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Throughout history, man has struggled to develop an accurate concept of God. Believing that the structure and composition of the physical universe conveys some truth about God's attributes, man has tended to forsake divine revelation and modify his theology with each newly discovered empirical fact. Mankind perpetually contends that "...these bodies of [scientific] knowledge explain, predict, or in other ways support and systematize true statements about the world."¹ This phenomenon is clearly evident in contemporary western culture as most disciplines are judged by their consistency with knowledge acquired through empirical science. Theology is no exception to this general trend.

For many years, the collection of empirical facts and theories known as physics has formed our concepts regarding physical spacetime relationships and thus, as argued by several theologians, our concepts of God. From the mid-seventeenth century to the early twentieth century, the theories of Sir Isaac Newton provided a scientific basis for concepts of God which are often categorized as

tenets of classical theism. However, with the discoveries
of Albert Einstein, and his subsequent development of the
theories of relativity, a novel framework for understanding
the universe has been developed. This added empirical
knowledge of spacetime relationships has led some
theologians to abandon the principles of classical theism
in pursuit of new theological concepts.

Because, as many may contend, we can only know God
through the structural relationships of the observable
universe, many believe a reassessment of theological
beliefs in light of recent developments in relativity
physics is mandated to maintain proper consistency with
empirical evidence. Accepting the challenge, the
British philosopher and mathematician, Alfred North
Whitehead has sought to render a metaphysic which is
contemporary with current scientific thought. Whitehead
writes:

You cannot shelter theology from science, or
science from theology: nor can you shelter
either of them from metaphysics or metaphysics
from either of them.2

Such an interrelationship has a profound impact on his
resulting theology. Adopting the metaphysics and
theological thoughts of Whitehead and Charles Hartshorne,
theologians including John Cobb, Lewis Ford, and David
Griffin have attempted to reformulate a concept of God they

2Alfred North Whitehead, "Religion In the Making," in
Alfred North Whitehead, An Anthology, ed. F.S.C Northrop and
believe maintains better consistency with Einstein's theories of relativity physics.

Assuming Einstein's theories of relativity are correct, as most empirical evidence to date shows them to be, the issue is whether this latest theological development, known as process theism, is consistent with the relativity physics of Einstein. The question is: Does process theology, as presently espoused, square with the universe of relativity physics? This is the question which deserves consideration. However, before looking into the particulars of this theology, the scientific foundation and impetus for such a system must be considered. First, it is necessary to examine the theories of Einstein.

The Relative Universe

Albert Einstein first published his special theory of relativity in 1905 and his general theory in 1916.3 The crux of his theories rest upon new insights into the concept of observation at a "point of reference." Einstein properly recognized that the observer of an event is only stationary in his own reference frame. From the perspective of the object being observed, however, the observer is actually in motion.4


Suppose you are on a bridge overlooking a brook. If you focus your attention on the flowing water and ignore the river banks, which provide a reference frame, it may appear that the bridge is moving and the brook is stationary. The realization that motion and observation is relative with respect to the observer led Einstein to develop his theories of relative spacetime relationships.

To better conceptualize a relative reference frame, it may be beneficial to consider oneself an observer separate from that which generally provides the illusion of a stationary point of reference. Imagine being an observer away from the earth at some point in deep space.

\[ \begin{align*}
B & \quad \rightarrow \quad A \\
\text{30 miles/sec} & \quad \text{0 miles/sec.} \\
\text{130 miles/sec.} & \quad \text{100 miles/sec.}
\end{align*} \]

Figure A

You, reference point A, believe you are moving at a velocity of 100 miles/sec. and are being overtaken by an object, reference point B, that you consider to be moving at 130 miles/sec. You conclude this because B is closing in distance and B is your only point of reference.

However, the observer at point B concludes himself to be moving at only 30 miles/sec. and point A to be stationary. Which observer is correct with regard to velocity measurement? According to Einsteinian physics, you both are correct because measurement of velocities is
relative with respect to the reference point of the observer. Applying this concept to our understanding of the universe, we must realize that we move about the earth, which moves about its axis, which moves about the sun, which moves about the galaxy, which, in turn, moves about the universe. In short, all potential points of observation are in motion. Therefore, all measurement is relative with respect to all points of reference.

To further expand the concept of relativity and the flow of time, consider another example.

If a star in the Orion constellation (point x) were to turn super nova at t₁ it would take 300 light years for the event to be witnessed on Earth (point z) at t₃. However, an observer orbiting the star Aldebaran would witness the event 50 years earlier at t₂ for it (point y) is only 250 light years from Orion (point x). What one would observe here on Earth would be an actual event for us in our "present" at t₃, but what one would also be observing is the "history" of the star Orion for the event was in Orion's "present" at t₁. If an observer orbiting the star Aldebaran were to simultaneously relay a message to Earth at the time the super nova was observed in Aldebaran's "present," those
on Earth will have already experienced the event by the time we receive the transmission from Aldebaran. Therefore, that which was transmitted as occurring in Aldebaran's present will be recorded as happening in Earth's past, although Aldebaran experienced the event first.

It is clear that even the apprehension of an event cannot occur simultaneously at all points of reference in the universe. Time, thus, becomes a fourth dimension in physics establishing the concept of a spacetime continuum. With this added dimension to consider, we must now think of events not just occurring in space but as transpiring at a specific point in spacetime.

Relative time flow and the concept of multiple presents are central to Einstein's theories. The particular aspects of the relativity theory will be subsequently explored, and their difficulties for the God of process theism will be considered in depth.

Systems Compared

For several centuries, the principles of Newton dominated our understanding of the physical universe. The concepts, confirmed by repeated experiment, so closely approximated relationships that actually exist in nature that their espousal continued well into the twentieth 

century. The process thinker, John Cobb, accurately sets forth the current state of Newton's principles when he says:

In the field of science the fundamental principles now applied are remote from the fundamental principles of the Newtonian scheme. Nevertheless, the Newtonian scheme is recognized as having a large measure of applicability. As long as we focus attention on bodies of some magnitude and upon motion of moderate velocity, the laws of science developed by Newton hold true.⁶

Therefore, when vast distances and extreme velocities are considered, or the subatomic relationships of the atom are contemplated, the shortcomings of the Newtonian system become evident.

Isaac Newton offered a scheme that was predictable where space was "absolute" and time was "uniform" throughout the entire universe. Objects were defined by their position in absolute space and not by their relationship to one another. This concept of absolute space was not an entity which had parts nor a super body but rather something 'in' which bodies moved. The concept of absolute space forms the foundation of Newton's laws for it is this concept on which his laws depend. For example, Newton's first law states that, "Every body continues in a state of rest or uniform motion in a straight line unless it is compelled by force to change that state."⁷ If Newton's first law is correct, any body not acted upon maintains its velocity. The second law


says that, "If a body of mass M is subject simultaneously to various forces \( f_1 + f_2 + \ldots \), and if \( A \) is the acceleration of the body then, \( F = MA \) where \( F \) is the net force or the vector sum of the individual forces \( F = f_1 + f_2 + f_3 + \ldots \).\) If there is more than one body in existence they will have an effect upon the velocity of the other. Therefore, we must be able to logically conceive of a universe where there is a single physical object in order for the first law to hold true. However, motion of a solitary object under the first law would be meaningless unless it is compared with something else. That "something" is not another physical object but rather space itself. Therefore, space must be the absolute in the Newtonian system for absolute space is that which provides an absolute reference frame for objects in motion.\)

Because of Newton's concept of absolute space and corresponding time, he offered a system where events could occur simultaneously throughout the universe. However, Einstein adopted a relative reference frame where motion is meaningful only when related to other physical objects.\) This relative reference frame offered the mind of man a universe in constant flux where there is no unified field

\[8\text{Ibid.}, \text{ p. 97.}\]

\[9\text{Newton, "The Mathematical Principles of Natural Philosophy and the Systems of the World," The Changeless Order, pp. 64-65.}\]

of space and time. Events in the relative universe cannot be simultaneous, only highly contemporaneous.\textsuperscript{11}

Newton's concept of an absolute space and time had many theological and philosophical ramifications. One of the reasons Newton held to a concept of an absolute present, space, and matter was because he implicitly postulated God as the central Cosmic Observer of all natural events.\textsuperscript{12} There had to be a uniform present for God to be aware of all that was transpiring in his universe. Therefore, the possibility of multiple time frames could never be seriously considered. There had to be one simultaneous present for God to be cognizant of, and respond to, all that happens as it happens.

It is said that the resulting cosmology of the seventeenth century was a combination of theology, philosophy and Newtonian physics.\textsuperscript{13} Given the classical theological concepts upon which Newton built his scientific system, space, time, mass and force were assumed to have been "ready made." Newton is accused of considering God to be a being entirely transcendent who made the universe a complete and finished product.\textsuperscript{14} Whitehead finds this concept of a static, complete universe to be at odds with

\textsuperscript{11}Ibid., p. 156.


\textsuperscript{14}Ibid., p. 32.
the flux, change and evolution he believes to be evident in Einstein's relative universe. Newton's notion of a complete universe left no room for the evolution of matter. The concept of a static universe left Whitehead with two unacceptable choices regarding the origin and nature of the cosmos: Either it is eternal and unchanging or it came into being according to the will of Jehovah. To Whitehead, both concepts are fallacious in light of development in contemporary science. ¹⁵

Newton offered a world of tangible matter, forces, and accelerations where velocities are measured with respect to absolute space. Einstein again shook the Newtonian system by rendering a universe where acceleration, velocity and time are relative with respect to the reference point of the observer, where matter varies in size and mass in proportion to energy and velocity, and where the speed of light is the only absolute. Einstein expresses his unique concept of matter when he says:

Mass and energy are therefore essentially alike; they are only different expressions of the same thing. The mass of a body is not a constant; it varies with the change in its energy. ¹⁶

Unlike Newton, Einstein offered a concept of reality in which matter's essence was no longer immutable but could be transformed into pure energy and pure energy has the potential to become matter.

¹⁵Ibid.

Whitehead contends that such a universe is not eternally static but held in the grip of a self-creative process. Because of Newton's views, he made no provision for the evolution of matter and many of the concepts of relativity physics that should have occurred to him naturally remained unthinkable. The process author, Laurence Wilmot writes:

It is one of the fundamental aims of Whitehead's philosophical venture to replace this static conception with a dynamic interpretation portraying the universe as a continuous process of self creative activity in which each actual entity exercises a measure of choice and in turn makes its own contribution to the totality which is the universe.

According to process thinkers, the concept of Newton's static universe developed out of theological dogma. The resulting scientific concepts were no less dogmatic and persisted for more than two centuries. This dogmatism prohibited further scientific speculation and advancement. Wilmot explains the theology which fostered the static Newtonian science when he says:

Newton's . . . doctrine . . . proceeds from and in turn fosters the typical deistic concept of God as transcendent creator; having introduced God to impose movement and order upon the world, Newton could find nothing further for him to do except to keep the universe on its orderly path of movement.

He also contends that:

17Wilmot, Whitehead and God, p. 32.
18Ibid.
19Wilmot, Whitehead and God, p. 95.
On this view, no explanation can be found from examination of the nature of things as to why they believe in God the way they do. Any interrelationship which they exhibit is simply a pattern imposed upon them from without.20 Thus, according to Wilmot's analysis of the theological implications of the Newtonian system, the God of classical theism can serve no other role outside of creator.

It is Whitehead's contention that because the Newtonian system is not acceptable, the corresponding theology and cosmology is also unacceptable. Whitehead has, therefore, shifted his theology and cosmology to a position that is similar to that of Plato.21 This shift back to Platonic concepts is not an adoption of Plato's scientific concepts but rather a belief that his theology and cosmology is more consistent with Einstein's physics. Plato presents a universe in a constant state of flux—a state of perpetual becoming. This universe is "moved" by less-than-infinite beings thus allowing for individual freedom.22 With modifications, both of these concepts are attractive to contemporary process thinkers.

The God of Plato is similar to that postulated by Whitehead for Plato's God is more of a divine artificer than a divine coercer. This God is not an omnipotent, omniscient creator, but, like a human craftsman, works with the

20Ibid.

21Ibid., p. 31.

22Charles Hartshorne, Whitehead's Philosophy (Lincoln University of Nebraska Press, 1972), p. 72.
materials at hand. Unlike Newton's God, the God of relativity physics does not create the materials out of which everything is made but rather works with those materials already existing to bring order out of chaos.23

With the postulation of Einstein's theories, many believed God could no longer have the attributes as implicitly held under the Newtonian system. No longer could God be thought of as presiding over a universal, absolute, present. God must now account for a universe in constant flux with no unified field of time through which he can coordinate the perpetual activity of all reality. Therefore, many theologians have set out to re-think God in light of the current developments in relativity physics. Philosophical theologian, Alfred North Whitehead, along with subsequent theological thinkers, devised a metaphysical and theological system that claimed to have reestablished consistency between theology and contemporary science. It is to that metaphysical system we now direct our attention.

23Ibid., p. 82.
Chapter Two

THE PROCESS SYSTEM

After the publication of Einstein's theories of relativity, many thinkers began to see their ramifications in the fields of philosophy and theology. Several believed that the concepts of Einstein offered solutions to the perceived philosophical inconsistencies inherent in the Newtonian system. One such thinker was Alfred North Whitehead.

Whitehead recognized that there was an unresolved duality between that which is material and that which is immaterial running through the history of philosophy. From Plato to Aristotle to Hume to the scientific principles of Newton, this irreconcilable duality persisted. James Sire states this problem well when he says:

. . . once we have recognized that something is there, we have not necessarily recognized what that something is. . . . Some people assume that the only basic substance that exists is matter. For them, everything is ultimately one thing. Others agree that everything is ultimately one thing, but they assume that that one thing is some. . . . non-material substance.¹

Whitehead asks how that which is matter can relate with that which is non-matter, and yet if there is no relationship it would be to admit the existence of the one while denying the existence of the other. Although Whitehead recognizes the spheres of the mental and

physical, he ultimately claims that there is a relational unity between the two concepts. Whitehead's ontology allows both realms to be real and part of the same reality.

The Process Principle of Being

Central to the process metaphysic is Whitehead's concept of ontology or "being." The final problem of philosophy, says Whitehead, is to conceive a "complete fact." In other words, the philosophical quest lies in finding the nature of the "that" which is a "complete existent": The nature of the "fully existing" entity.

Plato, and others who follow his teachings, believed that that which we perceive as a "fully existing entity" is actually a shadow of that which actually exists in another realm. While Whitehead may concur with some of Plato's theistic concepts, Plato's illusion of actuality is totally unacceptable to Whitehead's concept of reality.

Aristotle, countering the position of the Platonist, says that, "Apart from things which are actual, there is nothing in fact or efficacy." Whitehead is in agreement with Aristotle's concept of "being" for things that are actual are the "that" which exists in the fullest sense of existence. For Whitehead, that which exists is only that

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3Ibid., p. 21.

4Ibid., p. 23.
which is really actualized from a multiplicity of possibilities.

