

THE WHOLE BRAIN AS THE BASIS FOR THE ANALOGICAL EXPRESSION OF GOD

by James B. Ashbrook

Abstract. As human beings we inevitably try to explain our experience. In philosophical language, we deal with transcendent assertions and aspirations. The issue, then, is: how can we talk about what matters, given the structures inherent in language and basic to the way we are made? Instead of the philosophical category of Being, I advance a case for giving the human brain privileged status as an analogical expression of God, the symbol-concept of what matters most, and then suggest the illumination which can come with using that analogical expression, especially as that analogy connects us with the environment at the limbic level and constructs our world at the cerebral level.

Keywords: analogical expression; brain; empirical theology; epistemology; God; natural theology.

Because we are symbol-making and symbol-using beings and because we make sense of day-to-day experience through language, it is this same use of symbols by which we conceptualize and identify our experience of God. My purpose is theological in understanding this meaning-making brain—how we know and what we know. That is, how can we talk about God and the world in a credible way, a way which is conceptually plausible, empirically identifiable, and experientially meaningful?

From the Greeks through the Scholastics, including Thomas Aquinas, the use of analogy, analogy of being, and analogical thinking characterized the way believers talked about God (Burrell 1973). Evaluative words such as “good,” “powerful,” “wise”—and most of all,

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various senses of “to be”—led them to identify those ideas with God: God was good, powerful, wise—and most of all, God was Being. The orderly human mind was thus understood to reflect the eternal order in a way which was mathematically proportional, which meant in a way which was precise, objective, and permanent.

A shift came with the Reformers. They were skeptical about the ontological assumption that God could be known through the orderly structure of the universe. The philosophic method could never give true knowledge of God (Mondin 1968, 104). So they dismissed objective knowability, which meant rejecting the intelligibility of God in the universe.

For them the principle of knowing was clear: *sola fide*, by faith alone. Expressions of God were expressions of faith. The certainty of God came not with the exercise of reason, which they believed reflected the fallen state of humanity, but rather with a primal leap of faith beyond the ambiguity of life—“I believe *in spite of* doubt and *in spite of* my unrighteousness.” Such expressions could not be identified with sensory reality, even analogically. That is why the Reformers called into question every literal interpretation of nature.

Theologian Sallie McFague suggests that metaphorical God-talk is more Protestant and analogical God-talk is more Catholic (McFague 1982, 13). Metaphor assumes and expresses no necessary relationship between the things referred to, whereas analogy assumes and expresses some necessary similarity. The Catholic heritage has always allowed a place for natural theology along side of revealed theology (Tracy 1983). In contrast, the Protestant heritage has viewed such continuity between creation and Creator as heresy.

Despite crucial differences between a sacramental view of nature and a fallen view of nature, philosophical theologian Paul Tillich made the classic statement of a natural theology: God is not *a* being but *Being* itself (Tillich 1951, 235ff.). “[B]ecause everything participates in being-itself . . . [t]he *analogia entis* [analogy of being] gives us our only justification of speaking at all about God” (Tillich 1951, 239-40). As the Power of Being itself, God manifests God in every part of being.

Recently, Charles Hartshorne (1967), John Cobb (1965), and others have developed a natural theology based on the process metaphysics of Alfred North Whitehead. They have attempted to overcome limitations in the traditional worldview of the West (Young 1987). Specifically, that view includes the dualism of Plato, the substantialism based on Aristotle, the mechanism stemming from Isaac Newton, and the Cartesian disjuncture between mind and body. This newer view of God rejects such basic categories as “substance” and “being” for more event-oriented concepts such as “process,” “becoming,” and “relatedness.”

In Western thought there has been a division in our whole thinking about God. The understanding of “mind,” what more technically we call “cognition,” and what we know have been burdened with a division between the way things appear and the way things are. The conscious mind, with its two hemispheres, has distorted reality in the very process of interpreting reality (Oakley & Eames 1985). It has taken its observations as “the facts.” The left brain—the interpreter (Gazzaniga 1985)—has had the last word. This rational cognition was thought to mirror reality. Its concepts were merely the “internal representations of external reality” (Lakoff 1987, 370-73). Thus reality consisted of entities which shared or did not share essential and fixed properties.

