

THE IMAGE OF GOD OF NEUROTHEOLOGY:
REFLECTIONS OF CULTURALLY BASED RELIGIOUS
COMMITMENTS OR EVOLUTIONARILY BASED
NEUROSCIENTIFIC THEORIES?

by William A. Rottschaefer

Abstract. In Augustinian fashion, James B. Ashbrook and Carol Rausch Albright develop a neurotheology that finds evolutionarily based correlations between the functions of the human mind-brain and the roles God plays in human life. I argue that their assumptions of *anthropomorphism*, that the human mind-brain must conceptualize its environment in human terms, and *realism*, that anthropomorphism is correct, are evolutionarily unlikely. I conclude that the image of God (*imago dei*) the authors find reflected in the human mind-brain appears to derive from their Christian religious commitments rather than from evolutionary theory.

Keywords: anthropomorphism; Augustinianism; epistemic realism; evolutionary theory; image of God; mind-brain; neurotheology; religion; science.

ASHBROOK AND ALBRIGHT'S NEO-AUGUSTINIAN PROJECT

James Ashbrook and Carol Albright's *The Humanizing Brain: Where Religion and Neuroscience Meet* is an innovative and provocative contribution to the now flourishing amicable dialogue between religion and science, one that pushes it into largely unexplored territory, the relationships between religion and the neurosciences. Although from a distance the neurosciences appear to be barren or even hostile environs, Ashbrook and Albright aim to show us that they are fertile ground for religious cultivation. Indeed, the authors maintain that the scientific study of the mind-brain may provide our best access to understanding the transcendent as it

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[*Zygon*, vol. 34, no. 1 (March 1999).]

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manifests itself in the cosmos. For in their view the universe and its maker are mirrored by the mind-brain, since the latter's function is to provide an understanding of both through its representational and motivational powers.

In their exploration, Ashbrook and Albright attempt to renew central features of the classical Augustinian approach to religious understanding. Taking their Christian faith as a starting point, the authors seek insight by studying the human soul, since in its complexity and function it reflects most fully God's work in this world. Just as Augustine, drawing on neo-Platonic thought, sought to illuminate the inner workings of the Trinity by a close scrutiny of the workings of the soul's intellectual and volitional powers, the authors, using the neurosciences, find in the cognitive and motivational functions of the mind-brain reflections of its creator. As does Augustine, their mentor, the authors seek the illumination and nurture of the soul in its journey to God.

THE IMAGE OF GOD AND THE HUMAN MIND-BRAIN

The image of God (*imago dei*) that their explorations reveal is a mind-brain whose evolutionarily based neurological functions reflect significant aspects of a Christian God who is actively present in creation, especially in relation to humankind. In spelling out their neurotheology Ashbrook and Albright use Paul MacLean's speculations about the evolutionarily based structures and functions of the brain. MacLean has hypothesized that the human brain is the product of three major structural and functional evolutionary developments. These are the reptilian, paleomammalian, and neomammalian brains, so named for their hypothesized entry points on the phylogenetic tree of life. The reptilian brain, whose major structure is the brain stem, is possessed by such creatures as snakes, lizards, turtles, and crocodilians, while all mammals have a paleomammalian brain whose major structure is the limbic system. The neomammalian brain, which includes the neocortex of humans, is found in all the higher primates.

The authors maintain that the functions of each of these structures are correlated with "God's ways of being God." The territoriality of creatures with reptilian brains is correlated with a conception of a God who belongs to God's creatures, while the understanding of God as the highest of all gods reflects the hierarchical structures in animal relations. The attentional capacities and functions of the reptilian brain reflect the ever-present, unchanging character of God as well as God's eternity, omnipotence, and immutability. The functions of the limbic system of the paleomammalian brain also mirror the divine. In particular, the emotions, enabled by structures of the limbic system, are the sources of empathy and our capacities to relate to others. The conception of God as interactive and nurturing, as well as social and persuasive, are correlated with these limbic functions.

Other structures of the limbic system, such as the amygdala and the hippocampus, are associated with memory and significance and are central in the building of a conception of the self and the meaningfulness of life and creation. The notion of the transcendent as the source of identity and growth, of God as mother and father, are correlated with these structures and functions. When discussing the structures and functions of the neo-cortex, the authors first focus on the differences in function between right and left brain. As they interpret it, the left brain processes information sequentially and analytically, while the right brain is primarily concerned with understanding things in a holistic and unified fashion. The authors correlate these functions respectively with God as source of order and reason and with God as relational. Finally, the authors attend to the frontal lobes which enable human intentional activity, and find a correlation with a conception of God as purposeful.