The fundamental component of that which exists at any given time is an "actual occasion (AO)." Although actual occasions will be subsequently discussed in greater detail, it is necessary to understand that actual occasions constitute all that is actual at a given point in spacetime along Einstein's continuum. Actual occasions are the most fundamental elements upon which all reality exists and all else is derivative. It is that which is actually existing which is the primary concern to metaphysics, for it is the actual occasion which exists in the fullest sense. The ontological principle thus affirms that some things are actual, and that those entities which are actual form the ground from which all other entities are derived. The reasons for which metaphysics seeks are to be found in actual occasions, for it is the nature of the actual occasion that provides the answers.

Each actual occasion is composed of "actual entities (AE)." The term "actual" denotes existence in reality, and "entity" refers to a person, thing, or idea. Ivor Leclerc, a respected commentator on process thought, states that:

It is of the utmost importance to be clear about the full meaning and implications of

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7Ibid, p. 24.
[Whitehead's] ontological principle. . . . First, some entities are actual, i.e. fully existent entities—or that at least one entity is actual; and, second, all actual entities form the ground from which all other types of existence are derivative and abstracted.  

That is to say since all actual entities are all that, in a strict sense, "exist" or "are", all other entities exist only in a sense derivative (i.e. pure possibilities) from the existence of that which is actual. Thus according to the ontological principle, "the world is built up of actual [entities]", and whatever other things there are are derived by abstraction from actual entities. According to Leclerc, then, everything that "is" is an actual occasion. The rest of reality, says Whitehead, is "silence."

By adopting an ontological principle similar to that of the Aristotelian school, Whitehead returns to the position which characterized philosophy before the introduction of Descartes' "subjective basis" for reality. Descartes' proposition: "I think; therefore I am," is what Whitehead considered to be the foundation for the subjective interpretation of reality. According to Whitehead, all an individual actual entity can be sure of under the Cartesian system is his own subjective experience. This trend toward subjectivism is the point at which Whitehead claims that modern philosophy errs. The

8Ibid.  
9Ibid.  
10Ibid.
problem lies in one's inability to "proceed from our knowledge of subjective experiencing to external existence." However, according to Whitehead's ontological principle, this would be impossible. Our impressions of sensation cannot be produced by the creative powers of the mind, for they must be derived from real actual entities.

If the process ontological principle is correct, then there is "something" out there to be known. Whitehead expresses the concept that the "that" which can be known must be actual when he says:

According to the ontological principle there is nothing that floats into the world from nowhere; it is a contradiction in terms to assume that some explanatory fact can float into the actual world from non-entity. Non-entity is nothingness. Every explanatory fact refers to the decision and to the efficacy of an actual thing.

Leclerc goes on to add that:

Our perceptions and concepts, our senses and ideas, must in any complete analysis be derived from actualities, they cannot be subjectively generated. If we know anything at all it is of the actually existing universe.

For Whitehead, efforts to discover and understand the

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12Ibid.
13Ibid.
14Ibid., pp. 26-27.
"final reasons" for things in Einstein's relative universe must begin with the examination of actual occasions. Although he respected the accomplishments of Newton, Whitehead said:

[Although] Newton's methodology for physics was an overwhelming success...the forces which he introduced left nature without meaning or value...[for] he left all the factors of the system—more particularly mass and stress—in the position of detached facts devoid of any reason for their compresence. He thus illustrated a great philosophic truth, that a dead nature can give no reasons. All ultimate reasons are in terms of aim at value. A dead nature aims at nothing...Thus for Newton, Nature yielded no reasons: it could yield no reasons.15

Therefore, according to the ontological principle, actual occasions themselves must embody the "reasons" philosophy seeks. The ideas and concepts with which we are to conceive nature, the universe, and God are to be derived from the essence of actual occasions.

For process thought, as set forth by Whitehead, there is something that exists that we can know, for the "common sense of man conceives that all his notions ultimately refer to actual [occasions]."16 That which is spirit and that which is matter are not two disjunctive spheres but are, rather, part of the same reality—the same actual occasion. This unique concept of being fostered an equally unique corresponding metaphysic.


16Leclerc, Whitehead’s Metaphysics, p. 27.
The Process Metaphysic

To properly contrast the theories in question, an understanding of the basic tenets of the process metaphysic is necessary, for it is this metaphysic which provides the modus operandi for the process God. Although process thought had its origin in the mind of Alfred North Whitehead, its impetus can be traced back to the relativity theories of Albert Einstein. Clearly, this physicist and his concepts of spacetime had a great impact upon the philosophical development of Whitehead. The universe Einstein offered to the mind of Whitehead was no longer the Newtonian scheme of simultaneous, uniform, absolute objects, motion, space, and time. Rather, it was a universe of motion in which space and time became one continuum, and the physical characteristics of objects in motion became relative with respect to the reference point of the observer.

Whitehead, speaking of the Newtonian scheme, says:

The notion of empty space, the mere vehicle of spacial interconnections, has been eliminated from recent science. The spacial universe is a field of force, or in other words, a field of incessant activity. . . the unexpected result has been the elimination of bits of matter, as


This concept of reality greatly alters former concepts of matter under the Newtonian system. Bertrand Russell is correct when he says: "The world which the theory of relativity presents is not so much a world of 'things' as a world of 'events.' It is 'events' that are the stuff of relativity physics." This concept of "events" and the process by which they become actualized forms the basis for process philosophy. The existence of such a universe where events are brought into being along the spacetime continuum required a new metaphysical framework and that is exactly what Whitehead rendered.

Just as Einstein saw space and time as inseparable and as being one single continuum, so, likewise, did Whitehead. As previously mentioned, the heart of Whitehead's concepts of reality and spacetime flow is the idea of an actual occasion. According to Whitehead, at each point in time (tn) reality and all the physical objects that compose it are in a unique, specific order and arrangement. Such an actualized arrangement of matter in reality at tn is called an actual occasion. As time progresses from t₁ through t₁+n there are corresponding compositions of matter in reality. At each point along the relative spacetime continuum there is a corresponding actual occasion.

19 Whitehead, Modes of Thought, p. 186.

According to Whitehead, it is actual occasions that "stand out with a certain extreme finality."  

As long as time is progressing, actual occasions will be actualizing. When spacetime is viewed as an endless continuum, the corresponding actual occasions can be viewed as flowing one after the other in never ending succession.

As previously considered, one important aspect of each actual occasion is the actual entity or individual. Actual entities are actualized and perish with each unfolding actual occasion just like their aggregates (i.e. other matter in reality at $t_n$ such as sticks and stones). Because an actual occasion is actualized and perishes in such an extremely small increment of time, transition from one AO to the next is indiscernible to individual actual entities. The fact that transition goes unnoticed renders a perception of unbroken reality. The actual entity is never fully cognizant of the "present" (i.e. $t_1$ at which $A_0_1$ is actualized) but is aware only through reflection upon events that have already transpired. As quickly as

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22 Ibid., p. 585.
the present "becomes" it is the past and only then is reality suitable for examination through the reflection of actual entities. Whitehead comments further on this phenomenon when he says:

There is a conventional view of experience, never admitted explicitly but persistently lurking in the tacit presuppositions. This view conceives experience as a clear-cut knowledge of clear-cut items with clear-cut connections with each other. This is the concept of 'trim, tidy, finite experience uniformly illuminated. No notion could be further from the truth.23

He proceeds to say that we, as actual entities, "... are not conscious of any clear-cut analysis of complete experience."24 Therefore, because the amount of time at which an actual occasion transpires is so extremely small, there is no way for an actual entity to perceive when A0₁ ends and A0₂ begins. The progression of becoming an actual entity and proceeding through the point to actuality into non-being is indistinguishable.25

Although the composition of each actual occasion is extremely complex, that which composes an actual occasion does not come together in a random fashion. Rather, each A0 is comprised on the basis of a choice between a multiplicity of pure possibilities. These "pure possibilities" are also called "eternal objects" and are not created or destroyed. It is the eternal object (EO) that forms the reservoir of possibilities for future actual

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23Leclerc, Whitehead's Metaphysics, p. 43.

24Ibid., p. 44.

occasions. John Lango considers the nature of EOs when he says:

Each eternal object in the actual world of an actual entity has the potentiality for beingprehended [brought into the composition of the becoming AO]. Whereas, each created actual entity is created [comes into being at \( t_1 \)], each eternal object is eternal. Therefore, although not all created entities are in the actual world of that actual entity [because not all created EOs come into being when the AO comes into being], all eternal objects are in the world of that and every actual entity [because all eternal objects always exist as possibilities even if they are not actualized].26

The actualization of pure possibilities forms the basis for the process metaphysic as time progresses along the spacetime continuum.27 Each eternal object is prehended (i.e. considered for selection in the final actualized composition). In contrast, each created entity is prehended only by those actual entities in its future. Gruenler, discussing Whitehead's concepts of actual entity freedom, writes:

Accordingly, Whitehead rejects the Christian concept of the sovereignty of God and avers that "the concrescence of each individual AE is internally determined and externally free."28

The indeterminateness of the future afforded by the relationship between AOs and EOs is integral to Whitehead's metaphysic.29

26Lango, Whitehead's Ontology, p. 25.
28Gruenler, The Inexhaustible God, p. 29.
29Lango, Whitehead's Ontology, p. 25.
The process of possibilities "becoming" actual remains in a continuous state of flux. Part of this flux involves the movement from one actual occasion at \( t_1 \) to the next actual occasion at \( t_1+n \). This movement is known as "transition." \(^{30}\)

As the actual occasion progresses in transition, data is selected for the composition of present actual occasions from a myriad of possibilities provided by eternal objects. The action of selecting the composition of a present actual occasion is called positive "prehension" or "feeling" and involves determining which EOs will be actualized.

Regarding prehension, John Lango writes:

\[ \text{... each entity has the potentiality for being prehended by or ingressing into an actual entity; each entity has the potentiality for being an element in the internal process of concrescence [i.e. actualization] of an actual entity but some entities are excluded from concrescence.} \(^{31}\)\]

Thus, with the becoming of each actual occasion, a certain portion of data available for actualization is excluded from the final composition of the actual occasion. This


\(^{31}\) Lango, Whitehead's Ontology, p. 23.
exclusion of data is known as negative prehension. Lango goes on to say:

If an entity has the potentiality for being prehended by an actual entity, it must either be included as an element in the concrescence of that actual entity by being prehended positively or be excluded from that concrescence by being prehended negatively; it cannot be neglected. Therefore, whether prehended positively or negatively, the entity is always relevant to the actual entity.

It is this relationship between positive and negative prehension that ultimately determines what the composition of reality will be.

Once data has moved from positive prehension to a state of final actualization, "concrescence" has transpired. Whitehead comments on the process of actualization when he says:

The word concrescence is a derivative from the familiar Latin verb, meaning 'growing together'. . . . the principle 'concrete' is familiarly used for the notion of complete physical reality. Thus concrescence is useful to convey the notion of many things acquiring complete complex unity.

There are three phases involved in forming this complex unity. The initial phase involves the prehension or physical feelings acquired from transition. Thus: "An


33 Lango, Whitehead's Ontology, p. 23.

34 Ibid., p. 22.

actual entity 'conforms' to [i.e. is the effect of] the actual entities in its actual world through its initial phase of physical feeling."36

The next phase is the supplementary phase. At this stage complete ingestion takes place and the actual entity makes its own "valuation" (i.e. choice) as to its final form. In the initial phase the actual entity conforms, but in the supplemental stage it begins its own "aim." This process of valuation allows actual entities to remain only partially determined.37

The final phase is full being. The actual entity exists and possesses a complete unity of feeling.38 Clearly, the term concrescence denotes the actual occasion in between the point at which it is "becoming" and the point at which it "is no more."

Obviously, the metaphysical developments of Alfred North Whitehead drastically alter the Newtonian concepts of reality. Again, according to Russell: "Matter is to be conceived as strings of connected events like the successive notes of a song."39 That which gives the illusion of continuity of content present in subsequent actual occasions is the likeness of A02 to the preceding A02-n. Matter then exists because of the similarity of the

36Lango, Whitehead's Ontology, p. 35.
37Ibid.
38Ibid.
present actual occasion to previous events. Having provided a basic understanding of the process metaphysic and the "events" which compose it, the next section considers the resulting theological developments.

The God of Process Thought

For a time, Whitehead himself worked on developing a theology corresponding to his metaphysic. His original concepts have been adopted and expanded by other theologians such as John Cobb, Lewis Ford, David Griffin and Charles Hartshorne. The theologies of these men will be further explored in this paper.

According to process theism as developed by these theologians, God is thought to be a dipolar being. One pole is the mental pole and the other is the physical. This recognition of two divine poles is not an acknowledgment of the philosophical duality between mind and matter but rather an attempt to combine the material and the immaterial into a unified reality. Let us first seek to consider these poles individually and then view them in combination to better understand their interdependence.

When we are speaking of the physical pole of the God of Whitehead's process theism we are talking about the sphere of reality in which actual occasions (i.e. all physical reality) becomes actualized or achieve full being. Gruenler says of Whitehead's position:
God in his own actuality is consequent upon and derivative from their [actual entity] creativity. Creaturely freedom is indispensable to God's own concrete existence. God in his consequent or concrescent nature is contingent.40

This aspect of God is known as the "consequent" nature and involves all facets of concrescence.41 John Cobb speaks of this nature when he says:

The consequent nature of God is God's physical pole, his prehension of the actual occasion constituting the temporal world. Since these occasions came to be successively, there is successiveness in the divine nature that suggests temporality. However, the perpetual perishing that constitutes the temporality of the world is absent in God. Hence, God in his consequent nature is called everlasting.42

Therefore, some aspect of every actual occasion is everlastingly retained in God.43 Once an actual occasion has transpired, the data from that AO remains an eternal object in the mind of God thus remaining potential data for future actualities. The physical pole of God may then be thought of as the reception and actualization of data (i.e. pure possibilities) from the mind of God. This actualization of data is, in effect, all of physical reality making the material universe the body of God. God, therefore, always remains eminent "in" the world for, as Whitehead says, "God is 'in' the world, creating

40Gruenler, The Inexhaustible God, p. 29.
43Ibid., pp. 178-187.
continually in us and around us, or is nowhere."44 Clearly, we must realize that "that" which is not actual does not exist, unless it is a possibility, and all that is actual is God's physical pole.

While it is correct to say that God is "in" the world, God is not exclusively the physical universe for he has a mental pole containing pure possibilities. This concept of God allows process theism to be properly termed a form of panentheism. Although God is all that is actualized he is thought to be more than mere physical "stuff." Just as we are thought to have both body and mind, so God also is composed of both physical and mental poles making him a dipolar deity. It is to the process concept of God's mind that we now direct our thoughts.

Although consciousness and thought may be associated with mentality, in process theology they do not necessarily have to be. When we speak of mentality in process thought we are speaking of a self-determined response to data.45 In considering the concept of God's mentality, John Cobb writes:

Eternal objects are not actual entities like the occasions of experience. They are pure possibilities for realization of some limited number of such possibilities. . . . A conceptual prehension is a prehension of an eternal object as such. Just as physical prehensions comprise the physical pole of each actual occasion of


45Cobb, A Christian Natural Theology, pp. 33-34.
experience, so conceptual prehensions constitute the mental pole.\textsuperscript{46}

Therefore, all pure possibilities available for actualization are contained in the mind of God. God not only stores these eternal objects in his mind, he also coordinates their order as he attempts to direct the composition of becoming AOs. Again, Cobb comments on God's mental activity when he says:

\begin{quote}
. . . it is clear that God functions as a principle of limitation by ordering the eternal objects. If these existed simply as an indifferent multiplicity, there would be no basis for selection, hence no limits, no definiteness, no order. God provides limits by ordering this indefinite multiplicity.\textsuperscript{47}
\end{quote}

The mind of God plots the course of the evolutionary advance of the universe by providing each actual occasion with possibilities and therefore reacts self-determinatively to each AO. God is, thus, eminent in that he is "in" the world via his consequent nature but is transcendent in that his mind or "primordial nature" acts as a storehouse for non-temporal possibilities. This mental pole is known as the "primordial" nature and is responsible for coordinating, at least on some limited scale, the evolutionary advance of the universe.