In contrast, I advance a case for using the whole brain (and not just the left hemisphere) to understand divine being. The brain, or what I regard as the newer understanding of mind with its empirically identified components of cognition, makes more sense—and offers more support for belief and talking about God—than the older philosophical understanding of mind with its faculty of natural reason and its use of the category “Being.” I describe this newer view of mind, and then suggest how the brain illumines the contextual universe in which we live, what believers have meant by God as the ground and source of our being.

THE NEUROSCIENCES AND A NEW UNDERSTANDING OF MIND

The neurosciences are shifting our understanding of cognition from traditional objectivism—cognition as rational propositions—to cognition as experiential realism. Instead of the rational left hemisphere—the mind which observes, explains, and interprets—attention is now directed to the whole brain, to the whole mind.

In this expanded view of cognition, thought consists of the following features: first, it is embodied, which means it arises out of bodily experience and makes sense primarily in terms of bodily experience. The core of our conceptual systems is grounded directly in what we perceive, in bodily movement, in experience which is both physical and social; second, it is imaginative, which means that concepts go beyond literal mirroring of an external reality in that they employ “metaphor, metonym [that is, understanding the whole in terms of a part], and mental imagery”—all of which are more than we can see and feel; third, it possesses gestalt properties, an overall structure which is other than merely putting together atomistic conceptual building blocks according to general rules of association; and finally, it has an ecological structure which “depends on the overall structure of the conceptual system and on what the concepts mean.” Instead of mechanically manipulating abstract symbols, thought consists of our using cognitive

models (Lakoff 1987, xiv-xv), prototypical examples and exemplars which form the perceptual-imaginative construction of categories.

This evidence contradicts the form-fitting metaphysics of Western thought because people make sense of reality in many ways (Lakoff 1987, 119)—whether that be family relationships; colors; linguistic categories; biological groupings; or anger, lust, and rape (Lakoff 1987, 22-24, 24-30, 58-67, 118-21, 380-415). There is no such thing as “mind-free reality” (Lakoff 1987, 212). We make “things”—entities and categories—according to our pattern-making imagination.

Linguist Eleanor Rosch and her associates (Rosch & Lloyd 1978) have established that we organize knowledge primarily according to *cue validity*. Cue validity consists of two features: cognitive economy, or gaining as much information about the environment as possible with the least effort; and perceptual coherence, or perceiving the world as an intimately related structure of reliable information (Rosch 1978, 27-48). In contrast to the abstract and tangible levels, the basic level of knowledge maximizes both cue validity and category resemblance in terms of representative examples (exemplars), or prototypes.

This expanded view of the mind and how it works recognizes that there is no one way to frame a situation or define a category (Lakoff 1987, 200), especially the most abstract category, “God.” We organize what we know by means of idealized models, prototypical effects, best-fit examples of a category. In theological discourse these prototypical effects include metaphorical-analogical expressions, such as God’s body, or God as mother, lover, friend (McFague 1987). Because these exemplars possess only “a degree of prototypicality” (Lakoff 1987, 44), we are dealing with the world as we understand it and not with the “world as it is” apart from ourselves (Lakoff 1987, 212). Our metaphors, analogies, and models of God all come naturally from the human mind-brain making sense of its world.

Whereas rational cognition is anchored in the logical and the literal, natural cognition is centered in the bodily and the imaginative (Lakoff 1987, 370-73; Johnson 1987; see Gerhart & Russell 1984, 108-09). The traditional view of what is “natural” has been too narrow, based as it has been upon abstract and absolute principles (Rumelhart et al. 1986; Holyoak 1987). Our current view of what is natural (Gardner 1985) calls for a wider cognitivism, a view informed by the empirical.¹

A neurotheological approach to God-talk (Ashbrook 1984a) stays with the evidence of scientific methodology at the same time it accounts for fuller human experience. The brain represents the basic perceptual-imaginative anchor for understanding meaning in matter. In contrast to the philosophical category of “Being,” it provides an empirical referent which bestows on the “brain” special value—

privileged status—in understanding God. In so doing it meets the conditions of an analogical approach, which, as scientist-theologian Ralph Wendell Burhoe puts it, gives us the sharpest, most reliable, and accurate focus of reality for the sake of our adaptive survival.