RENEWING AUGUSTINE'S FAITH SEEKING UNDERSTANDING

Ashbrook and Albright's approach requires assumptions about the existence and nature of God that may not be shared even by adherents to their own Christian religious tradition. The reader will be disappointed to find that the authors have provided little support for the use of an Augustinian strategy given the context of religious pluralism and self-sufficient secular knowledge. Consequently, their approach to the religion-and-science dialogue may be plausible and valuable only to those who already share their convictions about the Christian God, thereby narrowing the scope of the dialogue they seek to promote. Moreover, despite their professed Augustinianism, the authors are unclear about the epistemic basis of their convictions, ascribing them variously to self-evidence, experience, perception, empirical theology, and faith, without, unfortunately, providing us with an account of these *prima facie* disparate sources. At the same time, they interpret religious pluralism as merely linguistic differences and base their own use of the Judeo-Christian tradition on the comfort they find in using a language with which they are familiar and competent (Ashbrook and Albright 1997, xx). These problems raise the concern that the image of God that Ashbrook and Albright discern in the current neuroscientific account of the human mind-brain reflects their religious commitments more than it does any understanding of the transcendent emerging from that account. However, I shall set aside these issues and proceed to what seems to me to be the innovative core of both their correlational project and their proposal for a neurotheology.

NEURONAL CORRELATES OF THE DIVINE

In their neurotheology, Ashbrook and Albright correlate the functions of the human brain with "God's ways of being God." Their idea is not that

experiencing God as nurturing, for instance, can be localized as a function of some part of the brain. Nor are the authors attempting to argue from the nature and functioning of the brain to the existence of a transcendent source of the same sort to account for its functioning.¹ Moreover, they are not claiming on the basis of either scientific or anecdotal evidence that people generally, or theologians or scientists in particular, associate, for instance, the nurturing functions of the human brain with God's role in human life as a nurturing parent. Rather, the correlations that they seek are of a different sort. They use the neurosciences to determine a function of some brain structure and then search for a similarity it might have with a particular understanding of a role the Christian God is believed to have in the life of humans. Thus, the authors' correlational method is based on similarities and makes use of similes and metaphors.

This method of correlation is problematic on several scores. It is open to the charge of triviality, since everything is similar to everything else in some respect or other. Moreover, the selection of similarities may appear arbitrary. Why pick one resemblance rather than another? Why choose the specifically human and morally positive characteristics enabled by the human brain or focus only on humanlike and morally positive aspects of the Christian theistic God? Are there any constraints on the authors' methodology that avoid rendering its results either trivial or arbitrary or both? Indeed, there are. And these constraints are, perhaps, the most philosophically interesting aspect of the authors' proposal.

Ashbrook and Albright argue that the mind-producing brain is a humanizing brain. What they mean by this is that the brain in its evolutionary and cultural development produces a mind, that is, produces something that has such features as consciousness, subjectivity, intentionality, valuing, reasoning, desiring, and feeling. The most important aspect of this humanizing propensity is that the mind-brain *necessarily* views external reality in a human fashion. The authors claim that our mind-brain is *unavoidably* anthropocentric, necessarily imposing order, meaning, intention, and personality upon the realities with which it comes into cognitive contact, both observable and unobservable, including the transcendent (pp. 35–36). Then the authors make the even bolder claim that such anthropocentrism is correct. Thus, Ashbrook and Albright argue that the correlations they find between the transcendent and the functions of the brain are neither trivial nor arbitrary since they are built on the very humanizing nature of the mind-brain's representational capacities and its evolutionary success in using those capacities.

EVOLUTIONARY NEUROTHEOLOGY

Ashbrook and Albright offer an evolutionary argument to support their theses about the mind-brain's anthropomorphism and its cognitive and

motivational successes. They contend that the evolutionary success of the human species is due in part, at least, to the human mind-brain and its necessary anthropomorphizing. Such success, they reason, must be due to the human mind-brain's ability both to achieve genuine cognitive contact with the factors that affect its survival and reproduction and to discern ways in which to negotiate effectively the environments in which it evolved and maintains itself. But such cognitive and motivational effectiveness, the authors claim, concerns not just the immediate environment but also more encompassing environs, indeed, that of the transcendent. Human evolutionary success is itself, then, indicative of the correctness of the anthropomorphizing of both immediate and ultimate reality by the human mind-brain. Though often denigrated as a cognitive deficiency, anthropomorphizing turns out to be humans' greatest cognitive and motivational asset, since it genuinely reflects the structure of reality, proximate and ultimate.

Thus, we can distinguish three central assumptions upon which the authors build their neurotheological correlations, those of evolution, anthropomorphism, and epistemic realism. Their basic evolutionary thesis is scientifically incontestable; the human brain is an evolutionary product. It enables fitness-enhancing behaviors by means of its brain-based representational and motivational capacities. However, I shall argue that their other two assumptions, those of evolutionarily based anthropomorphism and epistemic realism, are not supported by current evolutionary theory.