Given the metaphysic that the process God must operate under, it is understandable that his attributes should be somewhat different than those ascribed to the God of

\textsuperscript{46}Ibid., p. 155.

\textsuperscript{47}Ibid., p. 34.
classical theism. One such difference involves God's omniscience. The process theologian, unlike his classical counterpart, holds that God knows all that he can know.\textsuperscript{48} However, this knowledge does not include the future for the future is not something there is to know. According to Lewis Ford:

Whitehead argues that God does know everything that there is to know, but he challenges that the future can be known as if it were already actual. To know the future in concrete detail which it will become is to know what is possible as if it were actual. This is a contradiction.\textsuperscript{49}

Charles Hartshorne comments on God's knowledge of that which has already transpired when he writes:

Is there a past for God? It is said that God's occasions never 'perish' and that there is no order of succession in the divine life, which is most expressly stated to be 'fluent.' It is indeed not the case that succession depends essentially upon perishing, upon fading of immediacy as events cease to be present events.\textsuperscript{50}

God, then, knows only that which is presently happening (i.e. all actual occasions) and all that which has or may potentially happen (i.e. pure possibilities).

Another divine attribute that diverges from the norms of classical thought is the process concept of omnipotence. The process notion of divine omnipotence involves God's ability to do anything necessary to "lure" his will into actuality.\textsuperscript{51} David Griffin puts it well when he says:

\textsuperscript{48}Ford, \textit{The Lure of God}, p. 11.
\textsuperscript{49}Ibid.
\textsuperscript{50}Charles Hartshorne, \textit{Whitehead's Philosophy} (Lincoln: University of Nebraska Press, 1972), p. 84.
\textsuperscript{51}Ford, \textit{The Lure of God}, pp. 19-20, 23.
"God's power is persuasive, not controlling." Process omnipotence does not include a divine ability to coerce. God does not compel any actual entity to follow his divine "initial aim." God only provides the lures or pure possibilities on which the actual entity may act.

Each actual occasion begins by prehending the "divine urge" or lure for the realization of God's initial aim (i.e. that which will accomplish God's purpose and actualize the greatest possible good). The actual entity has the ability to exercise freedom by positively or negatively prehending the initial aims of God. What is actualized is the "subjective aim" of the individual as the actual entity responds self-determinatively to the possibilities provided by God's initial aim. However, individual actual entities often negatively prehend much of God's initial aim, but the closer the two aims are in relation to that which is desired by God and that which is positively prehended by the AE, the greater the good that will result. Because man is a free willing entity of which God can only lure, never coerce, man has the ability to accept the lure of God or reject it. Process theism thus accounts for evil by contending its origin to be the self-determined response of the actual entity and not a

53Ibid., p. 227.
a product of God's divine initial aim. Under process theism, the omniscient, omnipotent God must consider the myriad of man's possible reactions to his divine initial aim, although he will never know how man will behave before he does so, as each occasion actualizes itself.

Like the God of classical theism, the God of process theology is also conceptualized as "Creator." John Cobb says:

In Whitehead's analysis, God's role in creation centers in the provision to each actual occasion of its initial aim. This role is of such importance that Whitehead on occasion acknowledges that God may be conceived in his philosophy as the creator of all temporal entities. Yet, more frequently he opposes the various connotations of the term creator as applied to God, and prefers to speak of God and the temporal world as jointly qualifying or conditioning creativity, which then seems to play the ultimate role in creation.55

He goes on to say that:

... the initial aim is the aim that is ideal for that occasion given its situation. It is not God's ideal for that situation in some abstract sense. It is the adaptation of God's purposes to the actual world. ... The initial aim does not determine the outcome, although it profoundly influences [what is actualized]. ... In subsequent phases the occasion adjusts its aim and makes its own decision as to the outcome it will elicit from the situation given to it.56

Therefore, he concludes:

The contribution of an occasion to its initial aim is not simply one among several equally important contributions to its actuality in

55Cobb, A Christian Natural Theology, pp. 203-204.
56Ibid., p. 205.
nature. The initial aim is in reality the initiating principle in the occasion.\textsuperscript{57}

Although God does not create the eternal objects which provide possibilities for each actual occasion, he does order them and provides the best possible lure for actualization. In this sense God is the Creator for without possibilities to actualize the occasion could not "become." God, then, creates by supplying the data which once prehended, provide the content for that which is ultimately actualized.

This principle of creativity is central to Whitehead's thought, for with creativity comes "novelty." Whitehead says:

Creativity is the universal of universals characterizing ultimate matter of fact. It is this ultimate principle by which the many which are the universe disjunctively, become the one actual occasion, which is the universe conjunctively. . . . It lies in the nature of things that the many enter into a complex unity.\textsuperscript{58}

As the "many become one" through creativity, novel events occur. Whitehead recognized that all reality has two poles, one mental and the other physical. Every actual occasion prehends past occasions or pure possibilities thus providing novelty to that which is created for there is always the possibility that the AO will embody some quality not received from its past world.\textsuperscript{59} Creativity is the

\textsuperscript{57}Ibid., p. 204.
\textsuperscript{58}Whitehead, "Process and Reality," p. 588.
\textsuperscript{59}Ibid.
principle of novelty. An actual occasion is a novel entity diverse from any entity in the many which are unified. Thus, creativity introduces novelty into the content of the "many" which comprise the universe disjunctively. The "creative advance" of process theism is the application of the ultimate principle of creativity to each novel situation which it originates. Novelty, then, is an essential factor in God's creative activity of Einstein's relative universe.

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Chapter Three

GOD AND THE RELATIVE UNIVERSE

After considering the concepts of Whitehead and subsequent theological thinkers, one recognizes that actual occasions are the process ground of reality—the "really real." These occasions are brought into being after data, provided by pure possibilities from the mind of God, are prehended. This data supplied by God's mental pole is actualized in his physical pole, the universe.

All actual occasions bear a resemblance to their preceding AO as event after event is actualized along the space time continuum. However, this resemblance is lost as AOs exercise their freedom and negatively prehend the will of God. God, then, is thought to act as a planner of the universal creative advance by providing possible lures for actualization. Although this God was postulated after the acceptance of Einstein's relativity theories, the question still remains: Can such a God function, as presently conceived, in the relative universe? It is to this issue we now focus our consideration.

The Ramifications of Relative Time

Perhaps the most important scientific contribution to our understanding of the universe was the proper incorporation of time into our physics. Unlike the conceptual framework of the Newtonian system, Einsteinian
physics does not hold time to be progressing at a constant uniform rate for each point in the universe.

The flow of time, and thus simultaneity under the Einsteinian system, varies with both position (i.e. point of reference) and velocity. Establishing the proper time flow for two objects moving relative to one another is determined by the following equation:

\[ T_1 = T_2 \sqrt{\frac{2}{c}} \]

Equation 1

Again, an example may be helpful to aid in our understanding of relative time flow.

161,000 miles/sec.    0 miles/sec.
A--------------------~-------------------B 0 miles/sec. 161,000 miles/sec.

Figure E

If objects A and B have a relative velocity of 161,000 miles/sec., Equation 2 would indicate that B's passage of time would appear to A to be progressing only half as fast as B perceives. The higher the relative velocity, the slower the appearance of B's time passage to A. The special theory of relativity shows the spacetime continuum flowing at a non-uniform rate for A and B. Time flows, or passes throughout the universe, at different rates for two points of reference moving relative to each other. This phenomenon is known as "time dilation."¹

It is clear, then, that with the development of the theory of relativity came a new concept of the flow of time. No longer can time be considered one universally advancing flow but is now to be looked upon as progressing at different rates relative to the reference point of the observer. This concept of a spacetime continuum causes some rather significant problems for the process thinker. It is to those problems we now turn our attention.

The Continuum and Duration in Time

A problem concerning God, time, and their relationship involves the use of the concept of an "increment of time" when analyzing the process. William James, a philosopher who shared Whitehead's account of a "field of perception," expounds upon the topic of our comprehension of time passage when he says:

Let anyone try, I will not say to arrest, but to notice or attend to, the "present" moment of time. One of the most baffling experiences occurs. Where is it, this "present?" It has melted in our grasp, fled ere we could touch it, gone in the instant of becoming.

Therefore, we may know the "present" only as we reflect on it as the immediate past. Whitehead further reflects this concept as he states that:

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In every act of becoming there is the becoming of something with temporal extension; but the act itself is not extensive, in the sense that it is divisible into earlier and later acts of becoming which correspond to the extensive divisibility of what has become.4

In discussing the concrescence of events, Whitehead writes:

Events become and perish. In their becoming they are immediate and then vanish into the past. They are gone; they have perished; they are no more and have passed into non-being.5

Although Whitehead views reality as an unbroken chain of events, there must be "points in time" at which these events become actual. Clearly, there is a period when an event is prehending possibilities for actualization and is said to be becoming, and a period when it passes out of actuality. However, there must also be a period when an event "is." There must be an increment of time, although extremely short, between an event's becoming and just prior to its non-being. John Cobb and David Griffin acknowledge this point at which things are "actual" when they speak of the "moment of concrescence (i.e. t1 at which AO1 is actualized)."6 Cobb goes on to write that:

From the point of view of physical time the actual occasions are temporally atomic. This is


they are indivisible into earlier and later portions, but they are not like points, indivisible because unextended. Each point has temporal extension. . . .

This position seems to concur with Whitehead's concept of an events' actualization in time for he says:

Temporal process, then, is a discrete succession of epochs, or arrests, each being the duration required for the emergence of a pervasive unity of a single fact.8

Therefore, when process thinkers speak of an actual occasion they are thinking about its actualization at an extremely small duration in time. Lewis Ford states that occasions transpire at a finitely small point in spacetime and are "conceptually divisible but undivided."9 What he appears to be saying is that you can conceptually divide an increment of time at which a complete AO occurs but you are left with two shorter increments of time and those increments, then, contain two complete actual occasions. This conceptual division can be done ad infinitum and what you are left with is AOs actualizing at smaller and smaller increments of spacetime. This conceptual division ultimately renders these increments, necessary for the actualization of AOs, infinitely small. However, if the increments of time at which AOs occur are infinitely small

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9Lewis S. Ford, A personal letter regarding process theism and relativity physics, 1 December 1983.
we can have an unbroken continuum of spacetime but no actual "durations" at which events can be actualized. If, on the other hand, there are finite points of time duration at which reality is actualized, other problems develop for process thought.

In process theology, at each point along the spacetime continuum, there is a corresponding actualized arrangement of matter in existence. This arrangement locks space and time into a unity. As long as time is progressing there is to be an inseparable corresponding actualized arrangement of matter in reality. However, if one insists that spacetime is a flowing continuum then there is no "point in time" for events to become actualized no matter how small the duration of time is theorized to be. If there actually is an infinitely small point in time at which actual occasions achieve being, the question then becomes: Does an AO really exist along the spacetime continuum at $t_n$? One may contend that the concept of an "increment of time" is merely an intellectual construct that helps explain the flow of spacetime and the actualization of reality. It appears, however, that at least Cobb, Ford, and Whitehead are postulating an actual duration in time where events are actualized.

Clearly, the Einsteinian concept of spacetime flow is one of a smooth, unbroken continuum (see Figure F1) for Einstein writes:

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The experience of an individual appears to us arranged in a series of events; in this series the single events which we remember appear to be ordered according to the criterion of "earlier" and "later", which cannot be analyzed further. There exists, therefore, for the individual, an I-time, or subjective time. This in itself is not measurable.\footnote{Albert Einstein, The Meaning of Relativity (Princeton: Princeton University Press, 1955), p. 1.}

Einstein, then, believed time to be an unbroken continuum where the "subjective present" (i.e., in process thought, the point at which reality is actualized) has no duration for it "is not measurable." This Einsteinian position would seem to indicate that there is no disjunctive "point in time" at which actual occasions achieve full being. The problem for process thought is that if a point in time where an AO takes place does exist, then time is not the smooth, unbroken, flow relativity physics claims it to be (see Figure F1).

![Figure F1](image)

If the point in time where actual occasions occur is infinitely small, then they are not true durations and such...
"points" cannot be distinguished from other points in time along the continuum where AOs occur. Such a view would allow spacetime to be viewed as an unbroken continuum but individual, distinguishable, actual occasions do not exist. However, if "moments of concrescence" exist as finite durations (see Figure F2) in time at which AOs actualize themselves, then process theologians can speak of specific actual occasions which compose reality at \( t_n \) but cannot speak of an unbroken flow of spacetime as required by relativity physics.

Lewis Ford responds to this criticism by saying:

The extensive continuum (EC) is continuous but potential, whereas the actuality of becoming which atomizes the continuum is discontinuous. [There is] no difficulty if we recognize the difference between the potential and the actual.\(^{12}\)

However, to acknowledge that the continuum is "atomized," or to treat it as made up of many diverse unities of actual occasions, is to acknowledge that process thought considers the spacetime continuum to be a series of "punctuations." If that which is actualized, or necessary for a given concept of actualization (i.e. a duration in time) serves to punctuate the continuum, then, in reality, one has no continuum at all—merely a chain of punctuations. A distinction between that which is actual and that which is potential is irrelevant if it is admitted that that which is actual atomizes the continuum. The concepts of

atomization and the progression of an unbroken continuum are mutually exclusive when considering the spacetime continuum of relativity physics. Given our current understanding of the physical universe, the process theologian must hold time to be an unbroken flow in order to maintain consistency with Einsteinian physics. However, an unbroken flow does not allow for "points in time" at which reality "is."

The process necessity for durations in time has ramifications beyond mere inconsistencies with relativity physics. Another problem involves the ability of actual entities to maintain selfhood and meaningful consciousness as events actualize along the spacetime continuum.

The classical concept of the individual is one in which there is continuity. Although there are personal aspects that change there is an underlying "self" that makes "me" the same "me" I was yesterday and will be tomorrow. As individuals, we reflect on past events and anticipate future events but can experience events only as they are actual. However, it is the biblical position that the same individual experiences each present. Gruenler writes:

Without the personal pronoun I as the prior reference point, there can only be discrete units with no relation and no perception from which to judge that which they belong, to a person's past, present, or future. They would just be "there," unrelated. If a concrescing unit is said to remember, or to anticipate, then there is
introduced the language of a continuous agent who underlies or transcends the process of time.\textsuperscript{13}

But if it is conceded that self continuity is necessary to the individual, what accounts for this continuity in the process actual entity? Gruenler attributes continuity to the individual soul. He states, "The human soul, . . . does not sputter in and out of existence every fraction of a second."\textsuperscript{14} Gruenler contends:

From a biblical perspective, that personal I is a creation of God and a gift, a soul that accounts for the unity of the so-called atomic events. The discrete events cannot of themselves produce a unified self.\textsuperscript{15}

Continuity of the self is therefore assured by the existence of an eternal soul. While certain characteristics may change with time, the self remains continuous. Both continuity of the individual and meaningful consciousness are rationally held under a concept of nonatomized time flow. Events, or that which is presently actual, produces an unbroken stream of reality which makes the soul continuous and corresponding experience possible. While biblical theism resolves the issue of individual existence and consciousness, the process theist and his punctuated continuum experience great difficulties regarding these issues.


