Hume, and the Buddhists agree that, strictly speaking, a so-called substance is a new concrete reality each moment; but it is Whitehead who, in my judgment, does the best job of retaining aspects of truth in our commonsense notions of individual things and persons. One can read into Plato a view somewhat like Whitehead's, and Bochenski has even hinted (in conversation) that the gulf between Whitehead and Aristotle on this point could easily be exaggerated. The point of 's rejection of substance in the usual meaning is not that there is no identity through change. There is identity, but it is partial or qualified, not absolute or total.

There is an asymmetry about genetic identify. An adult possesses or carries its childhood with it in a sense in which a child does not carry or

possess its adulthood. Identify in its absolute meaning has no such asymmetry. If X simply *is* Y, then in the same sense Y is X. The rings of a tree enable us to inspect the tree's past, but nothing similarly discloses its future. Memory is the psychical analogue of the tree rings. Remembering is experiencing our past selves. Each of us carries throughout like a mass of mostly unconscious memories, and after early childhood this mass begins to form the central core of our sense of identity. No one else has the same memory mass, and the longer we live the less, proportionately, does each new momentary experience add to the total. It is also true that, even with identical twins, no one else has exactly the same bodily structure, changes in which are mostly small and gradual, especially after early adulthood. Each of us is also the focus of various obligations and expectations coming to us from others, linked to our names or our appearances, and this, too, tells us "who" we are.

People who talk about their "search for identity" or their puzzle about their identity, are expressing in one way the truth that self-identity is not an absolute, simple affair, but a qualified, relative, partial, subtle, and complex one. The relativity is also expressed in other ways. We say we "identify ourselves" with our children or our spouses. We say that someone was "not himself" or herself. We speak of being "born anew." Then there are multiple personalities. And where in deep sleep, is one's conscious self?

Why is it that we can scarcely recall our infancy as ours? Show a person a picture of an infant boy or an infant girl. Will the person recall having been that boy or girl even if this was in fact the case? The infant had not yet acquired a memory mass sufficiently comparable, in quality and quantity, to the adult one to be recognizable. If "I" means an individual conscious of self, then the infant scarcely had an "I" to be remembered. Is the adult still that infant? There is an enormous difference, like to or greater than the difference, at least in intelligence, between a cow, say, and a normal human adult. It does not make sense to conceive the infant reality as identically the self that now has adult intelligence. For this is to try to conceive the less as containing the more. To say that the adult self simply is the infant self is to insult the former.

We can escape from these paradoxes if we admit, with the Buddhists and Whitehead, that concrete actualities are not in last analysis enduring, changing substances but successive momentary stages of what are called substances or individuals and if we assign to these successive states or actualities certain relations, neither simply of partial similarity to their predecessors, nor of sheer identity, but of *partial, asymmetrical* identity with them. I am now the one recalling a childhood, youth, early adulthood,

and middle age not recalled, with anything like the same directness, vividness, or completeness, by any other present actuality (other than God). To remember certain past experiences is to be partly constituted by them. So far as remembered they are elements in oneself still. It is quite false to suppose that a Whiteheadian must, in rejecting, sheer identity, be asserting total non-identify. Far from it. The past selves are still in the present self. But the present self was not in those past selves. This is asymmetry.

If individual self-identity is not absolute, neither is the *non*-identity of the selves of more than one individual. The past selves that have entered into one's present self are not alone those that one recalls as one's own. Every past self that we once experienced enters in also. Nonidentify among individuals is thus as relative as the identity of each. This is precisely why both Buddhism and Whitehead (and those who follow him in this) see great moral and spiritual significance in the non-substance doctrine. It cuts the self-interest account of motivation at its root. There is no absolute enduring self and (at least among neighbors or acquaintances) no absolute non-self either. Almost the entire Western theory of motivation is biased or ambiguous here. "I love myself because I am myself" has been the principle; if I love you who are not I, that is a puzzling, metaphysically ungrounded addition. As the Buddhists all saw, there is no *absolute* truth in "I am myself" and equally none in "I am not you." Only relatively am I the identical self through change and relatively am I not my friends and enemies. Any other doctrine is an extreme form of pluralism between individuals and an extreme form of monism between successive states of one individual. What this double extremism really means if taken strictly is exactly the lesson of Leibniz's monadology. He actually tried to believe consistently and wholeheartedly what most individualists only half or confusedly believe. And the view is not credible when put so sharply and unambiguously (or nearly so—for the idea defies complete clarity and consistency).

