Neuroscience and the Person
Scientific Perspectives on Divine Action

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1 Introduction

1.1 Goal

The goal of this essay is to present a richly textured interpretation of a large tract of the territory of religious experiences that we shall call *experiences of ultimacy*, a name that will be explained below. We develop this interpretation in two phases. First, we describe these religious experiences as objectively as possible, combining the descriptive precision of phenomenology informed by the neurosciences with a number of more obviously perspectival insights from psychology, sociology, theology, and ethics. Our hope is that the resulting taxonomy is compelling enough to suggest criteria for the plausibility of constructive efforts in theology and philosophy that depend upon an interpretation of religious experiences, including those in this book that attempt to speak of divine action in relation to human consciousness.

Second, we make two constructive ventures on the basis of this description. In the first, inspired by existing social processes used to identify authentic religious experiences, we describe a procedure whereby genuine experiences of ultimacy can be distinguished from mere claims to such experiences. This brings such experiences into the domain of public, scientific discussion as much as they can be, which is a great advantage from the point of view of encouraging more mainstream discussion of them by scientists and other intellectuals. The other constructive venture is a theory about the causation of ultimacy experiences. This is our attempt to evaluate claims made concerning the ultimate cause and value of experiences of ultimacy. The modeling procedure we adopt makes use of semiotic theory to plot not causal interactions themselves but rather their traces in the form of sign transformations—all terms that will be explained in detail later. In the language of semiotic theory, these causal traces take the form of richly intense sign transformations. This proposal keeps ontological presuppositions to a minimum by focusing on causal traces rather than on the nature of the cause itself. Nevertheless, it does offer a religiously or spiritually positive way of interpreting authentic ultimacy experiences, and at the end we offer a suggestion about the nature of the ultimate reality that might leave such causal traces.

1.2 Motivation

The motivation for the task we undertake here is primarily the intuition that religious experiences are important elements of human life, worthy of respectful and energetic interdisciplinary study. A word of explanation is required, however, because this intuition may seem obscure or trivial, depending on one's point of view. On the one hand, when religion is understood in the tradition of Emile Durkheim as the expression and codification of the most important cosmological and ethical

commitments of a group,[1] individual experiences may seem irrelevant to the account of religion proffered. Yet appearances in this case are misleading: as Durkheim himself understood, without personal religious experience in some form, whether aberrant or not, the cohesiveness of religious groups and the motivation for underlying cosmological and ethical commitments remain unintelligible features of human life. On the other hand, a religious interpretation of human life in terms of categories such as sin and salvation, suffering and liberation, will be so apt to emphasize individuals that religious experiences will seem inevitably preeminent. The danger here, however, is that the complexity and diversity of religious experience and practice will be reduced to fit what a particular religion's belief structure can comprehend. Juxtaposing these two points of view leads to the conclusion that religious experiences are important in any analysis of human life and that many different points of view need to be integrated in order to achieve a properly balanced theory.

This assessment of the general importance of the study of religious experiences needs to be related to several other motivating factors. First, the increasing obscurity of scriptural, ritual, and theological language about divine action in recent centuries has drawn attention to the individual person as a possible locus for the action of God or gods. In fact, to the extent that divine action in the natural order has been eclipsed by scientific accounts of nature, divine action directly in relation to human consciousness can have the significance of a last resort for making sense of such language. This adds a sense of urgency to the investigation of religious experiences, especially among those who have had them.

Second, the neurosciences have largely succeeded through their analyses of brain structure and function in portraying that which is distinctively human as continuous with regularities and forms of complexity observed throughout nature. This generally accepted conclusion about human beings reconfigures the whole question of religious experiences by proposing explanations for them that are independent of the assumption that they are experiences of anything properly called a religious object.[2] The rise of the neurosciences does not make this reductionistic challenge philosophically different in kind than it was previously, but it does demand that theories of religious experiences should attend to the neurosciences.

Third, although neuroscientific accounts have focused on isolated brains, there is growing interest in the social capacities of the human brain. This research area suggests an approach to theorizing about religious experiences that exploits fruitful links between isolated-brain neuroscience and the various forms of communal wisdom that traditionally have been vital to the understanding of religious experiences.

1.3 Limitations

So much for motivation. Our goal must also be qualified by several practical considerations. First, research into the nature of religious experiences is still in its

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[1] See Emile Durkheim, *The Elementary Forms of the Religious Life*, tr. from the French by Joseph Ward Swain (New York: The Free Press; London: Collier Macmillan Publishers, 1915).

[2] For an early and notable example of such a theory, see Julian Jaynes, *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (Boston: Houghton Mifflin Company, 1976).

infancy in most respects. In particular, neuroscience—including cognitive neuroscience, the subdiscipline most pertinent to our current project—lacks a central theory capable of organizing the fragments of knowledge that we have. The field at present is a collection of part-concepts whose composition shifts with each new wave of experiments and interpretations.[3] Detailed neurobiological accounts are therefore premature: we can only make tentative suggestions, and nothing will get done without a sense of adventure. The same must be said of the phenomenology of religious experience. Disciplined and properly informed cross-cultural comparison has barely begun, and the means to determine agreement and disagreement between culturally bound descriptions of religious experiences remain obscure.[4]

Second, a cornerstone of our position is its neutrality. In the descriptive phase of the essay, we assume neither the reality nor the nonreality of that which is taken to be the object of an experience of ultimacy, and we take for granted neither the efficacy of belief in that object nor even the coherence of the idea. Subsequently, in the constructive phase of the essay, while we shall assume that ultimate reality leaves causal traces of a particular kind, we assume nothing about the nature of this ultimate reality; it could be anything from ontological emptiness to a supernatural God, from the self-grounding mystery of Godless nature to the wondrous divinity beyond being and not-being of the great mystics. We shall explain how this neutrality is possible below but state the two associated limitations here. First, there are some theological and existential-philosophical perspectives from which this posture of maximizing neutrality necessarily dooms our project because, it is held, ultimacy can only be discussed fairly if its reality and efficacy are fully accepted. We take this dictum seriously because it is the view of so many theologically serious viewpoints in the world's religions. We think, however, that it can only be evaluated empirically on the basis of the success or failure of projects that set it aside, as ours does. Second, our attempt to be as ontologically neutral as possible in the constructive phase of the essay avoids a self-defeating reductionism by making use of a philosophical framework drawn from semiotic theory (the theory of signs).[5] Some philosophical complexity is the inevitable result, but we try as much as possible to deal with the philosophical details in footnotes and only introduce them as they are needed toward the end of the essay.

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[3] A similar analysis holds good, we think, for cognitive science. This is as true now—see Fraser Watts's essay in this volume—as it was a quarter of a century ago; see Allen Newell, "You Can't Play 20 Questions with Nature and Win: Projective Comments on the Papers of This Symposium," in *Visual Information Processing: Proceedings of the Eighth Annual Carnegie Symposium on Cognition*, William Chase, ed. (New York: Academic Press, 1973), 283–308.

[4] One component of this challenge is to develop cross-cultural comparative religious categories and the means to criticize and improve them. This is the goal of a series of volumes forthcoming from the Cross-Cultural Comparative Religious Ideas Project, directed by Robert Cummings Neville, Peter L. Berger, and John H. Berthrong, to be published by SUNY Press. The first of these, *The Human Condition*, is scheduled for publication in 1999. Subsequent volumes, to appear in 2000, are *Ultimate Realities* and *Religious Truth*.

[5] The elements of semiotic theory that we use are drawn especially from the pragmatic philosophy of the North American philosopher Charles Saunders Peirce, whose paleopragmatism (the apt designation of Robert C. Neville) is to be distinguished sharply from the neopragmatism of Richard Rorty. See section 7, below, for a more detailed account of the salient points.

Third, we acknowledge other difficulties: our analysis of religious experiences is not, in fact, independent of considerations in the philosophy of mind bearing on the ontological complexities of the mind-brain problem.[6] Nor is it independent of the various problems of consciousness, including the "hard problem" of first-person experience.[7] And we are forced to take a provisional stand on the notoriously controverted problem of defining religious experience. We shall assume that we can pursue our own line of investigation in spite of these and other complications.

1.4 Focus: "Experiences of Ultimacy"

Religious experiences include experiences in religious groups, as when worshiping, and experiences alone, as when meditating or in prayer. They may be mundane or sublime, wordlessly simple or replete with ideas. They include drawn-out periods of character transformation and spectacular episodes of conversion. This suggests too vast a diversity to describe all at once, so we need to define and name a target group of experiences.

The target group is determined by our interest in eventually developing a model that will be useful for discussing the ultimate causes and value of religious experiences (see section 7 below). We need to include experiences that religious people say are caused by God—whether correctly or mistakenly is unimportant at this stage. This narrow group of experiences conceivably might be called "God experiences."[8] This phrase is inappropriate for designating experiences within non-theistic religions, however, so we use the vaguer, more inclusive phrase, "experiences of ultimacy,"[9] which also expands the target group significantly.

Defining experiences of ultimacy more precisely is a complicated task, for two reasons. On the one hand, the way people describe their experiences crucially depends on the particular social and linguistic contexts in which the descriptions are used. On the other hand, we cannot know with certainty the contents of other minds,

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[6] On the mind-brain problem, see Daniel C. Dennett, *Consciousness Explained* (Little-Brown and Co., 1991); Roger Penrose, *Shadows of the Mind* (Oxford and New York: Oxford University Press, 1994); and John R. Searle, *The Rediscovery of the Mind* (Cambridge and London: The MIT Press, 1993).

[7] On the "hard problem" of first-person consciousness, see David J. Chalmers, "Facing Up to the Problem of Consciousness," *Journal of Consciousness Studies* 2.3 (1995): 200–19, and idem, *The Conscious Mind: In Search of a Fundamental Theory* (New York: Oxford University Press, 1996); J. Levine, "Materialism and Qualia: The Explanatory Gap," *Pacific Philosophical Quarterly* 64 (1983): 354–61; and Thomas Nagel, "What Is It Like To Be a Bat?" *Philosophical Review* 83 (1974): 435–50.

[8] This is the terminology used in Michael A. Persinger, *Neuropsychological Bases of God Beliefs* (New York and London: Praeger, 1987).