\textsuperscript{14}Royce G. Gruenler, The Inexhaustible God, p. 96.

\textsuperscript{15}Royce G. Gruenler, The Inexhaustible God, p. 110.
As we shall recall, actual occasions (i.e. the composition of reality at \( t_n \)) occur, if we adopt the process view of time passage, at a specific duration or point in time. With the actualization of \( A_{02} \) at \( t_2 \), \( A_{01} \) at \( t_1 \), with all of its corresponding components, perishes in its actuality. The components of \( A_{01} \) remain nothing more than eternal objects, pure possibilities for future actualities. It must also be remembered that actual entities compose every actual occasion but, like other components, cease to "be" as spacetime progresses from \( t_1 \) to \( t_2 \). John Cobb addresses this concept when he writes that:

> The easiest way to understand this would be to regard God, like human persons, as a living person. A living person is a succession of moments of experience with special continuity. At any given moment I am just one of those occasions, but when I remember my past and anticipate my future, I see myself as a total society or sequence of such occasions. God, then, at any moment would be an actual entity, but viewed retrospectively he would be an infinite sequence of divine occasions of experience. It is clear that Whitehead himself thought of God as "an" actual entity rather than as a living person.\(^{16}\)

Given the fact that actual entities are nothing more than succession of occasions, we must realize that \( A_{E2} \) composing \( A_{02} \) has an entirely separate and unique existence from those occasions which preceded it. Gruenler addresses this issue well when he writes:

> If the conscious personal self is the end result of a previous series of I's called "myself," then

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\(^{16}\)Cobb, *A Christian Natural Theology*, p. 188.
my new emergent self came only at the end of the
democrated occasion of all the myriad feeling
occasions of my body that contribute to it. I
have, or am, my new "I" only for a fractional
moment before it too becomes a datum for the next
emerging "I."... Hence the "self" lives into
unrealized possibilities of the future and has
only a momentary immediacy in the present before
it perishes as a dead datum into the past. A
continuous series of substantially unrelated
"I's" constitute the "person," with no enduring
substantial self to remember the past or
anticipate the future.17

$A_0_1$ and $A_0_2$ are components of two separate actual
occasions. $AE_1$ present in $A_0_1$ at $t_1$ is no longer in
existence at $t_2$! However, according to process thought,
some concept of continuity of the "individual" is alleged
by the resemblance of $AE_2$ to $AE_1$.

Although process thought seems to provide for some
continuity of characteristics between $AE_1$ and $AE_2$, the
question to be asked is: How is there a continuity of
consciousness between $AE_1$ and $AE_2$ if both are part of
completely different occasions? William James considers
the issue of consciousness along the spacetime continuum
when he says:

Within each personal consciousness, thought is
sensibly continuous. I can only define
continuous as that which is without break, crack
or division. The only breaches that can well be
conceived to occur within the limits of a single
mind would either be interruptions, timegaps
during which the consciousness went out; or they
would be breaks in the content of the thought so
abrupt that what followed had no connection
whatever with what went before.18


18James, Psychology, pp. 157-158.
If an actual entity is not the same at \( t_2 \) as it was at \( t_1 \), the break in consciousness should be so abrupt that there is no meaningful conscious "connection whatever with what went before!" Although we are referring to the same "individual," we must not forget that actual entities, a succession of which compose an individual actual entity, are separate entities and perish with the concrescence of the next actual occasion. According to the process concept of the progression of spacetime, \( AE_1 \) and \( AE_2 \) are two distinct components of two distinct occasions transpiring at two distinct points in time. Therefore, under the process metaphysic, how is the continuity of individual consciousness accounted for?

The point is that if there is no continuity of meaningful actual entity consciousness, both human and divine, it would provide evidence of a punctuated continuum. If AEs are components of completely separate occasions actualized at "points in time," there should be no coherent thought—but there is! Without continuity of actual entity consciousness, meaningful thought becomes impossible. For example, an individual listening to Big Ben chime 12 o'clock should not hear twelve chimes in succession. Rather, he should hear Big Ben chime once on twelve separate occasions with no coherent relationship to those chimes which preceded them. If Whitehead's account of reality is correct, no rational thought should be possible. James again addresses this issue saying:
Consciousness, then, does not appear to itself chopped up in bits. Such words as "chain" or "train" do not describe it fully as it presents itself in the first instance. It is not jointed; it flows. A "river" or "stream" are the metaphors by which it is most naturally described. In talking of it hereafter, let us call it a stream of thought, of consciousness, or subjective life.¹⁹

Contrary to the process notion of an "increment of time" punctuating the continuum, the flow of spacetime must remain unbroken in order to account for the coherent consciousness of individuals.

However, even if we allow for the process concept of a punctuated continuum and meaningful individual consciousness, other problems regarding spacetime develop. If the spacetime continuum is atomized and novel actual entities come in and out of existence at every moment, individual freedom becomes meaningless. While the process theologian may claim that the individual is only partially determined by prehended data, any "free choice" an actual entity makes will not effect the entity who chooses. AE₂ must live with the choice of AE₁ while it, in turn, chooses for AE₃. However, those who make the choice never experience its consequences. The "choice" I made as AE₁ is experienced by a different "I" as AE₂. Therefore, the freedom of the individual to choose is meaningless because the actual entity which makes a choice at t₁ is not the same entity at t₂ which experiences the results of earlier

¹⁹Ibid., p. 159.
decisions. If the individual is merely a succession of actual occasions along the atomized spacetime continuum, then freedom of choice is absurd because no choice can ever effect the entity who makes it.

If the actualization of each actual occasion is somehow overlapping, many problems regarding individual identity may be resolved. Gruenler states that:

If there are no gaps between occasions but rather overlapping, then time is a continuous flow and the atomic theory of time must be jetisoned. But the atomic theory of time is central to process concepts of ontology. The process theist must, therefore, insist that events are actualized along a punctuated continuum. However, additional difficulties arise for process thought. If there is a point in time at which an event comes into being and another perishes, there must be a point at which nothing exists. Again, Gruenler addresses this issue when he writes:

The difficulty is that Whitehead's epochal or atomic theory of time...leads to the problem of gaps between successive occasions during which nothing exists.

If this is so, two interesting problems arise.

The first problem involves the issue of cause and effect. Understanding that event X and event Y are two


21 Royce G. Gruenler, The Inexhaustible God, p. 98.

22 Ibid., p. 95.

23 Ibid.
separate occasions, how can we say that event X can affect
event Y if both events are separated by a point of
non-existence—the point in between the perishing of X and
the full actualization of Y? Gruenler, considering a
process critique by Rem Edwards, writes:

If there is a gap between occasions, how can a
completely perished occasion function causally to
present data to its successor? God cannot be
drawn in as the ground of givenness of the past
to bridge the past. . . [for] the process system
allows no divineprehension of contemporaries.24

How can two separate, distinct, individual events have any
affect upon one another if they are separated by a point
when nothing "is?" It would appear that, given the concept
of an atomized spacetime continuum, event X cannot affect
event Y!

The second difficulty revolves around the existence
and continuity of God's consequent nature. If, there is a
point along the spacetime continuum at which X is no longer
actual and Y has not achieved full being, must God create
ex nihilo in order to bring Y into being? It would appear
that he must, for if there is a period of "non-being" after
A0₁ perishes and before A0₂ is fully actualized, from where
does A0₂ come? If there is a point of non-being between
A0₁ and A0₂ there is nothing actually existing
"immediately" prior to the actualization of A0₂ from which
A0₂ can be composed. If the continuum is punctuated, it
would appear that God must create ex nihilo each time a new

event is actualized. While this would allow for the continuation of physical reality, it betrays the concept of God as a divine artificer working only with material "on hand." If, however, it is held that God cannot create "out of nothing" and the spacetime continuum is atomized, then there are points at which portions of physical reality, the components of God's consequent nature cease to exist! If God is held to be a continuous actual entity, he must still bring reality back from nonexistence for each disjunctive AE. If God is a series of disjunctive AEs himself, he must bring himself back from nonexistence as he pulsates in and out of actuality with each atomic unit of time.

If spacetime is an unpunctuated flow, there can be no "point in time" at which an actual occasion can actualize itself. However, to function under the process metaphysic, the theologian must contend that there are points in time or "moments of concrescence" at which actual occasions transpire. This view of a finite point along the spacetime continuum allows for a moment at which an AO can be actualized but results in a punctuated view of the spacetime continuum. The problem for the process theologian is that both views of the spacetime continuum, essential to the development of process theism, are inconsistent when held together.

The Creative Advance of God

The Einsteinian spacetime flow also causes problems for process theism's concept of God's "creative advance"
and his relationships "in" time. According to David Ray Griffin, the "evolutionary development of our world is manifesting the creative purpose of God." The evolution discussed is not just biological for it includes social, political, cultural, and other advancements. The universe is not considered to be progressing by chance but, rather, advances with the direction supplied by the lures of God. God continues to provide eternal objects, placing the universe on a path toward ever-increasing goodness and complexity. Therefore, it is God's aim to bring about the greatest possible good (i.e. the greatest complexity) by directing the universe along the evolutionary scale.

The purpose of this "creative advance" is better understood when we realize that:

... in the foundations of his being, God is indifferent to preservation and to novelty. He cares not whether the immediate occasion is old or new, so far as it concerns derivation from its ancestry. His aim is for depth of satisfaction as an intermediate step towards the fulfillment of his own being. This God is a being whose conceptual valuation is undervived from that of any other entity and who, in urging the realization of the possibilities he entertains, aims at his own self-satisfaction.

The great creative evolutionary advance is, therefore, plotted and directed by the process God in order to provide


28Cobb, A Christian Natural Theology, p. 188.
himself with richer and more complex experiences.

The fact that God seeks richer experiences illustrates the process concept that God, himself, is actualizing (i.e. learning, growing, evolving) as each event in the universe unfolds before his watchful eye. However, it is important to remember that the eye of the process God is "in" time. Therefore, in order to fully prehend the entire universe, he can no longer be under a single time frame but must account for multiple rates of time progression. At this point, process theism shows another flaw. First, if there exists something that can travel at the speed of light or faster, as many scientists theorize there may be, time for that entity is running in reverse (see Equation 2). If such a state of affairs is actual it must then be understood that part of God's body, physical reality traveling at the speed of light, could then de-evolve as events decline in complexity along the evolutionary scale. Portions of God's mind would also regress in the evolutionary process as AOs from the hypothetical entity run in reverse providing less complex EOs for storage in the mind of God. The process God would be placing less complex eternal objects into his memory. Although God is thought to have a perfect memory and would continue to absorb new experiences, the experiences absorbed would be perpetually less complex than those which

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30 Gruenler, The Inexhaustible God, p. 80
preceded it. Such a situation would limit God's purpose in establishing ever-increasing complexity throughout all actuality (i.e. the universe) leading to greater possible good. Clearly, the speed of light becomes the hypothetical limit to the process God's ability to realize his aim toward complexity for that entity and for an ever-richer experience for himself.

God, in this present cosmic epoch, appears to be limited by the speed of light and its relationship to time, for if objects could travel faster than light, portions of the actualized universe would begin to de-evolve as they regress in complexity. However, let us assume, for the sake of argument, that time is advancing forward, that evolution is progressing onward toward greater complexity, and that God is realizing his creative advance for the universe. At this point, a second problem appears.

Lewis Ford and David Griffin both recognize that the universe is finite and that there is a finite number of pure possibilities available for actualization. Does this mean that there must be one finite point along the spacetime continuum at which the maximum possible good for the total universal system is achieved? It would seem that if there are only a finite number of possibilities that may be actualized, there must be some point along the continuum at which every combination of possibilities would be realized. If God continues to lure toward ever-increasing complexity, one could logically conclude that at least one
combination of actualized possibilities would result in the
greatest complexity and the maximum possible good. This,
however, is not necessarily the case.

As one considers God's efforts to bring about the
creative advance of all that is actualized, one must
remember that the spacetime continuum is not flowing at a
uniform rate throughout the universe. Alan Gragg,
commenting on the process theism of Charles Hartshorne,
writes:

Modern relativity physics holds that there may be
a definite cosmic past and a definite cosmic
future but not a definite present. However,
Hartshorne's philosophy sharply distinguishes
between a fully determined past and an
indeterminate future. Apparently, God must have
an objectively right frame of reference from
which to determine the simultaneous
present. . . . 31

The problem is that there is no simultaneous, universal,
present given Einsteinian relativity.

Because time, and therefore complexity, advances at
different rates throughout the universe, it is possible for
the ultimate good to be achieved in one part of the
universe before it is achieved in others. If one part of
the universe were to reach ultimate good before the others,
would that mean that the process stops in that part of
God's body? The purpose of the process is to attain the
ultimate good, or richness of divine experience, but if the
possibilities are exhausted and good in that part of the

31 Alan Gragg, Charles Hartshorne (Waco: Word Books,
universe is achieved, what purpose would the process continue to serve? Again, Lewis Ford says:

No part of the Universe, on achieving the good, would be put on hold, for temporality is inexorable, and new aims would be met, more or less imperfectly.32

Therefore, one part of the universe cannot wait for another part of the universe to catch up in goodness. Good cannot be achieved on a uniform front but, rather, is "... achieved. sporadically, depending on creative response."33 An example may be helpful here.

![Figure G](image)

All of the universe (C) must be in a condition of ultimate good simultaneously for the maximum total good of the entire universe to be achieved. If one part of the universe (A) has reached ultimate good, does it go into a holding pattern waiting for the rest of the universe (B) to catch up? If so, we could say that the process would not be occurring for time would be standing still (i.e. time progression is necessary in order to actualize successive actual occasions) in that "good" part of the universe (A). God would be learning nothing from that portion of the universe (A) because nothing would be advancing. If that specific portion of the universe which has reached ultimate

32Ford, personal letter, p. 3.
33Ibid., p. 4.
good begins to de-evolve in order to perpetuate the continuity of the process (i.e. after maximum good is achieved, the only way for the process to move would be in the direction of less complex actual occasions), then the cosmic maximum good for the universe as a complete system can never be achieved.

However, you cannot compartmentalize the universe for that which forms the actual occasions of one section of the universe (A and B) forms the actual occasion for the entire universe as a system (C). Therefore, given the concept of non-uniform universal time flow, God's desired ends, as evidenced by the maximum possible good for the entire universe, will never be achieved. As soon as one part of the universe (A) is brought into ultimate good the influence from the section still evolving (B) will bring it (A) back out of ultimate good. Therefore, the ultimate good for the universe (C), as a system, can never be actualized. AOs must then be separated in order to achieve ultimate good for the entire system, but they cannot be because you cannot segment the universe. Therefore, the universe must achieve a simultaneous ultimate good but simultaneity has no place in Einstein's relativity physics.