In using the brain as “the analogical expression of God,” we can compare the conceptual likeness of brain and God (analogical perception) and the theoretical dissimilarity of brain and God (metaphorical imagination). The result is a natural theology that utilizes the evolutionary and environmental histories of our being over vast reaches of time (analogical discourse) with the distinctly aspirational and interpreted world of human beings (metaphorical discourse) (Burrell 1973). Words forming our perceptions of reality can become images reflecting the likeness of Being as the likeness of things in the universe become recognized as parts of a whole. In such a process, time is fluid and divisions of thought erased through the revelation of an interconnectedness of all with all. The approach unites and reconciles the sensory dimension of matter and brain and the spiritual dimension of human and meaning. It is at once “an intuitive sense of the experience of the ontological flash” of the meaning of the cosmos in which we find ourselves, and an explanation of that inspiration (Gerhart & Russell 1984, 114). God can exist as Maker and Being in the cosmos in which we find ourselves.

Others have hinted at a privileged status for the brain in God-talk. Hartshorne uses the analogy that “God is related to the universe as we are related to our brains. We are not our brains,” he claims, “but what happens in our brains is immediately related to our experience.” We are part of every event in the brain even as we are “coextensive with the sum of these events.” But we are more than the sum of these events and so “our experience is not exhausted by them” (Cobb & Gamwell 1984, 161).

Such thinkers (see Cobb & Griffin 1977), however, only nod their head at the brain’s potential as a basic analogical expression. Singularly lacking is an exploration of the brain itself, that place in which mind arises and without which mind does not function. Only a natural theology in an empirical mode enables us to talk about God both analogically and metaphorically, both perceptually and imaginatively.²

What, then, might this privileged expression contribute to understanding God?

THE WHOLE BRAIN AS THE BASIS FOR ANALOGICAL EXPRESSION

Although split brain research has revealed the presence of two minds, the left and right hemispheres, further inquiry places these analytic and integrative processes in larger perspective. We have known from

religious and mystical experience that there is more to consciousness than consciousness itself, but only recently has the evidence of brain sciences begun to confirm and inform that wider view of cognition. So, I start with the old brain and not the new, with evolution rather than culture. This view connects us with reptiles and other mammals, and by so doing with every level of organization in the universe (Kolb & Whishaw [1980] 1985, 80-86; Jerison 1985).

Neurophysiologist Paul D. MacLean articulates this conviction. "Starting with the subjective self as its province (its territory)," he writes, "the domain of evolutionary psychiatry encompasses both the microscopic and macroscopic aspects of all the underlying phenomena as they seem to unfold in past-present-future and *relate to the cosmos*" (MacLean 1985b, italics added). With his concept of *the triune brain*, "a mind of three minds" (MacLean 1978), he makes that developmental perspective intelligible. Here is how he does it.

According to MacLean, there are three levels of brain organization, not two. We possess three minds. Each mind reflects a different stage of evolutionary development and thereby a different level of complexity. Each mind has its own intelligence, its own data, its own sense of space and time, its own memory bank. If we do not press the analogy too far, the levels can be associated with a linear view of time: level one locates us in the past, level two relates us to the present, and level three directs us toward the future.

The Primal Mind of the Reptilian Brain as a Basis for Analogy. Level one is the oldest region, the reptilian-like brain or what MacLean calls the *primal mind*. Here we find the basic instincts and ritual behaviors of precedent. Instinctual behaviors include the nonverbal communication of reptiles, their display activities which signal to others who they are, where they are, and what they want: signature, challenge, courtship, and interaction with other creatures, including submissive behavior. For us, these behaviors signal to others who we are and what we are about. The primal mind is literally territorial—my place, my prerogative, my space, my inherited niche in the scheme of things.