Consider our relation to the future, our own and that of others. No one who observes people can pretend that in fact they always seek anything like their own long-run advantage. If this were the case only utter stupidity could explain how frequently and obviously they act contrary to their own long run advantage. People are not that stupid! Love of our long run good is not automatic, guaranteed by metaphysical identity, any more than is indifference to the good of others. The truth is much more complex and qualified. There is plenty of selfishness, tragically much, partly encourage no doubt by metaphysical doctrines exaggerating identity and nonidentity! But there is also a good deal of concern for the future of others. And there

is plenty of activity motivated neither by self-love nor love of others, in any reasonable sense, but by momentary or short-run feelings of weariness, boredom, desire, hostility, or fear. The subtlety and complexity of the matter fit's the Whiteheadian account better than any usual substance theory. What human beings need is not merely to achieve "enlightened self-interest," but to understand that the only reality worthy of our ultimate devotion is neither the one that uniquely goes with or possesses their own body nor the ones that go with the other human bodies but a Reality beyond or inclusive of all of us, something that is immortal whereas we are mortal, and that possesses our past, not in the meager fashion in which our memories, records, and monuments preserve it for us, but fully and entirely. Of this Reality also, as we shall see, Whitehead gives a helpful account.

We must now come closer to certain technicalities of Whitehead's system. These are called "actual entity," "prehension," and "creativity."

An actual entity is a momentary state or single instance of process or becoming. It is unchangeable, for change, in this scheme, is the succession of actual entities, each of which "becomes but does not change." It is a single creation. First it is not, then it is. Creativity refers to becoming, which brings actualities into being rather than changes actualities already there. Becoming is *addition*, not subtraction, and change is not its final analysis. Here Whitehead departs from Bergson (also from Peirce), who makes change the essence of becoming, while also saying it is creative.

The example of a single actual entity that we come closest to experiencing distinctly is a single human experience, such as comes to be in a small fraction of a second. We know this example most directly in immediate, short-run memory, which is what "introspection" or self-awareness is in this philosophy. Even this primary example is not quite distinctly experienced. Whitehead, like Leibniz, Peirce, and Freud, holds that our introspective power is limited. We experience, feel, sense, intuit, but have only relatively distinct awareness of what, or how, we experience, feel, or intuit.

Actual entities other than our own momentary experiences must be conceived by us as analogous to our experiences. The analogy becomes less and less close as we pass from ourselves to other human beings, then to experiences of non-human higher animals, then lower animals, then single cells, animal or vegetable, then molecules, atoms, particles. It is Whitehead's doctrine that, however remote the analogy, it never totally lapses, so long as we make the distinction between single actualities (or individual sequences of them) and collectives, associations, or crowds, of such single entities. Whitehead's "A tree is a democracy" is his

metaphorical way of saying that a cell in the tree is the individual that is to be understood by analogy with a human individual, not the whole tree, which is a colony of cells and sub cells. Botany seems to support this distinction. The point is that the tree, lacking a nervous system, lacks the unity of action and feeling which many-celled animals have. Aristotle said, wiser even than he knew, that a plant is "like a sleeping man who never wakes up." (He should have said, "Like a person in dreamless sleep.") In such a state the person is not acting or experiencing as one; it is the various cells which are doing whatever is done.