[9] "Ultimacy" is a better category than "God" for registering the primary goal and object of a wide variety of religious traditions. Of course, the term "ultimacy" has to be construed sufficiently vaguely to comprehend the ultimate realities of religious traditions that think in such terms (such as most strands of the Abrahamic traditions and much of Hinduism), the ultimate paths or ways of religious traditions that subordinate questions of ultimate realities (such as strands of Buddhism and Hinduism), and the many ultimates of religious traditions that tend to avoid speaking of encompassing ultimates of either variety (such as strands of Chinese religion). In fact, most or perhaps all religious traditions thematize ultimacy in a variety of ways, ranging on one axis from ultimate realities to ultimate paths and on another axis from explicit to implicit formulations. When ultimacy is construed so as to take account of such variations, it is the optimal comparative category for our purposes.

so it is hard to know whether we are describing the same experiences even when we use identical descriptions within a single social-linguistic context. These considerations draw our attention to the hermeneutical circle connecting social-linguistic context and individual descriptions of ultimacy experiences.[10] While some might welcome relativism of descriptions as a way of protecting religious experience from scientific scrutiny, we treat it as a problem to be overcome. Our efforts can only be useful for questions about the causes and value of ultimacy experiences (the focus of section 7) if there is a way to determine, at least approximately, when and what sort of ultimacy experiences occur (the focus of section 6).[11]

Many attempts to define religious experiences have been made. We think most of them are flawed but we have found their insights quite helpful, as the following examples show. First, some definitions rely on phenomenological characteristics to circumvent the problem that people's descriptions are unreliable (for example, William James). This is wise, and we think that a sense of oneness with the divine and a sense of awe are good phenomenological markers for some experiences in our target group. Yet we cannot rely solely on a phenomenological approach to defining our target group because phenomenological reports are themselves subject to hermeneutical difficulties.[12] Second, some definitions focus on the irrational and usually spectacular elements of religious experience (for example, Rudolf Otto). This is useful because the phenomenological markers are easy to identify in those cases. However, we also want to include the more rational experiences surrounding the forming and changing of convictions and behaviors. Particularly interesting for understanding the causes and value of religious experiences are the sometimes mundane-seeming, sometimes spectacular experiences of conversion and character transformation, which typically involve both irrational and rational elements. Third, definitions focusing on individual experiences make obvious sense, and yet the role of the social-linguistic context is easy to overlook. We wish to pay close attention to the way social-linguistic contexts condition an individual's description of ultimacy experiences, for which a rich resource is the refined judgment of religious groups concerning the authenticity of claims to conversion and character transformation. Fourth, most definitions focus on what people are willing to call religious experiences, but we also want to include in our target group episodes in the lives of non-religious people who do not have the category "religious experience" at their

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[10] This hermeneutical circle can be described by defining the social-linguistic context as the domain (1) in which experiences of ultimacy are described and redescribed, (2) in relation to which people form their expectations about experiences of ultimacy, (3) under the influence of which people learn how to use the words that will later help them describe their own ultimacy experiences, and (4) by means of which people's descriptions of their experiences are assessed, corrected, and regulated.

[11] It is important to note that detecting authentic ultimacy experiences is not merely an academic instinct imposed on religious practice. It is a pressing concern for religious groups as well, many of which have developed sophisticated methods of discernment to help make the judgments they want to make about the authenticity of religious experiences.

[12] The difficulties of too narrowly phenomenological an approach to delimiting the target group are as follows. First, this approach is precarious through its exclusive dependence on people's descriptions of religious experiences; phenomenological description requires skills in reporting that most people do not have. Second, the exclusively phenomenological approach to definition tends toward too narrow a definition, de-emphasizing many important features of religious experiences, especially those surrounding conversion and character transformation.

disposal. Nonreligious people sometimes describe their experiences in ways that lead religious people to call them "religious experiences."[13] Moreover, such experiences sometimes appear to be potent forces for character transformation. We conjecture that people's self-identification as religious or nonreligious is not an overriding consideration in determining the causes and value of religious experiences.

Having pondered existing definitions of religious experience, we are forced to concede that a precise definition of ultimacy experiences is probably out of the question. Nevertheless, there are several sorts of markers for ultimacy experiences: people's descriptions within social-linguistic contexts, phenomenological characteristics, the judgment of experts in religious discernment or of psychologists, the wisdom of generations encoded in theological and ethical traditions, and even neural signatures. These markers may not always be in complete harmony, as when a phenomenologically spectacular religious conversion is judged inauthentic by a religious group or when a person not affiliated with any religious group refuses to describe as religious an experience that utterly transforms his or her character. Nevertheless, such markers can still be used to evaluate putative experiences of ultimacy. In section 6 we shall give some examples of how this evaluation process might work. The point to be made here is that establishing a process of evaluating putative ultimacy experiences is equivalent to offering a dynamic definition for our model's target group of religious experiences. The resulting definition is dynamic in two senses. On the one hand, applying the definition in any given instance requires running through the process of evaluating the various markers for ultimacy experiences and remembering at the same time that there is a complex taxonomy of such experiences whereby different types are associated with different sets of phenomenal characteristics. On the other hand, the definition is not dyadic, excluding some experiences and including others. It is more like a set of targets, with the ultimacy experiences closest to the bull's eye for each type being those with the strongest agreement among markers.

Diagram 1 (see Appendix B) illustrates both the relation between ultimacy experiences and other experiences and the complex process of definition that we need to develop. The various considerations relevant to the description of ultimacy experiences are introduced in the next section and discussed in detail in sections 2–5. How all of this descriptive work contributes to a dynamic process of definition is described in section 6. The causal model of ultimacy experiences developed in section 7 is built on this descriptive foundation. As complicated as they are, we think experiences of ultimacy are delineated well enough for us to proceed with trying to describe them.

1.5 Components: Four Perspectives on Ultimacy Experiences

We gather the considerations we use for the description of ultimacy experiences into four groups. Two—the phenomenological and the social-psychological—refine our understanding of the fundamental dialectic between individuals and social-linguistic contexts; it is within that dialectical tension that the meanings of descriptions of ultimacy experiences are established. The other two components are less closely bound to the social-linguistic systems. One is neurology, which may in the future

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[13] There are accounts of this sort in William James, *Varieties of Religious Experience: A Study in Human Nature* (New York: Longmans, Green, 1902).

contribute criteria to the task of assessing ultimacy experiences. The other is theological or ethical convictions that stipulate criteria for authenticity of claims to experiences of ultimacy in the form of correlations between such experiences and the behavior of those that have them. Theology sometimes also ventures to stipulate the specific causes of certain kinds of ultimacy experiences. We shall introduce each of these four components briefly and then devote the next four sections to a more detailed discussion of each.

First, phenomenological description of ultimacy experiences furnishes a thick description of their quality and relations to other events and experiences.[14] Phenomenological description depends on intensifying a linguistic system with new vocabulary and meanings, which allows experiences to be described with great nuance and precision. We may think of Rudolf Otto's phenomenology of numinous experiences (see section 2.2). Or we may think of Søren Kierkegaard's three-staged phenomenology of religious conversion and character transformation from the aesthetic to the ethical to the religious (see section 2.5). These and other phenomenologies, we take it, often induce strong feelings of recognition in those who read them; they often succeed in evoking assent when the reader is sensitive enough to grasp the enhancements of the linguistic system that the phenomenologist is trying to establish.

The second set of considerations derives from neurology. It is questionable whether brain states and processes can be correlated with personal descriptions of purported experiences of ultimacy at the present time, or ever. To the extent that correlations become possible, however, they would promise objective access to internal experiences through functional imaging and other measurements of brain activity, even as phenomenology promises objective access to internal experiences through disciplined cultivation of descriptive expertise. Though both neurological scans and phenomenological analyses are somewhat removed from the day-to-day use of linguistic systems to describe ultimacy experiences, both are relevant factors in the hermeneutical mix and presumably neurological considerations will become more important with time, even at the level of the individual religious person's self-consciousness.[15] Furthermore, neurological correlates could conceivably lead to criteria for "false positives" with the potential to weigh against the authenticity of

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[14] We must provisionally set aside the philosophical commitment of phenomenologists such as Edmund Husserl to the possibility of achieving public, objective descriptions of internal conscious states through his phenomenological method. If this Husserlian claim is correct then the problem of other minds is essentially overcome and there is powerful evidence both for the autonomy of experiences of ultimacy and for the capacity of experiences of ultimacy to amend descriptions of them; it is not a matter of "hermeneutics all the way down" after all. Of course, even this result would say nothing about the cause of ultimacy experiences (though some phenomenologists would insist that this too could be determined), for their shared features may derive from the biological givenness of human beings or similar factors. But we cannot evaluate even this moderate claim adequately here and so must proceed by thinking of phenomenology as a disciplined development of part of a social-linguistic network so that that network becomes dense and sensitive enough to permit a properly trained person to make subtle discriminations among his or her experiences.

[15] This suggests a humorous image. Instead of demanding that group members handle poisonous snakes, speak in tongues, or give an enlightened answer to a koan, some religious groups might require specific sorts of brain activity as measured by functional imaging equipment. fMRI equipment in place of confessionals? While humorous, scenarios like this are surely not absurd or unlikely in the long term.

ultimacy experiences in spite of personal testimony. By contrast, if experiences of ultimacy turn out to be inconsistently realized or widely distributed across brain structures and variously expressed in brain processes, then they may have no obvious neurological correlates, and neurology would be of correspondingly little use as a criterion of authenticity. Of course, the situation is likely to be somewhere between these two extremes, but not enough is yet known to be sure how useful the neurological criterion will prove to be. And however well it serves as a criterion, it is an important element in any theory of ultimacy experiences.

Third, descriptions of experiences of ultimacy are greatly enriched by experts in psychology and sociology. These experts concern themselves less with the *thick* descriptions of experiences of ultimacy and more with the description of *typical* experiences of ultimacy, attending to how they cohere with other aspects of the human person by means of categories drawn from psychology, ethics, or spirituality. Understanding the processes of emotional and physical development in the typical human person, along with common aberrations, casts reports of experiences of ultimacy into a helpful light. Similarly, understanding the influences of religious groups on individuals allows experts to give nuanced descriptions of the complex social interactions within which many ultimacy experiences occur. Many religious people have at their disposal a vast database of first-hand and second-hand stories of ultimacy experiences in which the before and the after of the episode itself expose typical patterns of behavior. Of course, exceptions are unsurprising and even expected; expert psychoanalysts or religious advisors do not have privileged access to the experiences in question. But even exceptions have a kind of plausibility, perhaps due to thoroughly systematic ways in which typical patterns are broken. A person's chosen description of experiences of ultimacy and the meaning of that description in his or her social-linguistic context are profoundly influenced by such expert readings of the *typical* psychological and behavioral accompaniments of *typical* ultimacy experiences.