I suggest that the primal mind views the world in terms of territoriality. This process contributes to, and explains, the persistence of the intensity of the phenomenon of "my turf." Perhaps it also gives a biological reinforcement of linguistic expressions of territoriality in religion. Such expressions may point to geographical territory such as the biblical concept of a Holy Land for the people of the Lord. They also may be psychological and theological analogies of territory based on the primal mind of the reptilian-like brain: "Thou shalt have no other gods before me" and "I the Lord your God am a jealous God" (Exod. 20:3-5; Deut. 4:23-24).

The Limbic System as a Basis for Analogy. Level two is the mid-region, the mammalian brain—the old brain—of what MacLean calls the *emotional mind*. Here we find a shift from the display behavior of reptiles and early mammals to the symbolic communication of later mammals, including play and vocalization to maintain contact. This region generates emotion which gives us “a sense of [the] reality of [ourselves] and the environment and a conviction of what is true and important” (MacLean 1970, 347). Here is the center of activity necessary for survival, the preservation of the self and the continuity of the species.

The limbic system makes up much of this old mammalian level. We are motivated by its three main divisions (MacLean 1970). The amygdalar system—so named because of the almond-shaped amygdala—involves “self-preservation as it pertains to behavior involved in feeding and the struggle to obtain food” and not simply territoriality. This constitutes a shift from “ruthless power” to “merciful power” (MacLean 1983, 359). The septal system—named after the hedge-like septum—includes “sociability and the procreation of the species.” Finally, at least in my simplified account, the thalamocingulate division generates behavior related to the familial: nursing involved in maternal care, audiovocal communication in the separation call which serves to maintain contact between mother and offspring, and play (see Turner 1983). MacLean proposes that the separation call “may be the most basic mammalian vocalization” (MacLean 1985a). The old brain and family life appear to evolve together (MacLean 1982).

Again, I suggest that this cry of separation—the core of the emotional mind—sets up a world characterized by symbolic communication. Survival in the service of evolutionary adaptation contributes to, and helps explain, the persistence of the phenomenon of our human quest for meaning. It provides the biological basis for the anxiety of meaninglessness (Tillich 1952), our anguish when our conceptual and behavioral world begins to dissolve and we feel cut loose from the center of our being. If this is so, we can add a psychological-biological dimension to our comprehension of historical events. We can understand the emotional power of the cry of distress of the Hebrew enslavement in Egypt, to which Moses is called to respond when he hears from Yahweh, “I have heard the cry of my people in Egypt and have seen their oppression” (Exod. 3:7-11). We also can comprehend the anguish of the religious person’s feeling of being abandoned: “My God, my God, why hast thou forsaken me?” (Ps. 22:1; Matt. 15:34).

In addition to these limbic functions of self-preservation, continuity of the species, and nurture of the young, we find a further function, namely, memory. Memory is associated, in part, with the hippocampus, so named because of the Greek words (*hippos* [horse] and *kampos*

[sea monster]), and its resemblance to the small, marine sea horse. The process involves incorporating highly organized and emotionally laden information into a sense of the continuity and integrity of reality (Winson [1985] 1986, 30-34, 201-02).

Without that transformation of sensory input from an immediate present into a stabilized past—from short term to long term memory—we have little sense of self and little orientation in time and space. We simply are unable to “remember” who we are, where we are, and what we are about. When we become aware of this with the third level of our brain (see below), we then live in the hell of an eternal present, without the recent past and without a usable future (Kolb & Whishaw [1980] 1985, 481-94; Winson [1985] 1986, 10-17).