THE ANTHROPOMORPHIZING HUMAN MIND-BRAIN

Ashbrook and Albright maintain that humans *must* anthropomorphize the realities with which they interact. This claim is problematic unless refined, because it is quite clear that humans have developed cultural capacities to view both observable and nonobservable phenomena in nonhuman ways. Indeed, this refinement applies to even religious phenomena, since conceptions of the divine, for instance, in some forms of Buddhism, are impersonal. Thus, it seems clear that the authors' claim about the necessity of anthropomorphizing must be restricted to our *evolutionarily* based capacities of representation.

However, must even these evolutionarily based capacities for representation present reality in an anthropomorphic fashion? We can distinguish the realities represented by these capacities into observable human and nonhuman phenomena, and nonobservable phenomena—the theoretical entities of the sciences, for instance, and the transcendent. Certainly, the human part of the observable environment is conceived of in a human fashion, that is, as possessing such capacities as thought, desire, and intention, the so-called folk psychological conception of humans. But, whether our folk psychology is an evolutionary product, a developmental

construction, or a cultural achievement remains an unresolved discussion in cognitive developmental psychology (Carruthers and Smith 1996). Thus, even the restricted claim that our evolutionary history requires us to think of humans anthropomorphically, though not implausible, is far from being a settled scientific finding.

Setting aside the issue of whether our evolutionarily based cognitive capacities constrain us to conceptualize nonhuman observable objects in a human fashion, I turn to the question of whether these capacities compel us to view the transcendent anthropomorphically.² I find three different conceptions of the transcendent that count as anthropomorphic in our authors' account, those of the God of the Christian religious tradition, a humanlike personal God, and a meaningful and orderly ultimate reality. Clearly, our authors cannot maintain that our evolutionarily based cognitive capacities force us to conceive of the transcendent in terms of the monotheistic God of the Christian tradition. That conception and the other conceptions of the transcendent in the major religious traditions are clearly culturally based achievements. To this extent their neo-Augustinian quest cannot be satisfied by an evolutionarily based neurotheology.

To make an evolutionary case that certain features of an environment affect an organism as selective factors rather than merely as general causal factors, one needs to show that, given genetic variation with respect to a trait, these factors favorably affected the differential survival and reproduction of organisms possessing that trait in comparison with other organisms either lacking the trait or possessing some variant of it. Thus, with respect to their second conception of the divine, the authors need to show that human ancestors with brains that represented the transcendent as humanlike and were motivated by such representations were evolutionarily more successful than their competitors who did not conceive of the transcendent or did so in a different, nonanthropomorphic fashion. As far as I can discern, Ashbrook and Albright have presented no such evidence, and, as far as I know, none exists. Even if, by extrapolation from what we know of the gods of "primitive" religions, we allow some evolutionarily based conceptions of the transcendent in terms of divine beings, we get at best what John Hick has described as a large city-sized telephone book of humanlike gods (Hick 1989, 233–34). But this sort of anthropomorphism produces an evolutionarily based neurotheology that is far from the authors' neo-Augustinian goal. Moreover, there are reasons to maintain that such "primitive" conceptions of the divine are not purely evolutionary in source.

That brings us to the authors' third and weakest anthropomorphic sense of the divine, that ultimate reality is orderly and meaningful. In this case the authors need to show that our ancestors were at an evolutionary advantage with their competitors because they possessed genetically based cognitive and motivational capacities to represent and respond to order and meaning, not merely in their immediate environs but in the universe at

large. The authors provide only the smallest hints of such evidence. They point out that the Neanderthals seem to have been aware of death and that Richard Leaky found in his field work an unusual arrangement of large stones, constructed, apparently, for no utilitarian purpose (1997, p. 27). Such evidence is hardly persuasive. Neither behavior requires that it be based on some conception of an all-pervasive order and meaning in the universe. But, even if it did, such a minimalist conception of *Homo religiosus* renders the concept naturalistic, except in name, and evacuates the authors' neo-Augustinianism.

Thus, I find Ashbrook and Albright's assumption that humans, because of their evolutionary history, have representational capacities that constrain them to conceive of their ultimate environment in a religiously significant anthropomorphic fashion unsupported and implausible from the point of view of current evolutionary theory.

EVOLUTIONARY EPISTEMIC REALISM

The authors contend that our evolutionary success as humans confirms not only the existence of evolutionarily based capacities to view both observable and nonobservable reality, especially the transcendent, in a human fashion, but also the correctness of such representations. Evolutionary theory tells us that adaptations are environmentally relative. For instance, the representational capacities of water-bound creatures like whales are different than those of land-bound ones like ants. We do not expect ants even to have the sort of representations used by whales, let alone to have fairly accurate ones of that kind. And vice versa. Thus, even if one assumes evolutionary epistemic realism, the expectation is for only an environmentally bound realism.