Lewis Ford recognizes the difficulties inherent in contending that the universe could achieve a simultaneous ultimate good but he responds to the present critique by saying:

If there is an infinity of cosmic epochs, each with their own possibilities of realization, it
is difficult to see how this whole process could be maximized.34

However, if we accept that there are an infinite number of cosmic epochs, each with their possibilities, the problem of ultimate good still remains for that specific cosmic epoch under consideration. We can say, with some certainty, that there is no simultaneity of time in our current cosmic epoch so the question can still be raised: How will God achieve universal ultimate good for our present epoch given our non-uniform time flow? Admitting that there may be other cosmic epochs with other possibilities but recognizing the problems of temporal simultaneity in our present cosmic epoch, God cannot assume that the maximum good for our universal cosmic epoch will ever be reached.

Lewis goes on to say that:

[Process theism]. . .is not committed to the complete consummation of the universe in the universe per se, for the real consummation takes place within the consequent nature of God— that is where heaven is.35

Such a position should lead one to ask: Will the process, directed by God, ever have an actual consummation? Not in any final sense, for if there are an infinite number of cosmic epochs and corresponding possibilities, the God of

33Ibid., p. 4.
34Ibid.
35Ibid.
process theism will continue to self-enrich himself with experiences of greater complexity as he continues to lure the process on eon after eon, ad infinitum. If we accept the contention that God continues to direct the process that has no actual resolution, one should wonder "why."

John Cobb asks this very question when he writes:

In all other entities satisfaction is not attained except as the completion of the entity. If God is a single entity who will never be completed, then on this analogy, he can never know satisfaction. It would be odd that God should eternally aim at a goal that is in principle unreachable, and Whitehead explicitly refers to God's satisfaction as something real.36

It appears inconsistent to think that God would continue a process that has no culmination, prod the process along the spacetime continuum while taking aim at something that can never be achieved, when he is the only one who will realize any lasting benefits.

The Uncoordinated Universe

Another major question concerning process theism arises when we again consider the relationship of God to time. According to process theology, God is not separated from time but is "in" time just as other temporal creatures.37 The next question to be considered is: Does God, as we do, have only one point of reference from which to observe the happenings of the universe?

36Cobb, A Christian Natural Theology, p. 189.
According to the theory of relativity, it is impossible for an observer in time to have more than one reference point. Although God is not an exclusively physical object, he does have a physical pole which places him "in" time. Therefore, if God is going to remain consistent with the laws of contemporary physics he, too, can have but one point of reference. If God is going to remain in time and consistent with the principles of Einsteinian science, it will become impossible for the process to take place under his direction.

It must be realized that if God has but one point of reference from which to prehend the universe, he will be subject to the same relative variation in time as other temporal actual entities. Different parts of the universe, or God's body, will be progressing at different rates. The question to be asked is: Which time frame is God "in?" Is he in mine? He must be if he is going to provide effective lures at $t_1$ in my personal time frame. However, the problem is that God must provide lures to all AOs in all reference frames throughout the entire universe. In a sense, the entire universe must be thought of as one simultaneous actual occasion if God is to provide lures at $t_1$ in every time frame. Difficulties arise when we remember that AOs happen at a specific point in time ($t_1$) in reality, but there is no uniform time flow that would allow for a universal actual occasion which, in turn, would allow for a universal lure. From an individual actual
entity's point of reference in time at $t_1$, lures for an actual occasion are required "now" but part of the composition for this "present" AO at $t_1$ is also required at $t_2$ in another part of the universe. The difficulty is that if God is in time he can only supply eternal objects to those with whom he shares a temporal frame of reference. He cannot supply lures for the universe as a system!

God has only one point of reference in time through which he may provide possibilities for actualization throughout the universal system. However, the universe is not one big, uniform, unified time frame. Viewing the universe in its entirety, it is impossible for God to provide universal lures because, even for the process God, no unified time frame exists. One may be able to talk about specific, individual possibilities and actual occasions for specific parts of the universe, but one cannot speak of one comprehensive actual occasion or lure transpiring or being supplied for the entire system. God may then exercise limited control over small portions of the universe, the portion that God is "in," but he cannot coordinate lures for the entire system because he must have just one point of reference through which to comprehend the universe and reality is actualizing in multiple time frames.
As we consider the ramifications of God's existence in time, we must conclude that the tenets of process thought are inconsistent with portions of relativity theory. In the previous chapter, we considered the problematic process concept of time flow, the advance toward ultimate good, and God's apparent inability to offer effective direction to the universe as a system. Let us now further examine the relationships of God in time and his ability to function under the laws of the physical universe of relativity physics.

Is God Really God?

For many centuries, man has centered his worship around that which he considers to be God or the gods. The controversy regarding what should be worshipped as God continues to this present day, for many of the world's theologies are still vying for the minds of men. However, it is rare among contemporary theologians for there to be a competition for the position of "supreme being" within one theological system. This very situation appears to be taking place in the structure of process theism.

Anselm was the first to develop an argument for the existence of God based upon ontology and its predicates. This argument has been adopted and reformed over the years by various theologians, one among them being the process
thinker, Charles Hartshorne.\(^1\) Simply expressed, the argument states: 1) God is a Being of which none greater can be conceived; 2) A Being which none greater can be conceived must exist; 3) Therefore, God must exist. There are several unstated premises involved in the argument—one of them being that existence is an attribute—but assuming that they are correct the question becomes: Within the process system, what is the greatest thing that can be conceived? Recognizing that all measurement is relative with respect to points of reference, Einstein applied his scientific concepts to our understanding of mass and velocities. This application has a significant impact upon our certainty of the identity of a God in time. Given concepts of relativity physics, matter in motion, and the "creativity" of the process metaphysic, ambiguities arise regarding who God really is.

Expanding an equation developed by a fellow physicist, H. A. Lorentz, Einstein concluded that as velocities increase, the length of an object would decrease with respect to the direction of motion.\(^2\)

\[
L_1 = L_2 \sqrt{1 - v^2/c}
\]

Equation 2


This contraction in length would only be detected by another observer through his point of reference because all measurement devices traveling at the same velocity would correspondingly contract.

Therefore, if two objects were passing one another at velocities approaching the speed of light, both observers would consider themselves to be at a "normal" length and that which they observe to be "distorted." However, both would be correct in their measurement with respect to that which they observe because measurement is relative with respect to the point of observation. According to Equation 2, the length of a physical object traveling at the speed of light would go to zero. The velocity of the speed of light becomes the universal absolute for it is the maximum velocity for material objects. The physical object traveling at such a velocity would no longer spatially exist!

Another aspect relevant to the consideration of objects in motion is Einstein's concept of mass increase with increased velocity. Just as the speed of light became the impenetrable boundary for physical objects with length, so it is for objects with mass. According to Einstein's theory and corresponding equations, the mass of an object continues to increase as the velocity of the object approaches the speed of light.\(^3\) According to the equation:

If an object reaches the speed of light, its mass, theoretically, becomes infinite. Once again, the speed of light becomes the speed at which no material object can travel, for it would require an infinite amount of energy to propel an infinite amount of mass at such a velocity. As considered in $E = mc^2$, an object's mass correspondingly approaches infinity thus requiring all available energy in the universe to achieve that velocity. This, of course, is a scientific impossibility, making the speed of light unattainable for physical objects.

Because of the relationship between physical objects and the speed of light, an interesting phenomenon occurs in relation to addition of object velocities. According to the theory of relativity, no matter what the velocity of two approaching objects relative to one another may be, the addition of their velocities can never exceed the speed of light.\(^4\) This relationship is illustrated in the following equation:

$$V_{AB} = \frac{V_A + V_B}{1 + \frac{V_AV_B}{c^2}}$$

An example may be helpful here:

![Diagram](image)

If object A is traveling at a velocity of 100 miles/sec., and object B is traveling at 100 miles/sec., and they are both traveling toward one another with observer C directly between them, we could say, under the old Newtonian system, that the combined velocity of A and B with respect to C is 200 miles/sec.

$$V_{AB} = V_A + V_B$$

**Equation 4b**

However, if we increase the velocity of A and B to 100,000 miles/sec., we notice a problematic result if we try to combine their velocities. If one removes C as a reference point, thus rendering the velocities of A and B relative to each other, one cannot obtain the results of Equation 4b. Because the speed of light is the absolute velocity at which no physical object can travel, and because velocity measurement is relative with respect to the point of observation, we cannot have an answer of 200,000 miles/sec. Because light travels at only 186,000 miles/sec. and a physical object's relative velocity cannot attain the speed of light, it is necessary to apply Einstein's concepts of
velocity addition as illustrated in Equation 4a. Therefore, the correct velocity addition of A and B is 155,000 miles/sec. After our consideration of Equations 2, 3, and 4a, we must conclude that the speed of light is the absolute velocity at which no material object can travel in Einstein's universe.

With the speed of light firmly established as the ultimate boundary for physical object velocities, we must begin to raise some serious questions regarding the origin of such laws. Let us suppose that God wanted to lure an actual entity to travel at light speed in order to achieve his aim at greater complexity. Could he do it? According to the theories of relativity, he could not, even if the actual entity was willing to conform his subjective aim to perfectly match the divine initial aim. The question then becomes: Who placed this restriction upon God and the universe? Who established the speed of light to be an absolute? Ford may contend that it is inherent in the process metaphysic and our current cosmic epoch but, at this point, questions regarding supremacy and the identity of God begin to surface.

Whitehead believed that there was a God of this relative universe because:

The universe presents itself to our attention as a process of becoming which is the becoming of

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5Coleman, Relativity for the Layman, p. 67.

actual entities, and...there is needed a ground
of becoming, an explanation of the fact of there
being a universe, and of its being this
particular universe.6

It is clear that the physical universe is not the
metaphysical ground of all being and physical laws, but
Whitehead acknowledges that God is not either. Whitehead's
universe is a universe of creative process and God is
merely postulated to explain the existence of a reservoir
of pure possibilities which actualize into reality.
Whitehead expresses his semi-subordination of God to the
process itself when he says:

Neither God nor the world reach static
completion. Both are in the grip of the ultimate
metaphysical ground, the creative advance into
novelty.7

Clearly, the ultimate metaphysical ground which makes
possible the creative advance defining the confines of
physical laws along the spacetime continuum is not "God"
but the process of creativity itself.

The question for the process theologian then is not
whether God exists, but rather which concept of being is
the greatest that can be conceived—God of the possibili-
ties, the process of creativity, the ultimate metaphysical
ground? It must be remembered that creativity is necessary
for the continued existence of God, for without the process
there could be no actualization of God's lures and no
consequent nature. However, God is also necessary for the

7John B. Cobb, A Christian Natural Theology
perpetuation of the process, for he supplies the possibilities for realization. It may then be contended that God encompasses all of reality so that the process is, to some extent, a part of God. However, the question still remains regarding the identity of that which is "supreme," for how can one part of God be in the "grip" of another part of God? Would not this mean that God cannot even control himself? Does God "grip" himself? If Whitehead declares the creative advance of the process to be the metaphysical ground of this relative universe able to have both God and the world in its grip, then the creativity is the greatest which can be conceived and is truly "God". The term "God" merely describes an attribute of the process itself. If there is any distinction between God and creativity, the creativity clearly should be God.

A follower of process theism may conceivably respond that God is still "God" in spite of his apparent subordination to the process. The question may then be raised: Who created this creativity and the corresponding physical laws of this cosmic epoch that has God in its "grip"? The traditional process position is to contend that God is not the originator of the process or the laws that grip him. Some may believe the process to be inherent in the make-up of the universe. But why is the process to be considered inherent? The process and corresponding

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physical laws are merely a description of relationships between God's mental and physical poles. To say that the process and the laws of relativity physics are inherent to the composition of the Einsteinian universe is to say that God operates the way he does because God operates the way he does. This, however, does not answer the question regarding their origin.

If the process that has God in its "grip" and the relative laws that limit his actualization of lures are not inherent in the composition of the universe, and he is not their originator, we can only arrive at one conclusion. The God of process theology is being gripped by the creativity of a process and limited by laws that have their origination in another source. Since we, as actual entities, are subject to the same process as the God of process theism, it can be concluded that we are not the source of the process nor relative physical laws. If it is not us nor the God of process theology that is the source of the process that grips all of reality, the source must be a thing that is superior to all. But if the God of process thought is in the grip of a process and laws that have their origin with a superior entity, who, then, is the God behind God? If there is a God behind the God of process theism, we must contend that the process God is not really a God but merely an entity subordinate to the creative process and, in some sense, superior to us.
The Ultimate Actual Entity

As previously considered, that which provides the basis for that which we perceive as reality are actual occasions. These arrangements of matter in reality at a point along the spacetime continuum are composed of actual entities. Whitehead considers the actual entity when he writes:

Actual entities . . . are the final real things of which the world is made up . . . [However] God is an actual entity, and so is the most trivial puff of existence in far-off empty space. But though there are gradations of importance, and diversities of function, yet in the principles which actually exemplifies reality all are on the same level. The final facts are all alike, actual entities; and these actual entities are all drops of experience, complex and interdependent.9

For Whitehead, God is the ultimate actual entity for he encompasses all that "is." God is all that is actualized along the spacetime continuum.

However, as one reflects on the nature of the Einsteinian spacetime continuum, one begins to ask questions about the concept of God as the ultimate actual entity. As established in previous chapters, time does not flow at a uniform rate throughout the universe. Rather, time flows at a non-uniform rate throughout the universe relative to the reference point of the observer. Instead of time advancing along a uniform front, it has the traits of water spilled on the ground. Such free flowing water

does not move at a uniform rate on a unified front but surges and ebbs as it moves along. So it is with relative time progression. This non-uniform rate of spacetime flow led us to the conclusion that there could be no universal actual occasion at \( t_1 \), for \( t_1 \) cannot be simultaneously reached throughout the universe as a system. This concept of relative time flow again causes problems for process theism.

Whitehead believes that God encompasses all of reality and is, therefore, one big all-inclusive actual entity. All that is actualized at \( t_1 \) and all that potentially could be actualized is God. David Griffin writes of Whitehead's position when he says:

> For Whitehead, God is a single actual entity. Hence the divine polarity must be that of an actual entity. Analogously to all actual entities, the nature of God is dipolar. He has a primordial nature and a consequent nature. The primordial nature is analogous to the conceptual pole of an actual entity, while the consequent nature corresponds to the physical pole, so that in God the conceptual poleprehends the physical.\(^\text{10}\)

All that is actual is God. For Whitehead, then, the God of dipolar theism is to be considered one single actual entity.

Given contemporary concepts of the relative spacetime continuum, the concept of God as a single actual entity becomes problematic. Because of the non-uniform rate at

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which time progresses throughout the universe, we cannot talk about simultaneous time throughout the system of reality. If there is no simultaneous time \((t_1)\) throughout the universe at which all of reality becomes actualized, one cannot speak of "an" actual occasion at \(t_1\) which encompasses the entire universe as a system. There is no simultaneous time which would allow for a universal actual occasion. Therefore, God cannot be thought of as a single universal actual entity because there is no universal time at which a universal actual entity could be actualized.