The fourth set of considerations is theological in character. Theological theories of ultimacy can be sufficiently detailed to permit stipulation of the psychological and behavioral correlates of experiences of ultimacy. For example, it is almost universally held in theological systems that experiences of ultimacy should transform people's character. The experience of samadhi in Buddhist meditation is supposed to make a person more caring toward other creatures and the experience of assurance in Christian piety is supposed to make a person unaccountably peaceful. These theologically-based beliefs are crucial in the operation of both individual spiritual direction and corporate discernment processes in religious groups, and we think they are also active in diffuse ways, perhaps also more generally ethical than specifically theological in character, in the secular analogues of discernment such as psychoanalysis. Of course, we might well say that theories of ultimacy of this kind should not count in forming our ideas of how experiences of ultimacy should affect people, but this would be an overreaction. Theological considerations function as a source of suggestions and hints as to what psychological and behavioral characteristics should be expected in the presence of an authentic claim of an experience of ultimacy. From this point of view, we would be justified in assuming that theological reflection and ethical theories over the centuries are well placed to give good hints, informed as they are by a wealth of individual and corporate experience. It is not the specifically normative character of theological or ethical reflection that makes these hints useful, therefore, but the long-term functionality of the theological or ethical theories themselves in religious and other groups.

The taxonomy of ultimacy experiences we develop draws chiefly from the phenomenological considerations, with crucial support coming from the neurologically important distinction between short-term and long-term episodes. Social-psychological and theological considerations play especially important roles in the process of distinguishing authentic ultimacy experiences (see section 6). Our model of the causation of ultimacy experiences (see section 7) has little direct use for phenomenological considerations, focusing instead on those that are neural, social-psychological, and theological.

2 Phenomenological Considerations

Phenomenology of religion is a diverse collection of partly descriptive, partly interpretive approaches to religious phenomena.[16] Phenomenological approaches to religious experience typically have been oriented to mystical states and conversions, which are familiar instances of what we are calling experiences of ultimacy. Phenomenologists have directed less attention to other kinds of religious experiences, such as corporate ritual experience and long-term character transformation, which can also be instances of ultimacy experiences.[17] In view of this emphasis, it is unsurprising that studies of religious experiences have often taken over distinctions generated in the phenomenology of religion. As useful as these distinctions may prove in some studies, we use phenomenological observations to divide the territory of ultimacy experiences in a way more congenial to exploring connections with the neurosciences.

We first distinguish ultimacy experiences on the basis of temporal extension because there seems to be a vast phenomenological difference between shorter and longer experiences. The phenomenology of discrete states that can be described as ultimacy experiences involves components having to do with sensory awareness,

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[16] For a review, see Eric J. Sharpe, *Comparative Religion: A History*, 2nd ed. (La Salle: Open Court, 1986), especially chap. 10, pp. 220–50. Sharpe is careful to point out that the phenomenology of religion is basically an attempt at objective description of religious manifestations—places, people, actions, words—that respects the perspective of the religious person and that can help in the task of interpreting the nature of religion. It owes little more than a few key concepts to the philosophical phenomenology of Husserl, and its vaguely defined limits embrace numerous different methodological approaches. Sharpe's characterization is accurate so far as it goes, but the various methodological approaches he has in mind themselves have a history that lives on in their use within the phenomenology of religion. It follows that there is significantly more to the phenomenology of religion than simply objective description. These methodological approaches usually can be traced back to the needs of a discipline to which phenomenological techniques have been applied as a means to fuller understanding. Francisco J. Varela, Evan Thompson, and Eleanor Rosch identify several such methodology-defining allied disciplinary traditions that make extensive use of phenomenology: logical-philosophical analysis of human being, meta-analysis of patterns in existing theories (usually historical, sociological, or anthropological theories), and analysis of techniques used in clinical therapy. See *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge: MIT Press, 1991), xvi–xvii. Theorists in the phenomenology of religion usually add to the basic goal of objective description the aims of one or more of these existing methods of applying phenomenological techniques.

[17] There are important phenomenological studies of the sacred, including sacred ritual and social transactions, which have some overlap with ultimacy experiences. See, for example, Gerardus van der Leeuw, *Religion in Essence and Manifestation*, 2nd ed. with a foreword by Ninian Smart (Princeton: Princeton University Press, 1964; tr. from the 2nd German ed. by Hans H. Penner; originally published 1933).

sense of self, presences, cognitions, and emotions. The phenomenology of extended experiences that can be described as ultimacy experiences divides into two classes. Dynamic processes of orientation and control help people maintain their relations to themselves, groups, and the wider world; these sometimes but not always fall under the ambit of ultimacy experiences. Gradual processes of transformation often take the form of experiences of ultimacy; these processes involve apparently lasting change in behavior, personality, and beliefs.

2.1 Discrete Ultimacy Experiences: Persinger

Michael Persinger includes interesting phenomenological characterizations of discrete ultimacy experiences in his book, *Neuropsychological Bases of God Beliefs.*[18] We find the book rhetorically unstable, with few links to the data he offers in support of his conclusions, few appropriate data in the articles to which he refers, and problematic patterns of interpreting his data.[19] In spite of the book's flaws, Persinger's extensive exploration of connections between temporal lobe function and religious experience leads him to a thoughtful characterization of what he calls God experiences, a phenomenological contribution worth quoting at length.

> God Experiences are transient phenomena that are loaded with emotional references...
>
> The God Experience exists for a few seconds or minutes at any given time. Multiple experiences can occur in quick succession. During this period, the person feels that the "self," or some reference indicating the "thinking entity" becomes united with or "at one" with the symbolic form of all space-time. It might be called Allah, God, Cosmic Consciousness, or even some idiosyncratic label. Slightly deviant forms include references to intellectual abstracts such as "mathematical balance," "consciousness of time," or "extraterrestrial intrusions." These phenomena are similar to mystical states and the more secular "peak experiences."
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> Usually the God Experience involves euphoric and positive emotions. The person reports a type of God high that is characterized by a sense of profound meaningfulness, peacefulness, and cosmic serenity. Invariably the state is perfused with references to reduction of death anxiety. It is defined as the anticipated extinction of the self-concept or "the thinking entity." During the God Experience, the person suddenly feels that he or she will not die. Instead, he or she will live forever as a part of subset of the symbol of all space-time. If the symbol is a father image, then the person expects to become a child of the father. If the symbol is "imageless," the person expects to become a part of the Universal Whole.
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> Sometimes God Experiences can have negative emotional valences. During these periods, the same sense of oneness is pervaded by anxiety and fear. It is the epitome of terror. These experiences rarely happen more than once, except in psychiatric patients; the consequences punish any further display. Labels applied to these experiences reflect the bad, aversive or generally evil components in the culture in which the person survives. Classic references involve "hell," "demon world," or the more abstract "nether world."

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[18] Michael A. Persinger, *Neuropsychological Bases of God Beliefs* (New York and London: Praeger, 1987).

[19] See Persinger, "Religious and Mystical Experiences as Artifacts of Temporal Lobe Function: a General Hypothesis," *Perceptual and Motor Skills* 57 (1983): 1255–62; "Striking EEG Profiles from Single Episodes of Glossolalia and Transcendental Meditation," *Perceptual and Motor Skills* 58 (1994): 127–33; "People Who Report Religious Experiences May Also Display Enhanced Temporal-Lobe Signs," *Perceptual and Motor Skills* 58 (1994): 963–75; "Propensity to Report Paranormal Experiences Is Correlated with Temporal Lobe Signs," *Perceptual and Motor Skills* 59 (1994): 583–86; and "Death Anxiety as a Semantic Conditioned Suppression Paradigm," *Perceptual and Motor Skills* 60 (1995): 827–30.

They are not traditionally called God Experiences, although they are certainly derived from the same source of variance. The self, with respect to space-time and imminent dissolution (death), still dominates the experience.[20]

Persinger goes on to discuss God concepts and how God experiences and God concepts combine in God beliefs. His description of God experiences apparently derives from many interviews and clinical encounters with people who claim to have had them.[21] He strikes the main themes that recur in phenomenological descriptions of discrete ultimacy experiences: they involve modifications of sensory awareness, sense of self, sense of presences, cognitions, and emotions.

2.2 Discrete Ultimacy Experiences: Otto

In *The Idea of the Holy*, Rudolf Otto attempted to describe the irrational or supra-rational elements of religious experience.[22] He focused on what we are calling discrete rather than extended ultimacy experiences, calling them numinous experiences. He argued for the autonomy and uniqueness of numinous experience and he tried to show that it is involved in everything from faint religious stirrings to the most profound mystical experience. Otto characterized their two main features in the phrase "*mysterium tremendum*." He described *tremendum* in terms of three elements: awefulness, overpoweringness, and energy or urgency. He described *mysterium* in terms of the wholly other and fascination.

Otto also discussed the means of expression of the numinous, including how it is awakened in one mind upon seeing its experience described or enacted by another.[23] He pointed out that it cannot be taught or described in such a way to "pass" it on but rather that there must be some independent experience that answers to the descriptions of it that are passed around the group. Thus it can be expressed directly only through an individual's encounter with holy places, holy events, and holy people. It can be expressed indirectly by making use of the ways we express feelings similar to those with numinous elements. Thus he spoke of art and language that convey terror and dread, responses that are capable of evoking numinous feelings of the *tremendum* kind. Under this heading he also mentioned its higher expressions: grandeur and sublimity. Under the heading of the *mysterium* Otto mentioned expression in the form of miracle; that which cannot be comprehended serves as analogy for the mysterium and is capable of evoking it. Under this heading he also treated the only half-intelligible language of devotion, including liturgy, ritual, and some music, as well as many other types of analogies.

One of the great strengths of Otto's work is his focused exploration of the emotional content of numinous experiences. This focus is also a weakness with respect to the desire for completeness of phenomenological descriptions. But even

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[20] Persinger, *Neuropsychological Bases of God Beliefs*, 1–2.

[21] Ibid., xi.

[22] Rudolf Otto, *The Idea of the Holy: An Inquiry into the Non-rational Factor in the Idea of the Divine and its Relation to the Rational*, 3rd ed. (London: Oxford University Press, 1925; tr. from the ninth German ed. by John W. Harvey; first published 1917).

[23] See section 4, below, for a discussion of the function of mirror neurons. This can be thought of as one neurological consideration bearing on Otto's ideas about the awakening of numinous experiences acted on or described by one person in other people. This remains highly speculative, however, because mirror neurons have been studied primarily in relation to motor functions.

this brief summary of Otto's discussion permits an inference that the rest of the book justifies: discrete ultimacy experiences involve modifications of sensory awareness, sense of self, sense of presences, cognitions, and emotions. The characteristic elements of discrete ultimacy experiences appear in both Otto's and Persinger's very different analyses.

Another strength of Otto's work is his argument for the uniqueness and autonomy of the numinous. That is, he believes that the numinous element of discrete ultimacy experiences is objective enough to force particular descriptions and specific forms of concept stretching and cognitive breakdown to appear repeatedly and predictably across the various manifestations of religion. For example, key metaphors recur such as: encounter with a person, reason-transcending mystery, the power for salvation or liberation, peaceful presence, abysmal anxiety, and so on. We find this claim intriguing and return to it below in section 3. However, we think that far too little has been done by way of comparative phenomenology even now to draw Otto's conclusions with his confidence, and he drew them when almost no work had been done.[24]

2.3 Discrete Ultimacy Experiences: Elements

We might well draw other phenomenological descriptions into the mix.[25] We think the same five elements recur in those accounts. In summarizing the phenomenology of discrete ultimacy experiences we will make brief remarks about each of the five elements, indicating some of the variations within each element.