The memory process explains the perceptual pattern of continuity and a sense of meaningful experience. Perhaps the persistence of that integration of a novel present with a stable past neurobiologically reinforces, and helps account for, the emphasis placed on such biblical commandments as “Remember this day, in which you came out of the house of bondage in Egypt” (Exod. 13:3), or “Remember the sabbath-day to keep it holy” (Exod. 20:8), or the importance of one’s name being “found [remembered] in the book of life” (Rev. 20:15).

The Neocortex and Types of Theology. The evolutionary advance from Neanderthal to Cro-Magnon human beings came with the development of the forehead from low brow to high brow. That expansion contains the prefrontal cortex, a part intimately linked with the thalamocingulate division. This cortex is the locus of anticipation, planning, and our capacity for empathy and altruistic sentiments.

MacLean calls level three, which contains the forebrain or neocortex, the *new brain* or the rational mind. Here we find distinctly human activity, most particularly, that which “promotes the preservation and procreation of ideas” (MacLean 1978, 332). As “[m]other of invention and father of abstract thought” (MacLean 1978, 332), the neocortical region, with its two hemispheres, is the region out of which culture develops (Burhoe 1973; see Turner 1983).

The dominant (left) brain works according to the sequential processing of formal logic. Its information comes from what it observes. Its facility with language is less with a supposedly “objective” reality and more with whether statements are consistent or inconsistent (Gardner 1985, 369). It explains and interprets what it observes (Gazzaniga 1985). Its features are similar to, and so I speculate that they account for, those of a belief pattern which focuses on proclaiming that which is “urgently right”—the Word and Acts of God as revealed in history. That is, the instructions and imperatives of a redemption-oriented theology are analogous to step-by-step explanation (Ashbrook 1984a).

I surmise that redemption-oriented beliefs have persisted through the centuries precisely because of a preference on the part of some people for the conceptual-doctrinal interpretive process of the left brain.

In contrast, the nondominant (right) brain works according to the simultaneous processing of situational logic. Its information arises from processing that is integrative. The mind functions in a way that falls "into patterns with huge numbers of interconnections and a minimum of formal symbolic processing" (DeAngelis 1987; Rumelhart et al. 1986; see Pribram 1986). The right brain exhibits features similar to, and so I speculate that they account for, a belief pattern in which "the really real" of God is manifested in all and through all and with all. That is, the numinosity and symbolic indicatives of creation-oriented theologies are analogous to all-at-once integration (Ashbrook 1984a). I suggest that creation-oriented beliefs have emerged and persisted wherever a group or an individual prefers an experiential right brain way of processing information.

Limbic System "Logic" Underlying Neocortical Analogies. Although the new brain handles information in these two ways—analytic and integrative, step-by-step and all-at-once—both hemispheres are extensions of the emotional mind of the old mammalian brain. These higher functions are outgrowths of that core region. In fact, which strategy we use depends upon decisions we make outside of consciousness (MacLean 1978; 1983; Wilke 1981, 33-56; Penfield 1975, 19, 44-48).

There in the limbic system we determine whether what is happening is disagreeable and painful or agreeable and pleasant. If painful, it calls for active sharpening of the boundaries between ourselves and the environment. We experience that boundary sharpening as tension. If we determine that what is happening is agreeable, we respond by blurring the boundaries. Through relaxation we accommodate to what is around us. In short, decisions about the nature of the context and the activity in which we engage always balance tension and relaxation.

These processes parallel those at the cerebral level. Psychiatrist Eugene d'Aquili (1983) shows this by means of a model of energy-expansion, associated with arousal of the sympathetic nervous system (the ergotropic system), and of energy-conservation, associated with the parasympathetic nervous system which maintains the stability of bodily activity (the trophotropic system). The amygdala triggers tension and survival behavior. In activating negative associations to stimuli, or by decreasing positive associations, we use the vigilant strategy of the left hemisphere. In contrast, the septum motivates behavior expressive of sociability and so related to the continuity of the species, such as preliminaries of sexual activity. In maintaining a relaxed relationship with the environment, we choose to use the connective strategy of the right hemisphere.