Because time is relative with respect to the reference point of the observer, we can only speak of actual occasions taking place at \(t_1\) inside each individual reference frame. There are, then, as many actual occasions taking place as there are points of reference. Although we may still attempt to speak of God as a single actual entity, God can only be one out of the infinite number that are "contemporaneously" being actualized. If only one actual entity can be God, which actual entity is he? The problem for process thought is that one cannot consider God to be one universal entity actualized at \(t_1\), for there is no simultaneous \(t_1\) throughout the universe that would allow for the existence of a universal actual entity \((AE_1)\). Because there can be no all-encompassing frame of spacetime, there can be no single all-encompassing actual entity. This means that if God is to encompass all of reality, as is implied by his consequent and primordial natures, he cannot be a single actual entity.
The process theologian, Charles Hartshorne, recognizes, although for different reasons, that the concept of God as a single actual entity is incorrect. Hartshorne attempts to bypass the single actual entity approach to God while adopting a concept that still allows God to be all-encompassing. Hartshorne chooses to view God as a society of actual occasions thus allowing for a non-simultaneous flow of time. He correspondingly abandons the concept of God as the single divine AE. Again, Griffin writes of Hartshorne's concepts, saying: "...Hartshorne [contends]. ...God should be regarded as a living person, i.e., a personally ordered society of experience."  

Hartshorne has recently suggested a modification in that:

God is perhaps a "society of societies, a multiplicity of persons. ..." This revised view would mean that one cannot speak of God "now", but only of God "here-now", which would not be the same concrete reality as God "somewhere else now."  

Hartshorne describes God as "here and now" so that he may be present in all actual occasions given the lack of a universal "now." This concept of God "here and now" precludes God from being considered a single actual entity. If God is considered "here and now," he may remain compatible with relativity physics and still be thought of as encompassing all of reality. God may then be considered to be a society or multiplicity of all contemporaneous actual occasions.

11Ibid., p. 36.
12Ibid.
Although Hartshorne's concept of God as a society of contemporaneous actual occasions may solve some of the process inconsistencies with the theory of relative time flow, it raises another serious theological question. If each actual occasion is disjunctive, as relative time flow indicates and Hartshorne appears to concede, on what basis can one deny the charge of polytheism? Cannot each individual actual occasion be considered an individual process God? Actual occasions are actualized disjunctively throughout the universe. For each point of reference there is an individual actual occasion actualized. On what basis do we insist that these disjunctive actual occasions be incorporated into a single contemporaneous actual occasion? If all reality is bipolar, as process thought contends, then each actual entity could conceivably have its own primordial and consequent nature disjunctive from all other actual entities. By acknowledging that each actual occasion is only contemporaneous with all others, Hartshorne has left his concept of a societal God open to allegations of polytheism. If each actual entity is a disjunctive process God, no process theist can speak of a creative advance for there is no necessary, single, or superior God who will provide lures and thus some coordination for the universe as a system.

Another problem arises when we consider God as a society of actual entities. Hartshorne, just as other process thinkers, holds that a given actual entity is
partially determined by its own subjective aim and partially determined by the lure of God and previous events.13 Because each actual entity can be considered disjunctively from the rest of the universe as a system, problems arise when we consider the causation of individual actual entities. Hartshorne does not believe the universe was created ex nihilo but has always existed in one form or another.14 Therefore:

. . . The world has had no beginning; the universe thus becomes an actually infinite reality with all the paradoxicalities involved in such a conception.15

When we consider the issue of causation in the relative universe of the process metaphysic, each actual occasion becomes a disjunctive infinite regress with no explanation as to its initial cause.

After considering process concepts of universal and disjunctive actual occasions, we are left with two problematic choices. If one holds that God is a single actual entity inclusive of all that "is," such a concept will be held inconsistently with concepts of relativity physics and the spacetime continuum. Because there is no universal "now," there can be no universal actual entity that encompasses the entire system. If, on the other hand, we adopt the concept of God as a society of contemporaneous


14Craig, Charles Hartshorne, p. 108.

15Ibid.
actual entities other difficulties arise. Although Hartshorne's concept of God "here and now" allows for greater consistency with relative time flow (i.e. by avoiding the need for a universal "present"), the holder of this position possibly adopts a concept of polytheism and the problems of causation and infinite regress. Although process theism requires a God who is an actual entity, the available theistic concepts are either inconsistent with Einstein's physics or theologically and philosophically unacceptable.

The Isolation of Man

Another concept worth considering at this point involves an actual entity's ability to locate material objects, including other actual entities, under the Newtonian and Einsteinian systems. Given the old system of Newtonian physics, objects were simple to locate. For example, the location (i.e. distance and direction of a point of reference from the origin of the observer's reference frame) of OA could be given by the following equation:

\[ OA = \sqrt{x^2 + y^2 + z^2} \]

Equation 5

Although we have considered some of the ramifications of Einstein's concepts of relative time passage in previous
chapters, it is still important to remember that relative time progresses non-uniformly throughout the universe. In other words, for each point of reference time is relative. Therefore, Equation 5 is operational as long as one assumes that time passes at a smooth uniform rate throughout the universal system.

Equation 5 holds true as long as two observers share a unified time and thus exactly the same point of reference.

Instead of viewing objects in three dimensions, as did Newton, Einstein added a fourth dimension—relative time flow. His resulting equation for determining the location of an object in relative space is:

\[ OA = \sqrt{x^2 + y^2 + z^2 - (ct)^2} \]

Equation 6
This concept of considering space and time in an interrelationship, as denoted by Equation 6, gives objects a location in time as well as space. It is important to bear in mind that time flow changes with the observer's point of reference. As the relative time varies, so does the exact location of objects in relative space.

As long as the same point of reference remains constant for two observers, time will remain unified for those sharing that point. However, if the point of reference is varied, the passage of time will be varied. With the variation of time flows would come a variation in the observed location of physical objects.16 Einstein recognized that although the difference may remain imperceptible to the casual observer, object location will vary with each observer, because time passage will vary with each point of observation.

This variation in time progression and the corresponding problems with object location in relative space create further problems for the God of process theism. As previously mentioned, time varies with the reference point of the observer, and God is no exception to the rule. Each individual actual entity has his own unique point of reference and thus his own time frame.

Commensurate with the concept of relative reference frames is the notion that the location of physical objects along the spacetime continuum will also vary from observer to observer. Thus, while the fact that what observer A believes to be "there" is functionally correct, in actuality it is not the same "there" as perceived by B given his point of reference. Unfortunately, this relative variation in object location also holds true for the process God. It must be remembered that the process God is "in" time. Therefore, he never perceives actual entities or any other physical object to be in the exact location perceived by those entities. How can God exercise even limited control over a universe in which he cannot be certain of the location of its components? Man is thus cut off from God, for how can God truly know humanity when he is not sure of an individual's location, his corresponding actions, or other expressions of personality? The process God appears to be a God limited in his knowledge regarding creatures that currently exist--limited by the concepts of the relative spacetime continuum.
Even if God could overcome the problems presented by relativity physics and know man as he "is" at some universal $t_1$, man is still isolated from the process God. Albert Einstein believed that the concept of a personal God had serious shortcomings. He wrote:

In their struggle for the ethical good, teachers of religion must have the stature to give up the doctrine of a personal God...in their labors, they will have to avail themselves of those forces which are capable of cultivating the good, the true, and the beautiful in humanity itself.\(^\text{17}\)

To an extent, this is what process theism renders. While process concepts stress the completeness of each AO, they render the creator impersonal.

However, such an impersonal God raises serious questions about the personality of man and his ability to communicate with the divine. Francis Schaeffer raises this question by asking: If God is ultimately impersonal, what accounts for the existence of man's personality? He writes:

No one has ever demonstrated how time plus chance, beginning with an impersonal, can produce the needed complexity of the universe, let alone the personality of man.\(^\text{18}\)

Process theism has no valid explanation for the existence of man's unique, individual personality. If process theism wishes to maintain the existence of a real individual


\(^{18}\)Francis Schaeffer, He Is There and He Is Not Silent, Wheaton: Tyndale House, 1972), p. 92.
personality, communication problems between the personal and the impersonal result. It may be asked: How can meaningful communication between the personal and the impersonal take place? According to Schaeffer, it cannot. While biblical theism has held that God and man are separated by the infinity and finiteness of their respective spheres, both share common ground. Both are personal.¹⁹ This shared personality allows meaningful communication in the Christian context. Schaeffer writes:

...suppose that He made something limited, but on his own wavelength—let's say in His own image—then one would have both an infinite, non-created Personal and a limited, created personal. On this presupposition, the personality of the limited, created personal would be explained.²⁰

He continues by saying:

Within this framework, why would it be unthinkable that a non-created Personal should communicate with the created personal in verbal form, if the non-created Personal made the created personal a language communicating being? And we are language communicating beings.²¹

Unlike biblical Christian theism, process theism offers an impersonal mind of God.²² How can the personal mind of man communicate with the impersonal mind of the process God? Without shared personality, it appears there


²⁰Francis Schaeffer, He Is There and He Is Not Silent (Wheaton: Tyndale House, 1972), p. 92.

²¹Ibid., p. 95.

can be no meaningful communication between man and the divine. The mind of the process man is left isolated from the impersonal process God.

The Decay of God

God in his consequent nature is considered to be in time. The ramifications of a God "in" time are problematic. A problem worth our consideration involves God's relationship to available energy in the universe.

The availability of energy is very important to the God of process theology because all of reality is thought to "become" more complex as events are actualized. Although we understand that the total amount of energy and mass in the relative universe remains constant (i.e. $E=mc^2$), we realize that the ratio of potential energy (PE) to kinetic energy (KE) is in constant flux. Isaac Asimov says of this relationship:

Given at two different potential levels, it is common experience of mankind to observe that the energy will flow from one potential level (which we will call the higher) to another (which we will call the lower) and never vice versa (unless it is pushed). 23

This relationship between KE and PE causes some problems for the God of process theology, for the amount of kinetic energy required to produce actual occasions of perpetually increasing complexity is decreasing. As we observe the

physical universe, God's consequent nature--his body--we realize it is "running down" to eventual heat death.24

The laws of thermodynamics play an important role in defining the relationships between states of energy in the relative universe. More specifically, the second law of thermodynamics recognizes that all that exists is digressing toward a random state of universal entropy. The law holds that:

A system having specified allowed states and an upper bound in volume can reach from any given state a stable state and leave no effect on the environment.25

If the universe is finite and closed, then the God of process theism, being "in" time, will be subject to all the effects of the second law of thermodynamics.

Given the tendency of that which "is" to move toward entropy, some interesting ramifications result for our universe and anything that is in it. Astronomer Paul Davis speaks of the fate of the universe when he says:

There can be few conclusions in science more profound than the prediction that the universe is doomed, but the predication on which the prediction is founded—the second law of thermodynamics—is the most fundamental regulator of natural activity known to mankind. Its application determines the evolution and fate of systems as diverse as boxes of gas, sand castles, human beings, stars—and the cosmos. The inexorable progress towards equilibrium and maximum entropy is built into the behavior of systems


everything; all around us we see the universe slowly but surely running down. . . . Unless, therefore, our whole understanding of matter and energy is misconceived, the inevitability of the end of the world is written into the laws of nature.26

At the point where maximum entropy is reached and equilibrium is attained, universal heat death will occur and motion and activity will cease.

The realization of ultimate universal heat death leads one to ask how God will continue to see his increasingly complex lures actualized in a world of absolute entropy. As we approach entropy and the end of KE in the universe as a system, it will become increasingly difficult for God to experience actualized possibilities of perpetually increasing complexity. In fact, just the opposite will occur, for God will be unable to stop events from becoming perpetually less complex. When the universe approaches total entropy, it will be impossible for God to provide himself with novel and richer experiences unless, according to Asimov, he gives the universal system a "push." Once heat death occurs, the process may continue, but there may be no novel experiences for God to incorporate into his divine memory. At such a point along the spacetime continuum, God may look back in fond rememberance of that which has occurred, but he may have no hope of ever experiencing such complexity in the future. The closer the universe moves toward equilibrium, the greater the

26Davis, The Runaway Universe, p. 159.
reduction in the complexity of that which is divinely prehended. While it is acknowledged that our knowledge of the future is finite and that there may be distant actualizations of greater complexities than we currently realize, all empirical evidence to date shows this not to be the case. Any optimism regarding future increased complexity is an exercise of blind faith in light of relativity physics and the second law of thermodynamics. It may, therefore, be said that God will never experience greater complexity of occasions than he is experiencing right "now."

The problem for the process God as he relates to the second law of thermodynamics is that he is "in" time. Sadly, the God of process thought is trapped in the decay of the physical universe. If his physical pole is the universe, where could the necessary "push" or burst of rejuvenating energy originate? Whitehead states the process predicament well when he says: "God is all that he could be; he cannot produce effects outside of himself."27 If our universe is a closed system and God is "in" it, the necessary "push" cannot come from the consequent nature of God for it is the universe itself. The primordial nature, God's mind, has not been shown to be anything more than a reservoir for pure possibilities. We must, therefore, conclude that the God of process theology is trapped,

without hope, in a decaying universe—a universe that will never achieve greater complexity than there is "right now," a universe that will never achieve God's purposes through the creative advance.

Although we have considered some of the ramifications of a decaying universe, there are other theories regarding the fate of reality that deserve our consideration. Given the current expansion of the universe and its relationship to the second law of thermodynamics, there are but three possibilities for the fate of the universal system. The first, as previously considered, is that left unaffected the universe will slowly expand and succumb to the laws of thermodynamics and die.28 However, this concept does not allow for the process notion of an endlessly complex spacetime continuum. The second possibility is that the universe will remain in a "steady state" and be perpetually injected with new matter.29 While this theory offers an endless universe, it contradicts the process notion of a closed universal system. Remember, the process God works with that which has been and always will be. The closed process universe leaves no room for the perpetual introduction of new "stuff." The third possibility is that the universe will continue to expand and contract ad infinitum.30 Gruenler addresses this concept when he says:

29Ibid.
30Ibid.
Evolutionary advance and entropy can be reconciled only in a pulsating view of the universe, or in an endless sine wave of peaks and valleys.31

At first glance, this concept of an expanding-contracting universe appears to offer the possibility of a system that may continue to be reorganized from cosmic epoch to cosmic epoch. Such a perpetual system would supply God with increasingly novel experiences. Thus, the universe may be postulated to exist in an endless cycle of expansion and contraction. Such a universe would have an endless past and an endless future. In critiquing such a notion, Royce Gruenler writes:

While Hartshorne, against Whitehead, argues that new possibilities arise with new actualities, nonetheless, with the ebb and flow of finite spacetime stuff he cannot consistently argue for an infinite number of combinations, although he must if he is not going to fall into the logical absurdity that if the past extends infinitely backward, then...we have experienced the present and the future, as well as the past, endless times before, and every other actuality as well. I simply do not know what it means to say that the world process of new creativity extends infinitely before us, if it extends infinitely behind us in actual form.32

He concludes by saying:

What cannot be entertained logically in a finite universe composed of finite and limited components is an infinitely expanding configuration that affords everlasting novel creativity.33

Therefore, if the process theologian insists on an

32 Gruenler, The Inexhaustible God, p. 111.
33 Ibid., p. 112.
expanding-contracting universe in order to preserve the perpetuation of the universe, he must give up true novelty and freedom. It is clear that that which is experienced and will continue to be experienced an infinite number of times destroys all hope of novelty. Freedom also becomes meaningless, for the choices an actual entity has made he will continue to make an infinite number of times—he cannot do otherwise. It therefore appears that the God of process thought is confined to a universe of decay, a universe that is not truly closed, and thus inconsistent with the process metaphysic, or a universe without true novelty and freedom.