Moreover, there is reason to maintain that even an environmentally bounded evolutionary epistemic realism requires only a minimal sort of accuracy. Current theorizing in signal detection theory about the accuracy of representations indicates that the types of representational systems most likely to evolve will be ones that tolerate a fair amount of error. Since the survival value of the represented objects to the organism is central in an evolutionary account, one can expect that representational systems that act on the basis of information that is either false or partial will be evolutionarily successful (Godfrey-Smith 1996). The argument is roughly as follows. We first make the evolutionarily plausible assumption that the emergence of detection and response mechanisms is constrained by time, energy, and available materials in such a way that optimal or near-optimal detection and response mechanisms are prohibitively costly for nature to develop. Now suppose, for example, that in eight out of ten instances a rustling in the bushes poses no harm to an organism and, indeed, may be a potential source of food, worth on each occasion a positive two fitness

points. But, in the other two instances, the same sort of rustling is due to a source of potential serious harm, costing a negative twenty fitness points each time. Consequently, organisms that encounter this sort of situation frequently and develop cognitive capacities that produce more false than true beliefs, to put it anthropomorphically, will on the average be more fit than competitors who do otherwise. Thus, even a bounded evolutionary epistemic realism may be of a quite limited character with respect to its general accuracy.

In addition, culturally based nonevolutionary cognitive achievements in the sciences concerning our nonimmediate environment and its connections with our immediate environment indicate that both our common-sense and evolutionarily based representations are sometimes not only incomplete and partial but also in various degrees false and misleading. Thus, for instance, our more than likely evolutionarily based representations of the immediate environment as a qualitative world of colors, sounds, and smells are either false and theoretically eliminable, or correct, but to be completely reinterpreted in terms of scientifically based theoretical conceptions of physics (Hardin 1992; Akins 1996). However, neither this incompleteness nor, in some cases, falsity prevents the evolutionary success of these cognitive and motivational adaptations.³

I conclude that any thesis about the correctness of representations, deriving from our evolutionarily based cognitive capacities concerning the features of the immediate environment in which these capacities were selected for, must be highly nuanced and modest if it is to conform to current plausible accounts of the evolutionary origin of such capacities. These accounts call for a highly fallible, environmentally situated epistemic realism. Thus, even with respect to our immediate environs, the authors' expansive evolutionary epistemic realism is not adequately supported; indeed, it is highly problematic. Moreover, this conclusion holds *a fortiori* for the authors' even more ambitious evolutionary epistemic realism, which postulates an essential correctness of evolutionarily based representations with respect to features not part of the observable selecting environment, that is, unobservable small- and large-scale features of the universe, even those of the transcendent. It is unlikely that these features play any role in our evolutionary history. Even if some of them did, any evolutionarily based representations of them more than likely would be highly fallible and subject to replacement by more adequate culturally based ones.

CONCLUSION

Ashbrook and Albright's neo-Augustinian neurotheology is biologically implausible. Its central assumptions of anthropomorphism and epistemic realism are problematic in the form in which they help support their neo-Augustinian search for an understanding of their Christian faith. More-

over, a much more modest rendition of both anthropomorphism and epistemic realism, one which might be supported by evolutionary considerations, fails to provide an image of God that correlates with their Christian commitments about the nature of God. Thus, in my view, these commitments rather than the findings of the neurosciences about the mind-brain guide their selection of correlates between its evolutionarily based functions and the transcendent. To this extent the reflections of the divine that they find in the mirror of the soul seem to have been generated more by their culturally based Christian commitments than by evolutionary and neuroscientific findings. In some ways this should not surprise us, since the neo-Augustinian approach they embrace is itself vulnerable to the dangers of uncovering what one wants to find rather than what is actually there.

Despite these negative conclusions, I believe that Ashbrook and Albright are surely correct in their view that the neurosciences are fruitful territory for religious reflection. For that reason we can be grateful to them for their exploratory boldness.

NOTES

1. Although they refer to their "empirical natural theology," the authors do not seem to have in mind inferences from empirical data concerning the mind-brain to the existence and nature of a theistic God.
2. I am unclear whether Ashbrook and Albright intend their anthropomorphism to extend to observable nonhuman objects.
3. Perhaps, even more significantly, a good case can be made that we should expect a similar sort of reconfiguration of the representations of our mental life, so-called folk psychology, specifically, our understandings of ourselves in terms of selves with thoughts, desires, feelings, emotions, intentions, and consciousness (Churchland 1986).

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