The “logic” of the limbic system is nonlinear. Its neural pathways are capable of both arousal and relaxation. Emotional conviction can mobilize support for the opposite side of any issue. In the limbic response, everything happens at once (Wilke 1981, 33). In other words, the different strategies of the neocortex give evidence of an interaction between ourselves and the emerging universes of influence of which we are a part. These universes include family, society, and value commitments or beliefs. Ultimately, cognition serves optimal adaptation by combining information from our inner world with information from the outer world. The result is a new level of evolution, what Burhoe describes as “the symbiosis of cultural and genetic heritages as generated by religions” (Burhoe 1987).

There seem to be only a limited number of scenerios of what it means to be human—and, by analogy, ways that God is God. Tillich identified two of these as the courage to be as oneself and the courage to be as a part of the whole (Tillich 1952).

Concern for the self—what at its basic level is survival and at its most developed level is individuation—arises from activation of the sympathetic nervous system, mediated through the amygdala by tension. Literal survival tends to be limited to the physical environment and the activity of the primal mind; psychological and spiritual survival and courage tend to be influenced by the interpersonal world of meaning in which we place ourselves and the combined activity of the emotional and rational minds.

Concern for the whole—what at its basic level is the literal continuity of the species and at its most developed level is participation—comes with the activation of the parasympathetic nervous system, mediated through the septum by relaxation. Literal continuity is now taking the form of concern for the entire ecological environment—the atmosphere we breathe and the water and land upon which we depend; psychological and spiritual cooperation—or community—require the whole human family if we are to live together on this tiny speck in an infinite spaciousness.

The balance between self and setting, thereby, affects both how we act in the immediate moment and reflects what we believe about our universe. Perhaps this limbic balancing helps explain the prevalence and persistence of the neocortical commandment to “love your neighbor as yourself” (Lev. 19:18; Mark 12:31), or the recognition that humanity is to exercise responsible care for the whole created order (Gen. 1:26).

The complexity of 100 billion neurons, or nerve cells, with something in the neighborhood of 100 trillion connections between them (Hoffman 1987), makes the brain “the most complicated constellation

of behaving entities” we know in the universe (MacLean 1970, 347). It combines quite specific programming with remarkable flexibility. Such a characterization, I propose, suggests how God is ever present (remarkable flexibility)—there is nowhere that God is not present (for instance, Ps. 139)—and ever caring (quite specific programming)—God’s grace is sufficient for every need (as in 2 Cor. 12:9).

WHAT IS GOD? WHAT IS MIND? WHAT IS BRAIN?

For me the brain provides an analogical expression of how God is God. An understanding of the brain’s complexity can change the sense of awe of how God is God into a felt knowledge of our Creator because no matter how much we learn about ourselves, we know we do not alone create ourselves. Even as co-creators, we are still utterly dependent on “a sovereign system of evolving reality which created [us] and all other things. . . . Hence [we] must seek to adapt to the unavoidable requirements for living imposed by that superior system of reality—or else lose life, cease to be” (Burhoe 1973, 415). Our insistent search for meaning reflects the fact that we live in a meaning-making universe. As that sovereign system of evolving reality, God continually works in us and through us—that is, our brain-mind—in our creating cultural forms, or subsystems, which are expressions of our quest for meaningful connection between ourselves and the universe of influences in which we find ourselves.

“Brain” and “mind” are interchangeable terms. As the subjective experience of objects, the brain is mind; as an objective system external to conscious experience, the mind is brain. These are not different, even though we can distinguish them. In both the brain’s mechanisms and the mind’s experiences the brain-mind engages in a “restless search of itself to make better sense and order of what is going on” (Burhoe 1987).

Current breakthroughs in psychobiological research are eliminating the gap between mind and body (Rossi 1986) or mind and brain. The brain, primarily in the limbic-hypothalamic system of the emotional mind, coordinates what is referred to as “mind-body communication.” The materiality of brain produces the meaningfulness of mind, and the purposefulness of mind exists in, through, and because of the physicality of brain. Call it brain-mind, if you want. The hyphen says the two words belong to one reality. “Mind” identifies the *human* meaning of “brain,” even as “brain” designates the *empirical* referent of “mind” (see Ashbrook 1984b, 16-21).