Peirce and Bergson view experiencing as continuous change. In a continuum no definite single parts can be found; for a point or instant is only a conceptual ideal of an infinitely short stretch of the continuum. It belongs to mathematics, not physics or psychology. To have definite single actualities which are the products or instances of creativity, one must hold, with the Buddhists and Whitehead, that becoming is not strictly continuous, though to our fallible, somewhat vague introspection it appears continuous.

The actual entities are the real subjects that experience, perceive, remember, and think. My childhood self did not, and could not now, think my philosophical thoughts. Each new experience means a new actual subject not there before. Elements in it, my childhood selves included, were there before, but not it.

Now that we know what a single actual subject is, we may ask what it is for a subject to experience. The basic form of experience is perception. Whitehead is perhaps the first philosopher to interpret perception throughout as, no less than memory, experience of the past rather than of the present. By the time we see or hear an event in the environment it has already happened. Whitehead generalizes this retrospective structure of perception so that even when we sense or feel happenings in our bodies our feeling comes after the happenings, not simultaneously with them. Events cannot be experienced until they have already happened. An event is an instance of becoming, and until it has effected its becoming there is no definite entity to be experienced. As already remarked, even introspection, inspection of our own experiences, is short-run memory, is retrospective. Thus all awareness of concrete reality is of the past. The awareness itself occurs now, but not that of which it is aware. In temporal structure perception is like memory. I call perception "impersonal memory," awareness of past events other than our own past experiences. Ordinary memory is personal.

Memory and perception, then, are alike in being *intuition of previous actualities.* Whitehead calls such intuition "physical prehension." "Mental

prehension" is the other kind of intuition, and it is the function of thinking, interpreting the physically prehended, and forming an idea of the future and of contemporary actualities. Since only past actualities are now given, the future and the contemporaries must be known from the past. Our past overlaps with that of our contemporaries; to this extent, and so far as there is causal order, we may be able to know what is going on now around us and is likely to occur in the future.

Whitehead's interpretation of mental prehensions, of thinking, is rather too Platonic for my taste. He talks of "eternal objects," which seem a fairly extreme form of Platonic "ideas." I think one can do with a less realistic theory of universals. Whitehead follows the ancient Neo-Platonist (and, I believe, by implication Plato himself) in holding that the eternal objects or forms are divine ideas, nothing simply by themselves. Our physical (or "hybrid") prehension (almost entirely nonconscious on our part) of God as having these ideas is the key to our acquiring them, but which ideas are eternal in God and which are divinely or humanly acquired as the creative process goes on is a question deserving more careful inquiry than Whitehead ever gives it. He never faces nominalistic arguments (explaining universals by similarities rather than vice versa). I find more cogency in these arguments than Whitehead did.

Creativity Whitehead calls the "category of the ultimate." The other categories are only aspects of what is implied by this one. In each instance of creativity "the many become one, and are increased by one." The act of "becoming one" is termed a "creative synthesis." This synthesis is the ultimate emergence. The "many" going into the synthesis are the previous actualities, the actor or agent is the new "one," the new actuality. This creation is thus self-creation; for an actuality comes to be as a free act. (Language tends to mislead here, as though actor were one thing and act simply another.) The many become one in the sense of being prehended by a single new partly self-determined actuality. The oneness is synthetic but is just as genuine as that of any previous actuality, which was itself such a synthesis, though not of entirely the same "many." The key to creative synthesis is prehension. An actual entity comes to be a single though complex act of prehending its predecessors, most of them with negligible distinctness. (Indistinctness is a pervasive feature of all prehending save that of God.)