Sensory Alterations. Under this heading we would include perceptions that are incongruous with the current environmental situation. There may be the perception that the surroundings are suffused with light or otherwise perceptually different. There may be auditory or olfactory sensations as well as visions or hallucinations. Related to this category but distinguishable are percepts bearing on the sense of self or on the sense of a presence near oneself, or perhaps a nonlocalized presence (see below).

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[24] There are a number of scholarly traditions in the study of religion that have explored the claim that the sacred or numinous causes the same symbols, myths, and ideas to recur in the world's religions, including most famously the comparative studies of mythology influenced by Carl Jung's theory of archetypes. See, for example, Joseph Campbell, *The Masks of God* (New York: Viking Press, 1959–68), 4 vols.: *Primitive Mythology, Oriental Mythology, Occidental Mythology,* and *Creative Mythology*; and many of the works of Mircea Eliade, including *Cosmos and History: The Myth of the Eternal Return* (New York: Harper, 1959; first English ed., 1954), *Myths, Dreams, and Mysteries* (New York: Harper, 1960), and *Images and Symbols* (New York: Sheed & Ward, 1961). Also influenced by Jung, and an important influence on this trend in religious studies, is structuralism; see especially Claude Lévi-Strauss, *Totemism* (Boston: Beacon Press, 1963; tr. from the French by Rodney Needham). On Jung himself, see Joseph Campbell, ed., *The Portable Jung* (New York: Penguin Books, 1976). The perennial philosophy makes the same claim on a different basis, though not independent of the Jungian emphasis on archetypes. See, for example, Huston Smith, *Forgotten Truth: The Common Vision of the World's Religions,* reprint ed. (San Francisco: HarperSanFrancisco, 1992; first ed., 1965); and Aldous Huxley, *The Perennial Philosophy* (New York: Harper & Brothers, 1945).

[25] See the phenomenological descriptions in, for example, James, *Varieties*; and Eugene G. d'Aquili and Andrew B. Newberg, "Religious and Mystical States: A Neuropsychological Model," *Zygon: Journal of Religion and Science* 28 (June, 1993): 177–99.

Self Alterations. A person may feel as if outside his or her own body. There may be a loss of the sense of the individual self as real or as the source of thought or will, and a sense of merger with the universe. There may be a feeling of union of the self with an entity such as God or the Infinite. There may be a sense of the enlarging of the self accompanied by powerful feelings of compassion and confidence. There may be a sense of the self as profoundly threatened by judgment or annihilation in the presence of a being of enormous power. There may be a sense of altered bodily functions or of the self being taken over by another being (see below).

Presences. In certain discrete states, a person may experience the sense of a presence felt as mysterious or awesome; this may have both positive and negative modulations. A person may feel the presence of nonphysical beings, either benign or evil, such as angels or demons. There may be a sense of being invaded, inhabited, or controlled by such beings.

Cognition. There may be a sudden sense of illumination or profound understanding. There may be a sense of increased awareness, or a sense of the unreality of the world. There may be a conviction of sin or weakness, or a sense of assurance of salvation or emotional and spiritual healing. There is a very important cognitive feature that invariably accompanies all the other phenomena of discrete states: "They are as convincing to those who have them as any direct sensible experiences can be, and they are, as a rule, much more convincing than results established by mere logic ever are."[26]

Emotions. Under this heading we would include intense feelings that are either incongruous with the current context or expressive of a social process that is itself incongruous with usual patterns, such as feelings of ecstasy, awe, dread, guilt, safety, or tranquility. There may be the experience of utter darkness or despair in the quest for mystical union, the mystics' dark night of the soul.

2.4 Extended Ultimacy Experiences: Berger

There are two classes of extended ultimacy experiences. The first concerns dynamic, socially embedded processes of orientation and control in relation to the cosmos, the social world, and one's self. For convenience, we shall call these processes *social ultimacy experiences.* The Durkheimian tradition of the social analysis of religion focuses on such processes but tends to downplay the individual religious experiences associated with them. Peter Berger's *The Sacred Canopy* is more balanced.[27] In particular, Berger blends the Durkheimian tradition with the sociology of knowledge and extends both of them in a direction that is at once more sensitive to individual experiences and more useful for theologically directed inquiries that seek to press questions of truth and causation in relation to ultimacy.

Berger assumes both that "every human society is an enterprise of world-building"[28] and that "all socially constructed worlds are precarious."[29] From these premises he analyzes the role of religion in society. World-construction is a dialectical process between individuals and their social context. Human beings first externalize their being in the world, whereupon the outpouring of themselves is

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[26] James, *Varieties,* 72.

[27] Peter L. Berger, *The Sacred Canopy: Elements of a Sociological Theory of Religion* (Garden City: Doubleday, 1967).

[28] Ibid., 3; see chap. 1, "Religion and World-Construction."

[29] Ibid., 29; see ch. 2, "Religion and World-Maintenance."

objectified both in material social and economic structures and in immaterial ideas
and culture. Finally, these objectivized realities are internalized by individuals,
conditioning their activity and self-understanding. It follows that "the socially
constructed world is, above all, an ordering of experience," a *nomos* that human
beings must construct because, unlike other animals, they are not biologically
equipped with any fixed such ordering; culture and socialization are necessary for
being human.[30] Socialization is most effective when taken for granted. When it is, the
meanings of the constructed nomos embrace the entire cosmos, yielding meanings
for the fundamental questions of human life, a process in which religion plays the
part of creating a sacred cosmos.[31]

> It can thus be said that religion has played a strategic part in the human enterprise of
> world-building. Religion implies the farthest reach of man's self-externalization, of his
> infusion of reality with his own meanings. Religion implies that human order is projected
> onto the totality of being. Put differently, religion is the audacious attempt to conceive of
> the entire universe as being humanly significant.[32]

The precariousness of social order is managed by socialization, as mentioned, but
also by the resistance-limiting mechanisms of social control and, more subtly, by
processes of legitimation. In legitimation, the social order is explained and justified
with reference to ideas that are rendered plausible and even obvious by their having
been already objectified in the dialectical process of social construction.[33] Among
many mechanisms of legitimation, "religion legitimates social institutions by
bestowing upon them an ultimately valid ontological status, that is, by *locating* them
within a sacred and cosmic frame of reference."[34] At least as importantly, religious
legitimation is capable of handling many marginal situations in which the *nomos* is
threatened by ideas or activities not already managed by ordinary socialization.[35]
These marginal situations are common, ranging from dreams and nightmares to
hallucinations and intuitions, all of which were accorded ontologically real status in
most cultures until recent times.[36] They also include discrete ultimacy experiences,
whose religious legitimation serves the interests of maintaining the stability of social
constructions of reality.

In this analysis, human experiences of the sacred orient individuals—in an
enormous range of ways and not necessarily in religious contexts—within a cosmic
environment. They can seem to confirm what religious beliefs assert about the
cosmic meaningfulness of many other experiences and even of the social order itself.

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[30] Ibid., 19.

[31] Ibid., 25.

[32] Ibid., 27–28.

[33] Ibid., 29.

[34] Ibid., 33; Berger's italics.

[35] Ibid., 42–43.

[36] Julian Jaynes makes a great deal of these marginal experiences, both positing a neural
basis for them and developing a theory of religion on that basis. What he calls the bicameral
mind involves the human left-brain with its speech centers in balance with the right brain in
which the areas corresponding to left brain speech produce divine speech; he takes this divine
voice to be a direct expression of the will to act. The bicameral mind has now broken down,
he further supposes, leaving us with bicameral traces in many religious practices and the
conscious entertaining of alternatives in place of direct action on the basis of divine voices. See
his *The Origin of Consciousness*, especially pp. 84–125.

They also threaten the social order whenever they lie beyond the reach of the control achieved by ordinary socialization. Occurring outside of a context in which they are expected and explained, such experiences may upset the stability of the relationship between individual and society. Their occurrence in religious contexts, however, provides an effective means of controlling an individual's engagement with the social order. More than that, ultimacy experiences occurring in such contexts may even enhance social regulation by reinforcing processes of legitimation already active in religious groups: to experience personally is to confirm a group's legitimating claims. In these ways, therefore, ultimacy experiences orient individuals and, when occurring in an appropriately authoritative context, serve social interests of control.

While these effects are relevant to both discrete and extended ultimacy experiences, it is only in the context of an extended process of socially-guided interpretation of ultimacy experiences, which in many cases can themselves be regarded as extended ultimacy experiences, that the effects of orientation and control appear. For this reason, we classify the orientation and control dimensions of religious experiences as extended ultimacy experiences of the social type.

2.5 Extended Ultimacy Experiences: Kierkegaard

The second class of extended ultimacy experiences concerns gradual and chronic experiences of personal change or self-transcendence, such as Confucian self-cultivation, Christian sanctification, and possibly also character changes having little explicit connection with religious symbols and practices. Some conversions are of this extended type. For convenience, we shall call these *transformative ultimacy experiences*. While a vast literature on conversion clamors for attention here, we turn to Søren Kierkegaard's extraordinary phenomenology of the process of transformation associated with extended ultimacy experiences.[37] Intending his analysis as an answer to the great question, "What ought I do?" his answer famously subordinated moral sensibilities to religious ones in the third and final stage of an ongoing process of transformation driven by awareness of an intimate relationship with God. The rationally and ethically transcendent character of religious transformation has been noticed repeatedly and Kierkegaard's classic expression of it is worthy of summary.

The first stage of the religious-moral quest is the aesthetic. This is the search for sensual and intellectual pleasure. Kierkegaard argued that such a search eventually leads to boredom and then suicide and thus that there is an impulse to move to a form of life in which there is a conception of oughtness. The second stage is thus the moral or ethical stage in which we freely align ourselves with the moral law and make a determination to be good. Kierkegaard's arch-enemy was G.W.F. Hegel, who tried to synthesize the moral life and the aesthetic life; Kierkegaard admired Hegel's effort but judged it to be merely the highest form of aestheticism. Kierkegaard argued that

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[37] Kierkegaard is usually neglected as an asset for descriptive tasks such as ours because he is so explicitly passionate an author. His analysis covers much more than conversion, however, and it captures dimensions of the process of religious transformation that most treatments of conversion miss. Moreover, it is the archetypal instance of objectivity of description achieved through passionate inwardness. See Søren Kierkegaard, *Fear and Trembling; Repetition*, ed. and tr. with introduction and notes by Howard V. Hong and Edna H. Hong from the 1st 1843 Danish ed. (Princeton: Princeton University Press, 1983); *Either/Or*, ed. and tr. with introduction and notes by Howard V. Hong and Edna H. Hong from the 1st 1843 Danish ed. (Princeton: Princeton University Press, 1987).

a jump is involved in moving from the aesthetic to the ethical and that we must simply choose. The third stage is the religious, in which we find ourselves driven to suspend ethical concerns in the name of fidelity to an awesome encounter with God (Kierkegaard called this a "teleological suspension of the ethical"). In the religious life, divine command is paramount and true love for God is expressed in the willingness to set aside moral habits and to respond to the divine command with purity of heart. If purity of heart is to will one thing, then for Kierkegaard its highest form is to will not the moral law but God.