In understanding God, I combine the inside characteristics of brain—all the visceral, perceptual, imaginative, conceptualized learning of viable responses (Johnson 1987; Lakoff 1987)—with the outside

sources of our history and the communities which express that heritage (Burhoe 1987). Because of the interpretive left brain as the most focal expression of the neocortex, we are meaning-making creatures, creatures wired to make conscious sense of the information we process. In religious language that is known as cosmos-making, creating order—Logos—out of chaos (see Gen. 1:1; John 1:1).

Our brain is the origin of all *human* activity. It is the source of every interpretation of what is really real and truly right. We can use that empirical referent, therefore, as a way to understand and incorporate God's presence in ourselves and in the world, for God is the cognitive focus of our aspirations and assertions.

In the words of Santiago Ramon y Cajal (1852-1934), the acknowledged "maestro" of the microscopic study of the brain: "As long as the brain is a mystery, the universe, [which is] the reflection of the structure of the brain, will also be a mystery" (quoted by Feindel 1975, xxvi). If we take Genesis 2:6-7 metaphorically, then divine purpose (breath) permeates physical matter (dust), even as physical matter discloses transcendent purposing. I combine Cajal's conviction and the Genesis vision to say that the living reality of the human brain reflects the living reality which is God, that is, a contextual universe full of meaning.

To that end, religion, as the fullest expression of cultural-biological activity, maintains and enhances our "ecological niche" (Burhoe 1981, 120). In personal and institutional ways, what we believe can enlarge the possibility of altruistic cooperation. The Book of Leviticus articulates the transition from kin relationships, as inscribed in the genetic code, to non-kin relationships, as developed in cultural codes (Lev. 19:34). We are instructed to respond to everyone—not just the neighbor and friend but also the stranger and enemy (Matt. 5:44; Luke 6:27, 35)—as we would to ourselves. God is everywhere, in everyone (see Matt. 25:31-46).

The new brain constructs strategies to deal with, explain, and evaluate the interactions which fit us with our environment. However, it is the prefrontal cortex's connections with the old brain's subdivision involved with prenatal care, MacLean insists, which brings "a sense of concern for the welfare of all living things" (MacLean 1983, 370-71). The result is emphatic foresight in planning for the needs of others as well as oneself.

Conscious activity, therefore, seeks the best adaptive relationship to the environment which is possible at any particular moment (Oakely & Eames 1985, 247). When something is amiss—problematic, unusual, unintelligible, or threatening—the delicate balance of the limbic system activates the emergent features of cognition. Our subcortical regions—reptilian and mammalian centers—and our cortical regions—

left and right hemispheres—combine (Levy 1985). The result is what philosopher Michael Polanyi termed “an active shaping of experience performed in the pursuit of truth” (Polanyi 1966, 6).

By virtue of its efforts to explain its own functioning, the brain transcends its own consciousness. The whole brain—the old brain as much as the new—is involved in knowing who we are and knowing the universe of which we are a part. By being aware of ourselves we reflect that which is more than our individual selves (Gerhart & Russell 1984, 170-75).

So, we do not approach the “more complex and belief-tainted processes such as classification of ontological domains or judgments concerning rival courses of action,” according to researcher Howard Gardner, “in a manner that can be characterized as logical or rational or that entail[s] step-by-step symbolic processing” (Gardner 1985, 385). Deductive and digital categories fail to take account of that which is “messy, intuitive, [and] subject to subjective representations” (Gardner 1985, 380, 386; Oakley & Eames 1985). These reflect the nondominant mind and limbic decision-making.

The limbic system, then, deals with the crucial issues of how we behave, issues of “the role of the surrounding context, the affective aspects of experience, and the effects of cultural and historical factors” (Gardner 1985, 387). This complexity is now called the *subsymbiotic paradigm*. According to this paradigm, “the most powerful level of description of cognitive systems is hypothesized to be lower than the level that is naturally described by symbol manipulation” (Rumelhart et al. 1986, vol. 1, 195).