Although it appears that the process God is confined to a universe of decay, all previous discussion presupposed the fact that God desires to bring about greater complexity in the universe. If, however, God's lures are currently being actualized more or less as he intends, then one must conclude that God is "willing" the decay of the universe. Although certain theologians may like to contend that God's initial aim is toward greater complexity of experience, all empirical evidence per the second law of thermodynamics seems to indicate that God is luring less complex events into actuality. Such a lure will ultimately result in the universal equilibrium of the system and actual occasion of ultimate simplicity. The process God then bears the ultimate responsibility for the de-evolution of the universe or at least our contempt for his apparent inability to halt it.
In light of the second law of thermodynamics, it must be realized that as the universe continues to decay so does God's ability to achieve complex experiences. Paul Davis writes of total entropy when he says: "The universe we know will be lost." 34 He goes on to write:

What then is our present perspective? Very few scientists are prepared to accept the bizarre proposition of cosmic time reversal. The steady state theory, with its compelling feature of endless evolution, has crumbled under the pressure of astronomical observation. The cyclic world of death and rebirth is still a speculative outgrowth of our ignorance about the nature of spacetime singularities. The unacceptable truth appears to be that the inexorable disintegration of the universe as we know it seems assured, the organization which sustains all ordered activity, from men to galaxies, is slowly but inevitably running down, and may even be overtaken by a total gravitational collapse into oblivion. 35

The question may then be asked: Is God's body, his consequent nature, the physical universe, dying? Yes. The life of the universe, the kinetic energy necessary to bring about increasingly complex actual occasions, is slowly but surely coming to an end.

34Davis. The Runaway Universe, p. 159.
35Ibid., p. 197.
It has been contended by process thinkers that if God is not "in" time then he cannot be anywhere at all. However, after considering the theological concepts espoused by the followers of process theism, several difficulties involving God's ability to exist in time were noted. Given our understanding of simultaneity and the spacetime continuum, we must conclude that a God who is in time may be more philosophically problematic than a God who is thought to be "outside" the temporal sphere. For this reason, a re-examination of the concepts and ramifications of a God outside of time may prove profitable. It is to this task that we now direct our efforts.

Temporality and Eternity

Even for process theism, more than one mode of existence is admitted. The two modes are the temporal and the eternal. Clearly, that which is in time involves concepts of past, present, and future. Process theology recognizes that all actual occasions are, to some extent, temporal for they are becoming (future), are (present), or were (past). The relative spacetime continuum is a line on which the successive duration of temporal events transpire. However, process theism also recognizes the existence of the eternal sphere of reality as is evidenced by the mind
of God and all the eternal objects it contains. Arthur C. Custance declares that: "...time and eternity are different categories of experience." It is this acknowledgement of the temporal and eternal spheres of reality which may solve process inconsistencies and allow God to work in time without the difficulties inherent with actually being "in" time himself.

As temporal entities, we are mindful of the past and anticipate the future. Both of these concepts, the past (i.e., that which has already been actualized) and the future (i.e., that which will be actualized), are built around some notion of a conscious "present." It must be remembered, however, that for temporal entities there can be no universal simultaneous present. Given Einstein's relativity theories, one must conclude that there are as many presents as there are points of reference. Therefore, it would be incorrect to think that there is one single point of reference that will allow us to talk about an "at once" for the universal system. Although there is no temporal simultaneity there is a temporal "present" for each reference frame to which an observer is confined, for "every conscious temporal observer has an undeniable, indispensable sense of the absolute present, [the] now." William James comments about our temporal sense of the present when he says:


The duration, thus steadily perceived, is hardly more than the 'specious present'. Its content is in constant flux, events dawning into its forward end as fast as they fade out of its rearward one, and each of them changing its time-coefficient from 'not yet,' or 'not quite yet,' to 'just gone,' or 'gone' as it passes by. Meanwhile, the specious present, the intuited duration, stands permanent, like the rainbow on the waterfall, with its own quality unchanged by the events that stream through it.\(^3\)

For each temporal entity, then, there is some concept of a "present" corresponding to the entity's personal time frame. It is this concept of a present that will provide a basis for eternal-temporal interaction.

Throughout the history of philosophy there has been a great debate about what eternity actually is. Some may view eternity as they view numerical infinity. Again, Custance considers this relationship when he writes:

> The really important thing to notice is that time stands in the same relation to eternity, in one sense, as a large number does to infinity. There is a sense in which infinity includes a very large number, yet it is quite fundamentally different and independent of it. And by analogy, eternity includes time and yet is fundamentally something other. The reduction of time until it gets smaller and smaller is still not eternity; nor do we reach eternity by an extension of time to great length.\(^4\)

What eternity entails is not merely an infinite duration of time as implied in the process concept of the divine primordial nature. Rather:

\[\ldots\text{eternity implies that there is one objective reality that contains two modes of existence in which two different sorts of duration are}\]
measured by two irreducibly different sorts of measure: time and eternity.\textsuperscript{5}

Our experience as temporal entities of temporal duration gives us a sense of permanence which is nothing but illusion as we examine the nature of time. According to Eleonore Stump and Norman Kretzmann, the existence of a typical temporal entity:

\begin{quote}
.. is spread over years of the past, through the present, and into the future; but the past is not and the future is not, and the present must be understood to be no time at all, a durationless instant, a mere point at which the past is continuous with the future.\textsuperscript{6}
\end{quote}

Duration, for the temporal entity, does not actually exist.

If duration does not actually exist for temporal entities, genuine duration must, then, be a fully realized duration. It must be duration "none of which is gone and none of which is yet to come."\textsuperscript{7} Therefore, such duration must be atemporal "such that nothing future is absent from it and nothing past has flowed away."\textsuperscript{8} An eternal entity that experiences true duration must exist in a mode of atemporality or "outside" of time. There are no sequence of events which make up the duration for there is no past and no future, only "presentness."\textsuperscript{9} This atemporal presentness is unlike the temporal present in two ways.

\textsuperscript{5}Stump, and Kretzmann, "Eternity," p. 443.

\textsuperscript{6}Ibid., pp. 444-445.

\textsuperscript{7}Ibid., p. 445.

\textsuperscript{8}Ibid.

\textsuperscript{9}Ibid.
First, because atemporal presentness involves true duration, the atemporal present is not instantaneous. Rather, the eternal present is infinitely extended pastless, futureless, duration. Second, a concept of the present that is not flanked by pastness or futureness is non-temporal. One may, therefore, conclude that if anything exists in the eternal present, its existence is fully realized, all present at once.10

If an entity existed in a non-sequential durational eternity, the question may then be asked: Is such a being really alive since life, as known by temporal entities, is a constant sequence of becoming (i.e. learning, growing)? Life is generally associated with processes such as those espoused by process theism. All such changes denote temporality allowing one to infer that an atemporal entity cannot be "alive" because life implies processes which, in turn, imply temporality. However, what we mean when we speak of a being who is exclusively in the mode of eternal existence and yet remains alive is a concept of this being as "mind."11 Considered as atemporal, this being's mind cannot deliberate, plan ahead, or anticipate, for such activities involve a temporal process. Rather, an atemporal mind can be said to "know" in the eternal present.12 Although this atemporal being's mind may be

11Ibid., p. 446.
12Ibid.
disembodied, and thus unable to perceive through normal senses, there is nothing about atemporality or incorporeity that would rule out this being's "awareness" of the temporal sphere of reality. The notion of an atemporal mind is not inherently absurd and neither is the concept of atemporal life. It may be reasonably held that a being which has a mind, atemporal or temporal, is alive. Therefore, an atemporal being with a mind aware of the eternal present is alive.13

Because eternal entities and actual entities exist in two separate modes of reality there must be some factor common to the experience of both spheres which would allow for some interaction. The factor which allows for interrelationship between the two spheres is a concept of simultaneity of the "present" common to both modes of existence. Royce Gruenler refers to this "present" when he writes:

The early Christians were given to see that while there is a created temporal sequence for us [as temporal creatures] and for the incarnate Christ, there is an Absolute Presence that transcends the niceties of our human verbal tenses and the velocity of light. For us and for God in his incarnate self-limitation in Christ and in his imminent presence in the experience of the sparrow...there is a sequential time and relative elsewhere, but not for God in his absolute suprapresence.14

Thus, God in his absolute suprapresence must share some common present with temporal entities. Although there is

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13Ibid., p. 447.

no simultaneity of events in the temporal mode as demonstrated by the theories of Einstein, there can be simultaneity between the eternal mode and each point of reference in the temporal mode if the eternal entity exercises suprapresence. Relativity physics poses no problem for such an eternal-temporal relationship. The actual concept which allows for some form of simultaneity between the two modes is that of the "present." The temporal entity also has a present, for all that "is" is encompassed by the past and the future. However, Gruenler reminds us that:

... the future is equally present to God [in his atemporal mode of existence] with the present and the past in his absolute elsewhere. Only in the relative and subordinate realm of our redemptive history does "future" take on any meaning.  

Therefore, if we are going to talk about a basis for an eternal-temporal relationship, we must speak of interaction at one and the same present rather than one and the same time.  

Because both modes of existence share one and the same present, an interrelationship is possible. Stump and Kretzmann consider this relationship when they write:

But if anything exists eternally, its existence, although infinitely extended, is fully realized, all present at once. Thus the entire life of any eternal entity is coexistent with any temporal entity at any point at which that temporal entity exists. From a temporal standpoint, the present is (eternally-temporally) simultaneous with the

15Ibid., p. 99.
whole infinite extent of an eternal entity's life. From the standpoint of eternity, every time is present, co-occurrent with the whole of infinite atemporal duration.\textsuperscript{17}

Although two modes of existence are actual, the realization of an eternal-temporal (ET) simultaneity provides a common present through which the spheres of the eternal and temporal may interface.

As we consider the spheres of eternity and temporality, we must realize that, although they share the same present, they are two modes of very different existence. The temporal is actually a durationless instant surrounded by what has been and what will become. True duration is to be found in eternity for only in that mode does nothing become or transpire, all "is." While ET-simultaneity provides the possibility for the interaction between these two different spheres of reality the question still remains: Could an eternal being affect that which occurs in the temporal realm? It is to this question that we now devote our full consideration.

The Eternal's Work in Time

Although one may acknowledge some concept of a mutual present shared by the eternal and temporal spheres, there is still the contention that an eternal, atemporal entity cannot affect events in the temporal world. Although the eternal being may share a simultaneous present with the

\textsuperscript{17}\textsuperscript{Ibid.}, p. 441.
temporal mode, can such a being, in its atemporality, affect temporal events? Because the eternal and temporal spheres are so drastically different, it may be suggested that any actual interaction is impossible. While there may be reasons for believing that an eternal entity cannot affect temporal reality, most stem from misconceptions about the nature of the two modes of existence. We shall subsequently consider three such misconceptions regarding the spheres of eternity and temporality and the relationship between the two.

First, it may be contended that an eternal entity, confined to the atemporal mode of existence, cannot act in the temporal mode because of its drastic difference from the eternal realm. Stump and Kretzmann offer an example of such an objection when they say:

If [an atemporal being]... is timeless, he could not have produced an event [at a specific point in time]. This would require... the being's creative activity... to have a position in time... but a claim that [an atemporal being] timelessly provided a temporal event is absurd.

Clearly, whatever is produced or created atemporally must begin to exist at some point in time if it is going to effect the temporal mode of reality. The concept of producing an effect in time requires some form of action on the part of the producer. In this case, it is contended that an atemporal entity has produced a temporal event and

18 Ibid., p. 447.
19 Ibid., p. 448.
an entity's action is an event in the entity's life. However, there can be no temporal event in the life of an atemporal entity. Therefore, the argument concludes that no atemporal entity can act to bring about a temporal event.

Although this argument appears persuasive upon first consideration, Eleonore Stump demonstrates the subtle confusion inherent in this contention. Stump states that a distinction must be drawn between: 1) Acting in such a way that the action itself can be located in time, and 2) Acting in such a way that the effect can be located in time. Clearly, 1. is impossible, for an eternal entity's life is one extensive "now," thus precluding a temporal action in an atemporal life. However, 2. is not inconsistent with an eternal entity's atemporal existence. We may say, therefore, that an atemporal being may will something in the eternal mode, and it is not inconsistent to think it will have effects in the temporal sphere. For example, it may be atemporally willed that Christ rise from the dead but the effect was a literal resurrection in spacetime history. Although the action (i.e. the "willing") of an atemporal being cannot be located along the spacetime continuum, the effects of an atemporal action can be. Stump and Kretzmann go on to argue that:

20 Ibid.

21 Ibid.
Even though [the eternal entity's] actions cannot be located in time, [the entity] can bring about effects in time unless doing so is logically impossible for him. 22 Such an atemporal being can act atemporally but effect the temporal present through ET-simultaneity. An eternal entity's actions may thus remain eternal while that which results from his actions can be located in temporal reality. Although an atemporal being may be considered "outside" of time, his desires can still be realized "in" time without problems posed by relativity and temporal simultaneity.

Second, it may be argued that the nature of a temporal action is such that the agent itself must be temporal. In other words, an act which has its effects in time requires an actor who is also in time. Because there are two separate modes of existence, an entity in one mode cannot act in the other mode unless that entity is part of, or "in," that mode of reality. 23 Therefore, if an atemporal being becomes exclusively temporal, he encounters all the restrictions of relativity physics.

Stump and Kretzmann consider the problems involved when a temporal effect is claimed to have an atemporal origin. Briefly stated, the contended inconsistency is that: 1) if a being is eternal, he could not have produced temporal effects "yesterday," and 2) the claim that an

22Ibid.

atemporal being atemporally produces temporal objects is absurd. However, Stump points out that both of these propositions are ambiguous because of the scope that can be assigned to the terms "yesterday" and "atemporally." She would contend that the propositions should be read: 1) If a being is atemporal, he cannot yesterday have brought it about that a temporal object came into existence, and 2) It is absurd to claim that an atemporal being brings it about that a temporal object came into existence atemporally. These propositions are true but do not support the position that an atemporal being must exist temporally in order to produce temporal effects. For example, proposition 1. is correct because there is no "yesterday" in the life of an atemporal being. However, such a statement does not preclude his effect in time for temporality has "yesterdays." Proposition 2. is also correct for no temporal object can be brought into being in the sphere of atemporality. This, however, should not preclude an atemporal agent from bringing a temporal object into being in the temporal realm per ET-simultaneity.

The third contention is that "an atemporal entity could not preserve anything temporal. . .because to do so would require temporal duration on the part of the preserver." Again, if an atemporal being is not in time,

24Ibid.

25Ibid.

so the argument runs, he cannot preserve or sustain that which is in time. All that "is" can only be sustained by that which is subject to time for that which is "outside" of time can have no affect on that which is temporal.