Whereas Hegel and also Immanuel Kant took everything, even God, to be consistent with the moral law, Kierkegaard argued that the divine command is rationally unapproachable. The contrast between the moral and religious stages is movingly expressed in the discussion of Abraham and Isaac.[38] Abraham becomes for Kierkegaard the one whose life of faith (the religious stage) transcends moral categories through obedience to God—even rationally and ethically impeachable divine whims; morality derives from God, it does not rule God. According to Kierkegaard God has set us in a situation in which these choices (particularly in the movement from the second to the third stage) cannot be made rationally but are criterionless; this is essential to the life of faith. This is the brutal situation of human life and draws our attention to the fundamental character of decision: one's very soul depends upon it.

Kierkegaard's analysis of what we are calling transformative extended ultimacy experiences highlights the importance of choice and focuses on the existentially potent transformation of personality and character under the influence of profound, ongoing experiences of loyalty to and love for God. It also highlights the way that the transformation of people under the impact of extended ultimacy experiences induces new beliefs about themselves, about ultimacy (be it represented as God or something else), and about their own behavior and choices. Kierkegaard says comparatively little about the social embedding so characteristic of extended ultimacy experiences, which most other accounts, especially in the literature of conversion, stress.

2.6 Extended Ultimacy Experiences: Elements

Extended ultimacy experiences are typically less perceptually dramatic than discrete ultimacy experiences. They may occur in conjunction with episodes of the discrete states described above, however, and they may be strong enough that individuals feel as if they are more or less continually in communication with a deity and receiving assurance or direction in daily matters. Whether explicitly religious or not, we notice several recurring characteristics of extended ultimacy experiences: existential potency, social embedding, transformations of behavior and personality, and transformations of beliefs. All four elements seem important to various degrees in both the social and the transformation types of extended ultimacy experiences.

Existential Potency. Whereas discrete ultimacy experiences can occur in ways that may sometimes leave people wondering what happened and how it might be relevant to their lives, one of the hallmarks of extended ultimacy experiences is the direct existential relevance they are felt to have. The orienting and transforming dimensions of extended ultimacy experiences make this particularly clear.

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[38] See Kierkegaard, *Fear and Trembling*, "Eulogy and Abraham," 15–23, and the subsequent discussion.

Social Embedding. Extended ultimacy experiences make little sense in isolation from a community within which they can be interpreted and by whose interpretation they are made existentially potent. The social embedding is effective in two directions, as we have seen. On the one hand, a person participates in the benefits of the community's interpretive and narrative power. Their experiences of ultimacy are channeled into and through that narrative framework and then focused into transformative potency or the need for orientation to cosmos, world, society, and self. Without this community, the person must self-generate the authority needed to make the assumptions expressed in such orienting and transforming processes plausible and effective, and very few people seem capable of doing that alone, if it even makes sense to do so.

On the other hand, a community mediates the wider society's need for stability (including control of marginal situations created by the occurrence of ultimacy experiences) by means of its participation in social legitimation processes. This control is exercised in a variety of ways. Sometimes social values are reaffirmed in the cosmically loaded narrative offered by the religious group; this is ubiquitous. When ultimacy experiences make that narrative existentially more vivid for individuals, the legitimation of linked social values is correspondingly strong. Other times, the effects of potentially socially disruptive sentiments and even critiques inspired by ultimacy experiences are controlled by being given limited expression within the religious group, releasing tension that otherwise might be socially explosive. This is the case, for example, with shamanic rituals, which are often performed in public: they help people let off steam, as it were, without threatening the social structure or calling its values too much into question.

Transformation of Behavior and Personality. The classic religious expression of behavior and personality transformation is permanent conversion. Conversion occurs when an individual orders his or her life in accordance with the felt reality of ultimacy experiences. Rarely is a conversion experience accomplished under the influence solely of a discrete ultimacy experience, but rather extended ultimacy experiences that result in conversion often occur in conjunction with the more discrete experiences.

It is important to note that, in the absence of discrete ultimacy experiences and a religious social-linguistic context, a nominally nonreligious conversion may take place in the form of character transformation, a combination of behavior and personality transformation. Character transformation is a staple of literature, a well-known example being the novel *Emma* in which the thoughtless young protagonist, at first chided by Knightley, gradually comes to assume moral responsibility herself.[39] Such accounts are usually punctuated by a crisis of remorse in which the protagonist perceives the whole of his or her existence up to that point as morally deficient and shameful.

What are the distinctive features of the new interpretive framework whose internalization marks character transformation? We can think of other instances in which someone is brought into a new interpretive framework—for example, when he or she is introduced to a school of philosophy; or when he or she joins the military and adopts its vocabulary, actions, and modes of thought; or when he or she is psychoanalyzed and adopts certain new concepts for understanding his or her own experiences and actions. In the kinds of transformations we are considering at the moment, by contrast, the interpretive framework has primarily to do with a moral

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[39] Jane Austen, *Emma* (New York: Knopf, 1991; first published 1833).

order—Kierkegaard's movement from the first to the second stage. Now, the self and what is called the moral-social order are fundamentally related, as reflected by the designation of the self as "a location within the moral-social order."[40] Since the transformation in question has to do with participating in a new kind of moral order, the self must inevitably be changed.

A feature of the new kind of moral order in which a person participates, in the process we are calling character transformation, is that it seems to supersede the prior moral order in a recognizable way. For example, in *Emma* the moral order in which the heroine operated at first was one of trivial gossip, shallow amusement, attention to appearance rather than substance, and a disregard for the feelings of others. The question of ultimacy is raised because the movement to a new moral system in all such stories is not just a move to something different: it is a move to something we recognize as better or higher. This implies that there is something unique about the conceptual-linguistic system offered by the moral advisor, something that may be universally recognizable—just as accounts of discrete ultimacy experiences in various cultures are often cross-culturally recognizable. Such accounts are widespread in literature, which we take to mean that the topic of moral development is compelling to human beings regardless of their religious background. Furthermore, we note that such accounts can induce transformative effects in their readers: that is, a narrative depicting a character's introduction to a new moral system can itself promote moral transformation.

The kind of transformation of behavior and personality that we have been discussing thus far seems to encompass both nominally religious and nominally non-religious contexts. But the transformation expressed by Kierkegaard in the leap from the ethical to the religious is specifically religious. It rarely shows up in secular literature; the relativity of moral conventions is sometimes thematized, especially in existentialist literature, but the inevitability of anxiety and despair tend to be the lessons drawn rather than the possibility of a supra-rational, morality-transcending, transformative religious experience. The closest literary analogue for this kind of transformation may be outlaw heroes—not Robin Hood, who is essentially a moral prophet, but early Wild West outlaws such as Billy the Kid or Jesse James. They engage in a teleological suspension of the ethical, with the moral law being defied in service of their own gain. If allegiance to the moral law were suspended for the love of God instead of for personal profit, there would be strong affinity between such figures and Kierkegaard's truly religious person. In religious literature, by contrast, especially in the lives of the saints or in great mystical writings of many religious traditions, the possibility of the truly religious person in Kierkegaard's sense shows up lucidly again and again. Friedrich Nietzsche may have had something like this in mind when he spoke of the *Übermensch*: the person whose morality is autonomously generated out of a rich mystical sensibility rather than being merely a personal appropriation of extant social conventions.[41] Kierkegaard

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[40] Rom Harré, *Personal Being: A Theory for Individual Psychology* (Cambridge: Harvard University Press, 1984).

[41] See Friedrich Nietzsche, *Thus Spake Zarathustra*, in *The Portable Nietzsche*, ed. and trans. Walter Kaufmann (New York: Penguin Books, 1954); and idem, *The Will to Power*, ed. and trans. Walter Kaufmann and R.J. Hollingdale (New York: Vintage Books, 1968). The interpretation of Nietzsche's *Übermensch* is complex; for a penetrating account of its mystical and warrior sensibilities, see Stephen Main, "Abyss Without a Ground: Nietzschean Spirituality and Self-Healing" (Chicago: University of Chicago, dissertation, 1999).

and especially Nietzsche tend to be overly optimistic about what individuals can accomplish independently of sustaining communities. More often, the transformation they describe depends upon a background community even when the transformation itself passes beyond the bounds of the usual for that community, as is typical.

   Transformation of Beliefs. The nature of the beliefs that accompany behavior and personality changes distinguishes religious and nonreligious transformation. The content of a person's beliefs is heavily conditioned by the social-linguistic framework available to him or her from others; thus, religious beliefs are highly variable due to the many cultural contexts in which they arise. In any individual case, they also may depend on the phenomenological aspects of discrete ultimacy experiences, especially when they involve presences and unusual cognitions. In general, the beliefs that accompany religious transformation (conversion) may concern the individual's relation to a higher being or abstract principle—the placing of his or her finite existence into a meaningful context, the worth or value of other living beings, and the general meaning or purpose of the whole of the universe. These beliefs are usually intertwined.

3 Neurological Considerations

As mentioned above, those interested in the neural basis of religious experience are at the mercy of the stage of neuroscience's development during the period in which they are working.[42] As very little was known about the brain in James's time, he was not able to offer detailed neural hypotheses, which has undoubtedly contributed to the timelessness of his writing. Contemporary speculations on the neural basis of religious or mystical experiences tend to be freighted with neuroscientific part-concepts doomed to be left by the wayside (as opposed to tested and rejected) as neuroscience evolves. Nevertheless, while we await the arrival of a general scientific theory of brain function—and only such a theory can render speculations regarding psychological phenomena sensible—we may adumbrate certain links between the phenomena of ultimacy experiences and clinical neurological data.

   These links support a neurological model of ultimacy experiences that we shall rely on in the causal model of section 7, but it is at best a tentative part-model. We try to stay in close contact with physiological knowledge experimentally derived from large numbers of clinical cases in order to reduce reliance on speculation, with the consequence that we can adumbrate our model in some areas while we are forced to give scant attention to other important areas. Other theorists have prized completeness in neurological model making more highly than we have; they have been willing to pay, and indeed have paid, the higher price demanded in the unstable currency of neurological speculation. Both approaches can be helpful, notwithstanding the predictable fate of any detailed neurological speculation at the current time. Relatively complete models such as that of Eugene d'Aquili and Andrew Newberg and that of James Austin[43] have the great virtue of indicating what might be possible even if their detailed descriptions of putative brain states that underpin mystical

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   [42] This view is also expressed forcefully in H. Rodney Holmes, "Thinking about Religion and Experiencing the Brain: Eugene d'Aquili's Biogenetic Structural Theory of Absolute Unitary Being," *Zygon* 28.2 (1993): 201–30.