The concept *mind* combines the *human* significance of the brain with what believers have understood to be the *intentionality* of God. Physical brain and purposeful mind are one and the same. Our brain actually embodies, and not only reflects, a universe characterized by the creation of meaning. Thus the systematic expression of what matters most (the discipline of theology) and the articulation of the necessary a priori truths about being (ontology as the branch of philosophy dealing with being) are dependent upon cognitive processes or what is known as epistemology (see Gerhart & Russell 1984). Further, as the philosophical concern with the nature and origin of knowledge, epistemology depends upon the functioning of the human brain.

CONCLUSION

My point is simple: each of us has a brain unique to her- or himself, yet each brain connects us to the universe. To link the ideas of brain and God in this way is an act of faith—*sola fide*—and acts of faith always entail a metaphorical use of language, an imaginative leap from per-

ceptual experience to patterned construction. To talk of God in terms of the brain is an analogical use of language, an orderliness, according to neuroscientist Candice Pert, which is “not anything special” and yet is “the most special thing in the universe” (quoted by Hooper & Teresi [1986] 1987, 390). Yet to use the brain as the basis for analogical expression of God is, in fact, a metaphorical model of God. God is *not* the brain; yet brains *are* the most explicit clue to understanding God—more than body, more than lover, more than friend, more than father, more than rock.

The cognitivism of the neurosciences makes meaning-making understandable in new ways. What we attend to—set our mind on—becomes “the central process that links emotion and motivation to cognitive operations” (McGuinness & Pribram 1980, 131). To link brain and God gives special significance to our meaning-making brain and sensible coherence to our contextual universe, that “reality” in which we both find ourselves and which we create. This analogical association provides a structure for talking about the basic components of God and ourselves—survival of the self and continuity of the species, care of one another and ongoing identity through memory. These components find their intentional expression in the strategies of making real what matters most; namely, left brain redemption, right brain creation, and whole brain liberation (see also Ashbrook 1984a, 337-44).

To know how we are made is to know how God works in this world. Yet there is no way we can talk about the whole—that means God—except through and with our brain—which is not the whole. Such is the base of this and every analogical expression of faith. To understand belief—the nature and reality of God—in light of the brain offers the possibility of a more informed knowledge of “how” to live, even as to understand the brain in light of God compels us to recognize the reality of “what it means” to live in an inclusive and caring universe.

NOTES

1. In using the term *empirical* I include subjective *experience* as well as objective “evidence.” The concept and referents of experience are complicated. Establishment reason has insisted that “experience” is too subjectivistic to be reliable. It is that objectivistic tradition which has come under question, not only by process thought but even more by feminist criticisms of patriarchal culture. Thus, feminist thinkers seek to root out what they regard as sexist distortions “in the ‘hard core’ of abstract reasoning thought most immune to infiltration by social values,” namely, the discursive inheritances which invert “some of the real regularities of social life and underlying causal tendencies” (Harding & Hintikka 1983, x). A pervasive reliance upon the visual for knowledge has been at the expense of the bodily, thereby generating supposedly irresolvable dualisms: subject-object, mind-body, inner-outer, reason-sense.

2. The experiential-phenomenological aspects of a radical empiricism are probably of more compelling significance to the fullness of lived experience than is an analogically oriented empiricism. Philosopher David Burrell, who has clarified the distinction

between analogy as entity and analogical thinking as expression (Burrell 1973), focuses the tension when he makes a case for "analogous discourse" in contrast to "adequate conceptualization." For him, reasoned discourse requires sustained argument based on "a systematic ordering language," but in the end he shifts theological inquiry from systematic statements to narrative, or what he calls "storied self-awareness" (Burrell 1982). This seems to be another way of putting a classic Protestant position, namely, analogical expressions of *faith*, which reflects my position as well.

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