WHITEHEAD'S PHILOSOPHICAL THEOLOGY

If all prehension whatsoever were indistinct, it would be problematic what could be meant by "indistinct," since there would, it seems, be no standard of distinctness. This is indeed one of Whitehead's reasons for introducing God into his system. He had a predecessor at this point, for Spinoza said that "unclear" ideas in us are unclear in comparison with the divine ideas, which are wholly clear. "The truth itself" wrote Whitehead, "is only the way all things are together in the consequent nature of God." The consequent nature is God as prehending the world, rather than simply contemplating his own eternal reality. Physical prehension, being an inherent aspect of creativity, cannot be lacking even in God, for creativity is ultimate. As all creativity is self-creative, though influenced by other previous cases of creativity, God, too, is self-creative, and the divine acts of self-creation are prehending or emergent syntheses of all that has already occurred in the world or in God. It follows that God is not in every respect immutable or independent; rather the divine reality perpetually enriches itself by prehending new actualities in the world.

To give Whitehead's thought about God its historical setting is a special problem. He knew fairly well what the Church Fathers had had to say on the subject; he was also acquainted with Plato's and Aristotle's ideas of deity, and the view of Descartes, Spinoza, Leibniz, Hume, and Bradley. He had some knowledge of Hindu, Buddhist, and Chinese religious thought. As a son of a Church of England clergyman (and brother of a bishop) he doubtless knew what "God" usually meant to churchgoers and was familiar with the Scriptures. He had done some reading in the anthropology of religion. Beyond this it is hard to know what close philosophical precedents for his thinking he was aware of. And there were such precedents, most of which, I would guess, he knew little or nothing of. Thus he was to a considerable extent on his own in working out an alternative to the standard metaphysical concept of deity as it had prevailed for almost 18 centuries, to some extent since Aristotle.

In addition Whitehead, as he once told me, thought that the full elaboration of a philosophical theology was not his primary task, which was to overcome in principle the divorce between natural science (with its bias toward materialism and abstraction from values, including religious values) and the ideals of civilized humanity. He thought that the full

working out of the theological aspect could be left to others. (I think he was at that time aware that I was one of the others engaged in that very task.) So we find that apart from an obscure and clearly provisional chapter in *Science and the Modern World,* some cryptic remarks here and there in *Process and Reality* (and a few even more cryptic ones in *Religion in the Making, Adventures of Ideas, Modes of Thought,* and the much earlier *Function of Reason)*, Whitehead's account of his theology consists only of the not very long though superb final chapter of *Process and Reality*, with its sublime poetry and *partial* technical clarity. In my opinion (and—oddly enough—that of an able young philosopher I know who, when I last was in touch with him, was an agnostic in religion) this essay is the greatest that has been written on the philosophical idea of God " since Plato's *Timaeus*." And I have heard Whitehead quoted as having said that it was the most important thing he had written. But to fully appreciate it one may need to know more of the historical background that appears in Whitehead's writing and perhaps more than was in his mind.

Classical theism, in outline well known to Whitehead, was in important respects an amazingly definite and persistent element in Western metaphysics. It identified the God of religion with what philosophers sometimes call "the absolute," meaning by "absolute" totally *independent* of all else, entirely *without change,* and a *sum of all possible perfections*—the actuality without remainder, of all possible real value. God was the world's "unmoved mover" (Aristotle), First Cause, or Creator, in no way influenced by the creatures' existence. Aristotle deduced from the divine exchangeability and independence the conclusion that God does not know or love the individuals in the world. Rather they know and love God. The key to medieval theology, which was for so long an unchallenged standard, remarkably similar in Judaism, Christianity, and Islam, is the attempt to retain Aristotle's denial that God is influenced or in any way changed by what occurs in the world, while rejecting the Aristotelian deduction that this means God does not know worldly occurrences. Rather God knows and indeed loves creatures, though without being moved by them. In ordinary language to be "moved" by the joy or sorrow of another creature is to sympathize with that creature, to love it, but for medieval theology there is no theological analogy for this. And Aquinas says that relations between God and the creatures are "relations for the creatures, but not for God."

What the love of God for creatures can be in God if not a relation is, some of us think we see clearly, entirely beyond intelligible account. And Aquinas admits, in agreement with Aristotle, that in all other cases, S knows Y implies S is influenced by Y. Only in application to God does he