   [43] See d'Aquili and Newberg, "Religious and Mystical States: A Neuropsychological Model"; James H. Austin, *Zen and the Brain: Toward an Understanding of Meditation and Consciousness* (Cambridge: MIT Press, 1998).

experience place them far from anything that has been established empirically in mainstream neuroscience.[44] The tests of intelligibility furnished by relatively complete speculative models play an important role in subsequent theorizing.

A preliminary point about the relation between disordered brain function and discrete ultimacy experiences needs to be made. Although we have emphasized the similarities between certain types of disordered brain function and some of the phenomena of discrete ultimacy experiences, we do not imply that ultimacy experiences are a form of illness. Unusual mentation, presumably based on unusual brain function, does not imply that the resulting experiences are "wrong": consider mathematical geniuses or individuals with perfect pitch. Conversely, the fact that an individual has temporal lobe epilepsy does not rule out the possibility that she or he is also having ultimacy experiences. That determination would depend on additional criteria (see section 6 below).

3.1 Elements of a Tentative Neurological Part-Model

We begin here by introducing the various elements of our neurological model, which we cluster into three phases: activation, quality, and social-linguistic conditioning.

Neural Expression: Activation. In broad terms, we expect discrete ultimacy experiences to be correlated in family resemblance fashion with neuronal events occurring in medial temporal lobe regions, as has long been thought,[45] perhaps spreading to the hypothalamus, as speculated by d'Aquili and Newberg.[46] It is unlikely that the exact pattern of neural activity in discrete experiences of ultimacy is invariant from one individual to the next. Instead, there may be brain regions that are more or less typically involved in such experiences. If a description of total, real-time brain activity becomes available in the future, we would expect that the neural patterns corresponding to subjective experiences of ultimacy would be variable, bearing family resemblances to one another, with some structures—perhaps anterior temporal cortices or the amygdala—more frequently represented in such patterns than others. In any event, most discrete ultimacy experiences probably require transient activation of the amygdala and hippocampus. Such activation probably occurs spontaneously in normal individuals due to random fluctuations in neuronal activity. This is not to say that individuals could not train themselves to induce such activity: in animal models chronic stimulation produces permanent alterations of

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[44] Rodney Holmes insists in his review of d'Aquili's work that there is not yet any scientific way to confirm much of what the model hypothesizes; see his "Thinking about Religion and Experiencing the Brain." Yet d'Aquili is quite correct that mainstream neuroscience has wanted little to do with brain imaging of religious experience both because it is hard to arrange mystical states on cue and perhaps because of a vague prejudice against religion. This has left the territory to research groups with an ideological agenda, whose results are typically ignored by mainstream neuroscience; d'Aquili and Newberg exclude them, as do we. Were this not the case, effective scientific evaluation of the speculative proposals of d'Aquili and Newberg and other theorists might be more feasible. See d'Aquili's reply to his critics in "*Apologia pro Scriptura Sua*, or Maybe We Got It Right After All," *Zygon* 28.2 (June 1993): 251–66.

[45] Persinger aptly calls them "temporal lobe transients"; see *Neuropsychological Bases of God Beliefs*. Also see Wilder Penfield and Phanor Perot, "The Brain's Record of Auditory and Visual Experience: a Final Summary and Discussion," *Brain* 86 (1963): 595–702; Jaynes's discussion of Wernicke's area, as well as Penfield's and Perot's results in *The Origin of Consciousness*, 107–12; and almost every other neurological study of religious experience.

[46] D'Aquili and Newberg, "Religious and Mystical States."

connectivity in medial temporal structures more readily than in any other brain areas. Whether induced intentionally or not, there may be precursor experiences—certain kinds of concentration or preoccupation—that dispose toward these events.

The neural expressions of social and transformative extended ultimacy experiences are poorly understood and doubtless extremely diverse. In relation to the dimension of control, d'Aquili and Newberg hypothesize a set of neural schemas that underlie the detection of and the striving imaginatively to complete causal sequences of events. They further speculate that these schemas underlie much of the human need of religion for the crucial task of controlling the environment.[47]

Neural Expression: Quality. With regard to discrete ultimacy experiences, there are neurological data relevant to each of the phenomenological elements discussed earlier. With regard to sensory alterations and emotions, experiential phenomena occurring in discrete epileptic episodes, correlated with abnormal electrical discharges, have some similarities to phenomena described during discrete mystical or religious experiences in non-epileptic individuals; see section 3.2 on temporal lobe epilepsy, below.[48] With regard to cognition, data are scarce. However, the sense of conviction that attends ultimacy experiences may be explicable in neural terms; the relevant data are discussed in section 3.3. With regard to self-alterations and sense of presences, neurological data on alterations of person experience are most thought provoking; see section 3.4 below.

In relation to the phenomenal qualities of extended ultimacy experiences, we have little to say specifically about the neural underpinnings of the quality of existential potency. Of course, insofar as this involves cognitive certainty, the process of global semantic matching (mentioned in section 3.3) is relevant. Data on chronic personality changes due to temporal lobe pathology exist, however, and these are important for understanding transformation of behavior, personality, and beliefs; see section 3.5 below. The entire model is also relevant here: it shows how cognitive-somatic-emotional experiences might lead to a revision in stored,

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[47] D'Aquili and Newberg call these schemas cognitive operators:

The cognitive operators we are referring to handle abstraction of generals from particulars, the perception of abstract causality in external reality, the perception of spatial or temporal sequences in external reality, and the ordering of elements of reality into causal chains giving rise to explanatory models of the external world, whether scientific or mythical. Briefly, the inferior parietal lobule on the dominant hemisphere of the brain, the anterior convexity of the frontal lobes primarily on the dominant side, and their reciprocal neural interconnections have been fairly definitively shown to account for causal sequencing of elements of reality abstracted from sense perceptions. The operation of cross-modal transfer, which is specific to the function of the inferior parietal lobule, is particularly implicated in causal sequencing. For convenience we refer to the anterior convexity of the frontal lobe, the inferior parietal lobule, and their reciprocal interconnections as the *causal operator*. Thus the causal operator...organizes [a] strip of reality into what is subjectively perceived as causal sequences back to the initial terminus of that strip. In view of the apparently universal human trait, under ordinary circumstances, of positing causes for any given strip of reality, we postulate that if the initial terminus is not given by sense data, the causal operator automatically generates an initial terminus."

Therein lies the connection to religion, as well as a bold attempt to specify the neural basis for what Immanuel Kant called the transcendental illusion. See d'Aquili and Newberg, "The Neuropsychological Basis of Religions, or Why God Won't Go Away," *Zygon* 33.2 (1998): 190–91.

[48] Of course, there are important differences between the phenomena of epilepsy and experiences of ultimacy. One is that ultimacy experiences are much more likely to be positive in tone, whereas the emotions experienced in complex partial seizures are more usually negative, though dread is fairly common in both cases. Another difference is the stereotypically repeated character of complex partial seizure experiences. This, however, does not prevent us from learning from similarities, where they exist.

generalized representations of self and world. The social embedding of extended ultimacy experiences has neurological connections as well; see section 3.6, which concerns brain functions that allow individuals to participate in the elaboration of social-linguistic systems.

Social-Linguistic Conditioning. Through their interconnections, the brain's neurons form a dense network that functions as a social-linguistic milieu for the interpretation and integration of novel experiences. The social-linguistic conditioning of ultimacy experiences begins with the process of global matching (already mentioned) and continues in enormously complex ways to allow individuals to participate in the performances and narratives of the larger social world, and to incorporate these into neural semantic structures. Neurological data relevant to social-linguistic conditioning are discussed most directly in section 3.3 below.

The remainder of section 3 discusses the five important classes of relevant neurological data alluded to in this introduction. Most of the data we treat derive from careful study of many clinical cases. One part of our account—global matching—is more speculative. It derives from a well-articulated theory of how the hippocampus and neocortex interact during normal learning; the theory is based in part on experimental evidence and in part on neural net simulations of semantic learning. The data we discuss involve no necessary religious content but rather bear on general processes for making sense of any current episode or information.

3.2 Temporal Lobe Epilepsy and Discrete Alterations of Experience

Deep within the anterior end of the temporal lobe in each hemisphere, below the cortical surface, lie two phylogenetically ancient structures: the amygdala and the hippocampus. Under normal conditions, the amygdala links incoming, highly processed sensory information to somatic outputs through its connections to the hypothalamus, to brainstem centers also involved in visceral control, and to primitive motor centers in the basal ganglia. When the amygdala is artificially stimulated by external electrical sources in human patients, somatic events that accompany emotions—sensations of tightness in the chest or piloerection ("goose bumps"), for example—are often produced. Visible signs such as pallor or fearful expressions may be seen. Various emotions, usually unpleasant, are often reported. The hippocampus is known to play a significant role in memory processes: disruption of its normal activity may cause failure to encode events. Because the hippocampus and amygdala lie adjacent to one another and are interconnected, they are often considered as a functional unit in investigations of the clinical effects of stimulation. It is also possible that the cortices immediately surrounding them, on the ventral and medial surfaces of the temporal lobe, are activated by electrical discharges occurring in these deeper structures. Cognitive experiences such as déjà-vu (the feeling that what is currently before one has been seen before) frequently result from stimulation of the medial temporal lobes, as do unpleasant emotions and brief mnemonic episodes.[49]

In animal models, the amygdala and hippocampus have very low thresholds for the induction of spontaneous seizures in response to chronic, low-level electrical stimulation. In clinical populations, these structures are often the source of complex

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[49] See Eric Halgren, R. Walter, D. Cherlow, and P. Crandall, "Mental Phenomena Evoked by Electrical Stimulation of the Human Hippocampal Formation and Amygdala," *Brain* 101 (1978): 83–117.

partial seizures (CPS)—seizures characterized by cognitive, affective, or psycho-sensory symptoms, with or without motor automatisms. Unusual experiential phenomena are correlated with repetitive electrical discharges in the temporal lobes. The following descriptions are summarized from a review by G.W. Fenton.[50] Sensory phenomena in CPS can occur in any modality or in several together. Formed visual hallucinations may be simple and static, or intricate and progressing in time. An example of the latter is the image of a man carrying a cane accompanied by a dog. Another patient reported seeing irregular colored triangles replaced by the hallucination of a robber coming after him with a gun. Usually such experiences, and the ones described below, are repeated almost identically each time the patient has a seizure. Vertiginous hallucinations vary from simple sensations such as rotation to more complex sensations such as floating. Illusions can also involve any sensory modality. Objects may appear larger or smaller than they are. Shapes or sounds may become distorted. A limb may feel as if it does not belong to the patient or it may seem detached.