While Stump and Kretzmann admit that actions and effects are not necessarily simultaneous, they contend that:

If we adopt a co-occurrence as a temporally justifiable condition on causal connection between an action and its effect, we can point out that any and every action of an eternal entity is ET-simultaneous with any temporal effect ascribed to it. And, since it would simply beg the question to insist that only temporal simultaneity between an action and its effect can satisfy this necessary condition, we see no reason for denying of an eternal, omnipotent entity its temporal act of willing could bring it about that a temporal object came into existence on "yesterday's date."27

And that:

If it is not impossible for an omnipotent, eternal entity to act in eternity [by atemporally willing] in such a way as to bring it about that a temporal entity begins to exist at a particular time, it is not impossible for an omnipotent eternal entity to act in eternity [by atemporally willing] in such a way that a temporal entity continues to exist during a particular temporal interval.28

Because of the existence of ET-simultaneity between the eternal and temporal modes of reality, that which is atemporal is not precluded from sustaining that which exists in the temporal mode.

27Ibid., p. 450.
28Ibid.
Once the atemporal being has performed a work inside the temporal realms, the normal physical processes of temporality take over. The atemporal act is thus inter-woven with the flow of the spacetime continuum. C. S. Lewis addresses the concept when he says:

If God annihilates or creates or deflects a unit of matter, He has created a new situation at that point. Immediately all nature domiciles this new situation, makes it at home in her realm, adapts all other events to it. It finds itself conforming to all the laws.29

He goes on to point out that:

If events ever come in from beyond nature altogether [i.e. an atemporal will affects the temporal sphere], she will be no more incommoded by them. Be sure she will rush to the point where she is invaded. . . and there hasten to accommodate the newcomer. The moment it enters her realm it obeys her laws. . . . The divine art of miracle [i.e. the eternal entity affecting the temporal realm] is not an art of suspending the pattern to which events conform but of feeding new events into that pattern.30

It is not, therefore, inconsistent to contend that the atemporal can affect temporal events without violating the "laws" of the temporal mode of reality.

Although one may recognize the existence of two modes of reality, the temporal and the eternal, the fact that they are separate does not necessarily prohibit atemporal actions from having temporal effects. The fact that there is a "present" in both modes allows eternal-temporal interrelationship to exist. Because of ET-simultaneity, it

30Ibid., p. 61.
is not incoherent to conceive of an atemporal being acting atemporally with temporal effects, remaining in the atemporal sphere while bringing about temporal results, and sustaining that which is temporal although the sustainer remains eternal. An atemporal being can produce temporal effects without encountering the difficulties inherent with operating in the universe of relativity physics.

Atemporality: The Process God's Answer

Many of the problems of process theism revolve around the notion of God's being "in" time. The universe is thought to be God's physical pole thus allowing God to prehend the world as the world prehends God. Process thinkers also insist that life must involve a process of perpetual becoming and that God is not precluded from this requirement. God, then, is in a constant process of "becoming" along with every other created fact and is "involved with all creation and temporality."\(^3\) Clearly, the process God is subject to change which is a facet of temporality. Therefore, God is not exclusively atemporally primordial, making him subject to the effects of time progression. The God of process theism is not eternal, a term denoting atemporality, but rather "everlasting" denoting an unbroken succession of temporal

Perhaps it would be beneficial to consider what eternity is not. According to Arthur C. Custance:

The theory of relativity did not strictly concern itself with the world in which time was nonexistent, but rather with a world in which time is relative. The theory of relativity perse, therefore, is not concerned with eternity at all. . . . There is neither measured nor experienced relativity of time in a purely spiritual world, because time belongs to the physical order.33

It is because God is part of the temporal process that problems with relativity physics and simultaneity occur—problems that could be resolved if he were truly eternal.

Because God does have a consequent nature and is considered "in" time, he is subject to the second law of thermodynamics. As the universe digresses toward ultimate entropy, so must God's consequent nature. The problem of God's physical decay could be avoided, however, if God were an exclusively atemporal entity thus precluding him from the effects of temporality. As an atemporal entity, God would be in a position to provide the life sustaining "push" the universe needs to advance into greater complexity. The difficulty with such a view is that the concept of the relationship between God's physical and mental poles provides the basis for the process


33Arthur C. Custance, Time and Eternity, p. 38.
metaphysic. Although God's atemporality would resolve many of process theism's problems with temporality and relativity theories, God cannot be removed from physical reality for his physical pole is conceived to be all that "is." Therefore, the God of process theism is doomed to suffer the consequences of the second law of thermodynamics.

Also previously considered were the problems of polytheism when God is thought of as a society of actual occasions. Because there are as many temporal reference frames as there are points of reference, and thus a multiplicity of contemporaneous actual occasions, we cannot speak of God as a single, universal A0. There are myriads of transpiring actual occasions and no basis, aside from "blind faith", for believing they are all part of one organism.

Again, this problem could be resolved if the process God could be considered to be atemporal. If God were eternal, all events which comprise his existence could be considered to be simultaneous—one eternal "now." As long as the process God is forced to bear the effects of relative temporality there can be no simultaneity of experience that would allow God to be called "the universal actual occasion."

A problem also arises when we remember that God cannot supply uniform pure possibilities for the universe as a

system. Because spacetime does not progress at a uniform rate throughout the universe, God must supply each actual occasion with a lure as it is actualized disjunctive from every other AO. The process God cannot provide a pure possibility for the entire universal system because the entire system is not simultaneously actualized. God cannot be said to effectively lure the entire system as a unit.

However, if God were atemporal he could be ET-simultaneous with every point of reference and thus every event in the universe, as it is actualized. The process God would then be able to effectively lure the universe as a unit although each temporal event is non-simultaneously actualized. The ET-simultaneous relationship between the temporal and eternal modes would allow God to effectively lure the physical universe as a system while leaving the concepts of relativity physics in tact.

Not only did we previously conclude that God could not effectively lure the universe as a system, we also determined that his lures can never result in ultimate good. Because there is no simultaneity in the temporal universe, God can never know when one portion of the universe will reach ultimate good before the others.

Once again, if God were atemporal he could properly coordinate the advance of the universe and would know when the universe, as a unit, reaches ultimate good (even if it is only for that specific cosmic epoch) because he would be ET-simultaneous with every point of reference in the
system. As an eternal entity, God could coordinate the universal advance and realize when the system reached some state of ultimate good without violating the concepts of relative temporality.

After considering the ramifications of a God "outside" of time, one must recognize that such a concept offers a resolution to many of the problems raised by notions of a deity "in" time. An exclusively eternal process God would overcome the effects of temporal decay, could be considered "one" instead of the disjunctive "many," could provide effective lures and a greater degree of control to the universal system, and could realize some ultimate good for each cosmic epoch. The choice, then, is between making God exclusively atemporal, and thus make God inconsistent with the process metaphysic, or leave God "in" time rendering him inconsistent with relative temporality. Clearly, each choice is unacceptable prompting one to reconsider the merits of the theological concepts of classical theism and its eternal God.

The Eternal God

The God who is needed to control all relative spaces and times must be a being who is outside of temporality. Such a God cannot be the God of process theism for such an atemporal being would contradict the metaphysic upon which the theology rests. The divine characteristic of immutable attributes is implied in atemporality which would completely contradict the process concept of a God who is
perpetually "growing." Such a requirement for divine atemporality, in light of relative time theories, calls for a re-evaluation of the attributes of the eternal God of classical theism—a God who can affect the temporal sphere without being adversely affected by it.

Let us first turn our attention to God's atemporal omniscience or knowledge of the past, present, and future. The process theist would contend that the future cannot be known because it is contingent on the prehensions of actual occasions and is not yet actual. The God of classical theism may also be held to be unknowledgeable of contingent future events, not because God is limited in his knowledge but because there is no "future" events to an eternal being—all is present. Every temporal event is ET-simultaneous with God's present state of awareness—God cannot atemporally foreknow anything. Rather, such an entity knows all temporal events:

including those which are future with respect to our current temporal view point; but because the times at which those future events will be present events are ET-simultaneous with the whole of eternity, an omniscient eternal entity is aware of them as they are present.35

Stump further illustrates this concept:

For us the future is not yet actual. But God's eternal present is simultaneous with our temporal present and with the future when the future is actual. And therefore the future is of course not present to us, it is present to God. Think of a line on a paper in front of you and imagine


36Ibid., pp. 453-454.
four points on the line: A, B, C, D— in that order. Imagine that these points are [perceiving entities] although two-dimensional. Then A will perceive B but not C, and B will perceive A and C but not D, and so on. It will seem to these creatures a law of the universe that one can perceive no more than a point on either side of one. You, however, being in a richer mode of existence, can perceive all these points at once; and nothing in your ability to do so undermines the reality or the ordering of the points, although your mode of existence and cognition may be almost unthinkable to them. Something along these lines seems to me to be analogous—imperfect no doubt—in space to the state of God's existence and knowledge with regard to temporal creatures in time.37

God, then, can be said to be omniscient for all which was, is, and is to come, is in his eternal present.

The question may then be asked: If all that is temporally past, present, and future, is eternally present, can God know what time it is? According to Kretzmann and Stump, yes. Does an atemporal God know what is actually happening inside temporal reality? Again, yes, for:

The whole of eternity is ET-simultaneous with each temporal event as it is actually happening; the only way in which an eternal entity can be aware of any temporal event is to be aware of it as it is actually happening.38

Therefore, God can be said to be outside of temporality, know all temporal events as present, and still be able to know the temporal present as it actually occurs. Even if relative temporality is operational, God knows all temporal events simultaneously with their occurrence, regardless of the event's relative time frame.


Because atemporal duration is "none of which is absent or flowed away," God must be considered omniscient. Unlike process theism, classical theism's eternal God is not one who is growing, learning, and becoming, but is, rather, the "I Am"—self existent, immutable being. God's name "I Am":

...is not a description of God but simply a declaration of His self-existence, and His eternal changelessness; a reminder to mankind that He is life Himself, and that what He is now, He is eternally.39

Therefore:

The first and fundamental difference between the Creator and the creatures is that they are mutable and their natures admit change, whereas God is immutable and can never cease to be what He is.40

The atemporal God of classical theism is not subject to the adverse effects of relative temporality but remains complete in his knowledge and character "outside" the sphere of time.

One last issue to consider is whether the atemporal God of classical theism can operate within the realms of relative temporality. Because God is ET-simultaneous with every event that is actual, there is no difficulty understanding how God could locate physical objects along the relative spacetime continuum. God could, for example, locate and direct a star "in" the relative spacetime continuum to be a guide for the wisemen as they traveled to


40Ibid., p. 67.
see the Messiah. It is possible for an eternal God to locate and coordinate physical objects in a relative reference frame. It is only when God is outside of time that he has the ability to act and direct physical objects inside the sphere of relative temporality.

Although God can direct physical matter in temporality, must God's actions always conform to the theories of relativity? If, for example, the classical God atemporally willed that a physical object be accelerated past the speed of light could it be done? According to Einstein, such an acceleration could not occur given the velocity restrictions placed upon physical matter. Does this mean that the laws of the relative universe are superior to the will of the eternal God? The answer is no.

According to Lewis, there are three concepts of the laws of nature in their relationship to temporal-eternal interaction. The first position considers the laws to be brute facts. We know nature behaves this way or that but cannot say why. However, this concept gives no assurance against the miraculous for there is no assurance that natural laws will be obeyed tomorrow. According to Lewis, if we don't know why something has happened, there is no reason to believe that it could not be otherwise, and therefore, "... have no certainty that it might not someday be otherwise." 

41Lewis, Miracles, p. 56.
42Ibid., p. 57.
Another possibility is that the laws of nature are merely an application of the laws of averages. Under this position, the events of nature are thought to be random and lawless but the average behavior of the occasions can be determined. However, expectations based on the laws of averages work only if temporal natural events remain undoctored by a God willing in the eternal realm. The question of whether the temporal laws of nature are affected by the eternal realm is just the question of whether nature is being doctored. Such a position begs the question.

The third view, contends Lewis, is somewhat more complex for it states that the laws of nature are necessary truths. The laws merely hold that "...every event is itself and not something different." However, if you recognize the existence of a temporal, physical law, such a recognition allows you to more easily determine when the supernatural occurs. According to Lewis:

\[\ldots\text{no one knows better than a scientist that } AB \text{ cannot yield the same result as } A. \text{ The necessary truth of the laws, far from making it impossible that miracles [the operation of the eternal in the temporal realm] should occur makes it certain that if the supernatural is operating they must occur. For if the natural situation by itself, and the natural situation plus something else, yielded the same result, it would then be}\]

\[\text{44Ibid., p. 58.}\]

\[\text{45Ibid., p. 57.}\]

\[\text{46Ibid.}\]
that we should be faced with a lawless and unsystematic universe.47

It must be understood that the laws of nature do not cause events to transpire. They merely describe the way past events have occurred. C. S. Lewis says:

Thus in one sense the laws of nature cover the whole field of space and time; in another what they leave out is precisely the whole real universe—the incessant torrent of actual events which make up true history. That must come from somewhere else.48

It must be realized that the laws of nature are not actual laws that cannot be broken. Rather, they are merely descriptions of relationships within the temporal universe. C. S. Lewis speaks of this relationship when he says:

It is, therefore, inaccurate to define a miracle [i.e. the acceleration of a physical object beyond the velocity of light in apparent violation of relativity concepts] as something that breaks the laws of nature. It doesn't.49

He goes on to add that:

In the forward direction (i.e. during the time which follows [the miracles'] occurrence) it is interlocked with all nature just like any other event. Its peculiarity is that it is not in that way interlocked backwards, interlocked with the previous history of nature.50

Nature's laws are not "broken." Physical relationships are merely changed in relation to those which have previously been observed. The omnipotent God of classical theism

47Lewis, Miracles, pp. 59-60.
48Ibid., p. 60.
49Ibid., p. 60.
50Ibid., p. 61.
should be able to re-define these physical relationships as he wills.

It is clear, then, that what is required is a God above time and this is exactly what the theology of classical theism offers. Royce Gruenler writes:

Only the God who is above spacetime as its creator and sustainer who reveals himself to the mind of finite human beings can make it possible for them to comprehend him at all, and then only in explorable paradoxes having to do with the mystery of his being and time.51

While God is above time he is still active in the temporal world as he proceeds with his redemptive plan. Gruenler goes on to say that:

. . .bibilical revelation does so much more than metaphysical speculation by announcing that the God beyond time has taken on time redemptively in Jesus Christ. Hence the preferred perspective of time--God's time for us--is the karios of the cross. In the biblical process of redemption there is a past, present, and a future that is couched in terms of recitation, prophecy, and eschatology.52

The event of Christ's incarnation, his death, burial, and resurrection, provide temporal entities with the historical evidence necessary to establish the existence and credibility of the eternal God of Christian theism. The eternal, omnipotent, omniscient God of classical theism is the God of the physical universe and the relative temporal relationships which compose it.

52Ibid.
Conclusion

After considering the concepts of eternity, simultaneity, and relative temporality, we find that an atemporal deity is needed to coordinate the complexities of relative space and time. Although many of process theism's problematic positions could be resolved by adopting a concept of exclusive divine atemporality, such an adoption would contradict its basic metaphysical framework. The process God must be left "in" time to maintain metaphysical consistency but such a position contradicts Einstein's theories. Such a position of inherent inconsistency renders process theism intellectually unacceptable. It is time for process theologians to acknowledge these inconsistencies, abandon the metaphysics, and return to the eternal God of classical Christian theism.
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