Any emotion may occur as a seizure phenomenon. The quality ranges from a crude undifferentiated welling up of feeling intruding on the patient's consciousness and unrelated to anything in the immediate environment, to highly refined feelings related to ongoing events in the environment. Fear is the most frequent. Pleasurable experiences are rare (sudden feelings of ecstasy, elation, happiness, serenity, or relaxation) but do occur. Unpleasant emotions that cannot be identified by the patient are not uncommon. The physiological basis of pleasurable versus unpleasurable experiences in CPS is unknown.

Under the category of cognitive symptomatology occurring in CPS, Fenton describes three subgroups. The first is ideational. The most common of this type of symptom, according to Fenton, is forced thinking—that is, the subject is incapable of resisting or putting out of his head some repetitive thought. The thought itself can be subjective, as in an idea such as death or immortality; it can be objective, as in a fixation upon a phrase read or heard before the attack; or it can be unidentifiable and impossible to recall after the attack. The second category is dysmnesic. Illusions of memory are common in CPS. These include déjà-vu, déjà-entendu, and déjà-vécu (these are encompassed by our usual use of the term déjà-vu), which are illusions of familiarity, and jamais-vu, jamais-entendu, and jamais-vécu, which are illusions of unfamiliarity. Other cognitive experiences in CPS include disturbances of time perception and the feeling that the world is not real (derealization). An additional cognitive phenomenon worthy of note in CPS is depersonalization; that is, the feeling that one's self is not real or that one is seeing one's body from an outside location. We discuss this below, in section 3.4.

There are theories regarding the anatomical basis of somatic, affective, mnemonic, and cognitive experiences arising from temporal lobe dysfunction. Somatic and affective phenomena are ascribed to the activation of amygdala efferents, such as those to the brainstem and hypothalamus mentioned above. Mnemonic phenomena (memories) are thought to be evoked when either the amygdala or hippocampus activates more widespread cortical areas in which networks of neurons encode records of sensory experience. The cognitive experiences are less well understood, however. According to some theories, the

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[50] See G.W. Fenton, "Psychiatric Disorders of Epilepsy: Classification and Phenomenology," in *Epilepsy and Psychiatry*, E. Reynolds and M. Trimble, eds. (New York: Churchill Livingstone, 1981), 12–26.

hippocampus matches current experience with previously encoded episodes: possibly, if a match is falsely created, the experience of déjà-vu could occur. M-Marsel Mesulam speculates that unusual neuronal discharges in medial temporal structures might disrupt the normal "balance between affect on one hand and perception and thought on the other."[51] He considers phenomena such as déjà-vu and feelings of unreality to be a combination of sensory and affective experience.

The occurrence of derealization in CPS suggests that the conviction of the undeniable reality of ongoing experience—our usual stance towards the flow of events—depends on temporal lobe mechanisms. Experiences of déjà-vu teach us that the sense of familiarity can go awry; similarly, derealization phenomena suggest that the sense of conviction of reality can go awry as well. Just as the sense of familiarity can be either inappropriately missing (jamais-vu) or inappropriately present (déjà-vu) due to altered neural activity, the sense of conviction of reality might be affected by altered neuronal activity in the temporal lobe. We speculate that the conviction of reality, to which we now turn, depends on a process of global semantic matching that takes place in the temporal lobes.

3.3 Semantic Processing of Discrete Experiences

Semantic memory refers to stored information that is impersonal, and includes knowledge of words and their meanings, knowledge about objects and their interrelationships, and also general information about the world (e.g., knowing the meaning of the word *generous*, knowing the capital of France). Episodic and semantic memory are considered to be closely related and to interact with each other continuously.... Thus semantic knowledge is at least partly built up from information first acquired via episodic memory. Conversely, episodic memories have to be interpreted within the framework of existing semantic knowledge.[52]

Neuropsychological investigations show that the hippocampus is responsible for recording each new experienced event; however, permanent storage takes place gradually as a result of changes in the temporal cortex. According to one model, "repeated reinstatement of the hippocampal memory results in an accumulation of subtle neocortical changes, allowing the new memory (either episodic or semantic) to be integrated gradually into existing neocortical networks."[53]

The following clinical case, a patient with a progressive deficit in semantic memory, highlights the centrality of semantic processing and indicates its probable anatomy.[54] When the patient presented for evaluation, he had a five-year history of word-finding problems and recent problems with word comprehension. As his comprehension continued to decline, his everyday functioning became impaired. "For example, on one occasion, A.M. put orange juice in his lasagna and on another,

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[51] M-Marsel Mesulam, "Dissociative States with Abnormal Temporal Lobe EEG: Multiple Personality and the Illusion of Possession," *Archives of Neurology* 38 (1981): 176–81; the quotation is from 181.

[52] A. McKay, P. McKenna, P. Bentham, A. Mortimer, A. Holbery, and J. Hodges, "Semantic Memory Is Impaired in Schizophrenia," *Biological Psychiatry* 39 (1996): 929–37.

[53] J. McClelland, B. McNaughton, R. O'Reilly, "Why There Are Complementary Learning Systems in the Hippocampus and Neocortex: Insights from the Successes and Failures of Connectionist Models of Learning and Memory," *Psychological Review* 102 (1995): 419–57, cited in Kim Graham and John Hodges, "Differentiating the Roles of the Hippocampal Complex and the Neocortex in Long-Term Memory Storage: Evidence from the Study of Semantic Dementia and Alzheimer's Disease," *Neuropsychology* 11 (1997): 77–89.

[54] This is summarized from Graham and Hodges, "Differentiating the Roles."

brought the lawnmower up to the bathroom when he was asked for a ladder." Brain imaging revealed marked atrophy of the inferolateral temporal lobes bilaterally, the left more than the right. Subsequent studies have confirmed an association between atrophy of the temporal lobe cortex, especially on the left, and semantic dementia.

Schizophrenic patients may also have relatively severe compromise of semantic knowledge. D. Tamlyn and others showed that of sixty schizophrenic patients, "nearly a quarter made significant numbers of errors on sentences like *rats have teeth* and *desks wear clothes*."[55] In this context, A. McKay and coauthors suggest that a "hyperfunctional" semantic memory could explain delusions—a person's "knowing" (that is, believing) things that are untrue.[56] We develop this suggestion somewhat differently as follows.

For background to our proposal, we return to the hippocampus. "Within the hippocampus itself, we assume that the event or experience is represented by a sparse pattern of activity in which the individual neurons represent specific combinations or conjunctions of elements of the event that gave rise to the pattern of activation."[57] These patterns would have arisen from activation of neocortical areas representing features of the experience, ultimately feeding into the hippocampus via its primary input source, the entorhinal cortex. The patterns are considered to be codes for the conjunctions of features that make up an experienced event.

In analogy to data compression schemes used for computer files, the information contained in neocortical patterns is thought to be redundant, and thus compressible. Fewer synapses are needed for storage of the information in the hippocampus than in the neocortex. The compressed version is called a "summary sketch." Compression is assumed to occur from the neocortex to the hippocampus, with decompression going the other way. If there are several way stations going in and out—and there are, including the perirhinal cortex and the parahippocampal gyrus—then compression-decompression can be sophisticated.

When a new event takes place—consisting of internal, somatic sensations as well as external ones—it would first be sparsely represented in a pattern of hippocampal connections, then decompressed in temporal cortical regions surrounding the hippocampus for transfer to neocortex. The transfer is essentially an interaction between temporal cortical patterns and extant widespread neocortical patterns in more primary sensory areas. Connectionist models suggest that the throughput to the neocortex is straightforward if global characteristics of the event pattern are already shared to a large extent with representations in the neocortex. However, when new input is at odds with what is already stored, widespread alterations in the overall performance of the neocortical network result.

We can recast the hippocampal-neocortical interaction as follows. In normal circumstances, the continuity of current events with representations of prior events— a match not at the level of "has this single event occurred before?" but at the more global level "is this event consistent with all I know?"—takes place seamlessly, the ongoing, unnoticed internal response being, "yes...yes...yes." This "yes" is another way of describing a straightforward decompression—a good enough fit—between

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[55] D. Tamlyn, P. McKenna, A. Mortimer, C. Lund, S. Hammond, and A. Baddeley, "Memory Impairment in Schizophrenia: its Extent, Affiliations and Neuropsychological Character," *Psychological Medicine* 22 (1992): 101–15. Quoted in McKay et al., "Semantic Memory."

[56] See McKay et al., "Semantic Memory."

[57] McClelland et al., "Why There Are Complementary Learning Systems," 423–24.

currently formed patterns of synaptic activity in the hippocampus and pre-existing, more widespread patterns in surrounding cortices. When an event occurs that does not match what we know about the world, it is usual to experience the event as unreal, at least transiently.

We speculate that ongoing global matching is the basis for a background feeling of the reality of current experience that is generated by temporal lobe processes. We furthermore suggest that global matching is a personal semantic process, meaning that it depends on accumulated knowledge of the way events, objects, and the self normally relate. Every complex, unique experience can be globally matched if it can be made consistent with some region of the total semantic network that the individual has constructed. It is unlikely that a patch of temporal cortex (corresponding to areas that are atrophied in patients with semantic dementia) contains all the semantic information and relations that an individual possesses. It may be, however, that such a patch of cortex is critical in the decompression process, indexing the web of relationships that the person has been building throughout his or her life by accessing the bits and pieces represented elsewhere in widespread regions of cortex.

We can imagine what would happen if decompression cortices began to behave anomalously, as they might in the context of spreading electrical activity from the nearby hippocampus or amygdala. They might falsely send signals that declare, "Current experience has successfully been matched and incorporated into the global semantic network." Or they might declare the opposite. In the latter case, the person might have a feeling that the event just then occurring is unreal. In the former, he would decide that his current experience, however unusual, is real. He would then be faced with the subsequent problem of incorporating a bit of "real" experience into a network with which it is not compatible. The unusual but real-seeming experience could be denied access to larger networks—walled off in some way—or it could force changes in the rest of the semantic economy.

We do not know what occurs when a real-seeming bit of experience must be incorporated into a global semantic network with which it is incompatible. It is possible that the brain might go into a state of widespread, heightened activity when it is necessary to update and revise widespread semantic networks in light of an anomalous experience. Such widespread revision would probably produce heightened metabolic activity throughout the brain as large numbers of synaptic connections are modified, a state that might be experienced as positive. Anecdotally at least, when persons who are working on a difficult problem suddenly see a new way to look at it, a way that forces revision of many of their previous assumptions, the experience may be described colloquially as a "rush."

However, not all unusual experiences that are accepted as real succeed in forcing widespread semantic re-organization so as to become integrated into the individual's total experience of the world. Mesulam described a series of twelve patients with clinical or EEG signs of temporal lobe epilepsy, some of whom developed dissociative disorders (commonly known as multiple personality disorders), some of whom had delusions of possession, and one of whom had elements of both. Based on his analysis, he speculated, "It is conceivable that autonomous mental events that originate in the nondominant hemisphere are more likely to lead to dissociative states, whereas those that originate in the hemisphere dominant for language may be more likely to be adopted as part of the self."[58] There has been no further research to shed light on his theory.

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[58] Mesulam, "Dissociative States," 181.

Referring to seizure events, Fenton states, "It is important to note that this altered content of consciousness constitutes an intrusion upon the patient's ongoing stream of awareness. No matter how vivid, complex or 'real' the ictal experience, the patient recognizes that it is an experience imposed upon him."[59] In other words, Fenton holds that most CPS experiences are recognized as nonreal by the patients. When an individual has a series of experiences that occur in stereotyped fashion many times, it is to be expected that he or she would learn to label these as seizures. However, it is apparent that at least some epileptic individuals do embrace their experiences as real. We speculate that what makes the difference between cases such as those described by Fenton and those described by Mesulam is how the seizure activity affects the anterior temporal cortex, and hence the global matching process that underlies the conviction of reality.

Discrete experiences of ultimacy probably involve the automatic attempt to match the unusual experience with the person's total global semantic network. At this point, the experience could be rejected as "not real," in which case it would not achieve the status of ultimacy. To be an experience of ultimacy, the event must be stamped with what James called "conviction." In analogy to altered experiences of familiarity, we believe the conviction of reality can occur anomalously when neural discharge spreads to the cortical areas that perform global semantic matching. In general, however, the threshold for a match would depend on the contents of previously stored memories and concepts, as well as on the activation of temporal cortical decompression mechanisms. In a religiously acculturated individual with previous ultimacy experiences, the neural threshold for a conviction of the reality of any given ultimacy experience might be quite low. In a person with no previous religious experience or concepts, the unusual experience might have to be "pushed through" by activation of temporal lobe global matching mechanisms; conditions favoring large-scale plasticity of semantic representations in more posterior cortices would also favor global matching in such a case. When a match results due to any of these factors, the individual not only might have (for example) a feeling of extraordinary tranquility and a loss of the sense of the individual self, but he or she would also have the sense that "*This*—however unusual it seems—*is real.*"

Although we can imagine how alterations in the conviction of reality might be effected by mechanisms such as the one proposed here, we do not thereby pre-judge discrete experiences of ultimacy and attendant convictions of reality simply as a breakdown of the neural machinery for accurate judgment. In both everyday experiences and ultimacy experiences, the brain's activity in attempting global matches is likely to be at least as "artful" (to use the terminology of ethno-methodologists) as social practices are in establishing consensual reality. To see brains as either true or flawed mirrors of nature denies the continuous processes of engagement that characterize the relations between brains and the worlds in which they operate. Global matching must depend on neural processes underlying decompression, in interaction with the representations already available in other cortical areas for the assimilation of the current experience, representations that are themselves subject to alteration by the experience.

In the terminology of religious reports of discrete altered states, it is not unusual for an individual to have first a complex sensory experience (such as the conviction of a presence together with a feeling of awe or ecstasy) succeeded closely by the revision of all previous understandings of a certain kind. That is, the previous

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[59] Fenton, "Psychiatric Disorders of Epilepsy," 17.

understanding of garden hoses and stop signs, for example, is unaffected, but previous understanding at higher levels—of the nature of the self and its relation to the universe, of the general principles expressing the nature of the world—is revised, the revision being accompanied by a heightened sense of intellectual perception. In a discussion of conversion similar to the present account, Warren Brown and Carla Caetano postulate that a revision in the brain's semantic networks based on novel religious experience produces a sense of excitement and joy at having discovered a new schema with a better fit to one's life experiences.[60]

3.4 Alterations of Person Experience

The normal human brain attributes subjective life to bodies according to certain rules. The basic rules are (1) one self per body, which "owns" the body and is located in it in a peculiar way, and (2) one identity per mind/body unit. P.F. Strawson termed this mind-body unit the "person."[61] As we shall see, when brain function is disturbed, these rules are broken. Put differently, the affected individual cannot make sense of his or her altered experience of "person" except by changing the rules.

Neurologic disorders may cause alterations in the sense of self; these are known collectively as misidentification syndromes. The brain lesions responsible for these symptoms vary and are often diffuse rather than localized. A survey of the literature on brain injury and misidentification suggests that neural pathways linking representations of the body in the parietal lobes with more anterior temporal structures such as the amygdala, especially in the right hemisphere, must be damaged in order for misidentification to occur.[62]

Occasionally, misidentification syndromes are related to temporal lobe epilepsy, as in depersonalization phenomena of CPS, in which one feels as if one's self is not real, or as if one's body is regarded from some outside location. There are other interesting and more chronic symptoms affecting the sense of subjectivity. In such syndromes, the person can feel as if his or her mind may have been located to another body; or that other minds are taking over his or her own body. Affected people may feel that others around them have had other minds substituted for their "real" ones—that is, that impostors have taken over the bodies of familiars. Alterations of the perception of self in the first person are pertinent to the self-dissolution phenomena that sometimes occur in discrete ultimacy experiences.

The phenomenon of experienced "presences" in discrete ultimacy experiences, by contrast, pertains to other minds. A presence is the representation of another person without the representation of the body. In a sense it is the converse of the illusion of other bodies represented as being without minds, such as zombies or persons with "alien" minds, common percepts in misidentification syndromes. In either case, whether it is the mind that is missing and the body present, or the other

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[60] Warren Brown and Carla Caetano, "Conversion, Cognition, and Neuropsychology," in *Handbook of Religious Conversion*, H.N. Maloney and S. Southard, eds. (Birmingham, Ala.: Religious Education Press, 1992), 147–58.

[61] See P.F. Strawson, "Persons" in *Individuals: An Essay in Descriptive Metaphysics* (London: Methuen and Co., 1959), 87–116.

[62] Regarding the neural basis of misidentification syndromes, see Hadyn Ellis, "The Role of the Right Hemisphere in the Capgras Delusion," *Psychopathology*, 27 (1994): 177–85; and Leslie Brothers, *Friday's Footprint: How Society Shapes the Human Mind* (New York: Oxford University Press, 1997).

way around, the third-person identity is lost. A mind without a body must be experienced in a different way than ordinary persons, as a different kind of being. Furthermore, in mystical or religious experience, it is usual for a presence to be only vaguely or not at all localized in space.

3.5 Chronic Personality Changes Related to Temporal Lobe Pathology

A syndrome of chronic characterological features has been described in persons with temporal lobe epilepsy. Since it is present in the absence of acute electrical activity (the "ictus"), it is termed interictal personality.

> The syndrome includes the following features: increased concern with philosophical, moral or religious issues, often in striking contrast to the patient's educational background, an increased rate of religious conversions (or strongly justified, rather than casual, lack of religious feeling), hypergraphia (a tendency to highly detailed writing often of a religious or philosophical nature), hyposexuality (diminished sex drive sometimes associated with changes in sexual taste), and irritability of varying degree.[63]

David Bear reviewed previous studies of sixty-nine patients who had developed psychotic symptoms on the average of fourteen years after the onset of seizures as follows:

> Affective disturbance was "shown by all patients," most frequently a deepening of emotion... and preserved affective intensity. Delusional ideas appeared in 67 out of 69 patients, mystical religious conceptions being extremely common. Paranoid feelings and explanatory systems justified a diagnosis of paranoid schizophrenia in 46 patients... Hallucinations occurred in 63 patients, typically consisting of formed visual images or conversational phrases experienced with intense emotional significance (e.g., a vision of Christ on the Cross in the sky, the voice of God saying, "You will be healed, your tears have been seen."[64]

In a subsequent paper, Bear and his coauthors wrote,

> The summary traits which most powerfully differentiated temporal lobe epileptics from a mixed psychiatric group were excessive interpersonal clinging (viscosity), repetitive preoccupation with peripheral details (circumstantiality), religious and philosophical preoccupations, humorless sobriety, tendency to paranoid over-interpretation, and moralistic concerns.[65]

The authors also remarked on these patients' "propensity to write extensively—diaries, notebooks, novels, or biographies," noting that this writing often has a cosmological or moral tone. (While Bear's descriptions are widely accepted, not all authors agree with his characterizations of the interictal personality.[66]) To explain the

[63] Norman Geschwind, "Behavioural Changes in Temporal Lobe Epilepsy," *Psychological Medicine* 9 (1979): 217–19; quotation is on 217.

[64] David Bear, "Temporal Lobe Epilepsy—A Syndrome of Sensory-Limbic Hyperconnection," *Cortex* 15 (1979): 357–84; quotation, 363. Reviewed were E. Slater and P.A.P. Moran, "The Schizophrenic-Like Psychoses of Epilepsy: Relation Between Ages of Onset," *British Journal of Psychiatry* 115 (1969): 599–600; E. Slater and A.W. Beard, "Schizophrenia-Like Psychoses of Epilepsy," *British Journal of Psychiatry* 109 (1963): 95–150.

[65] David Bear, K. Levin, D. Blumer, D. Chetham, and J. Ryder, "Interictal Behaviour in Hospitalised Temporal Lobe Epileptics: Relationship to Idiopathic Psychiatric Syndromes," *Journal of Neurology, Neurosurgery, and Psychiatry* 45 (1982): 481–88.

[66] For example, see Dan Mungas, "Interictal Behavior Abnormality in Temporal Lobe Epilepsy," *Archives of General Psychiatry* 39 (1982): 108–11; David M. Tucker, R. Novelly, and P. Walker, "Hyperreligiosity in Temporal Lobe Epilepsy: Redefining the Relationship," *Journal of Nervous and Mental Disease* 175 (1987): 181–84.

interictal personality, Bear speculated that recurrent seizure activity in medial temporal lobe structures causes aberrant synaptic connections to form, resulting in what he termed "sensory limbic hyperconnection." He theorized that these hyperconnections give rise to an overinvestment of perception and thought with affective significance.

Recently, in a preliminary study of two epileptic patients with religious preoccupations, V.S. Ramachandran and his colleagues detected unusually intense autonomic responses to religious images, while other images that usually provoke autonomic activity—such as sexual and violent material—produced less response than in normal subjects. These findings suggest that if hyperconnectivity is responsible for features of the interictal personality, it acts selectively: such new circuits might produce "new peaks and valleys in the patients' emotional landscape."[67] Although the new landscape might yield pronounced religious feelings, this does not prove that there are circuits potentially dedicated to religious belief in normal brains. It is possible, as Ramachandran points out, that certain more general-purpose emotional circuits are simply conducive to religious experience when selectively potentiated.

We consider below, in section 7, the question as to whether the interictal personality belongs within the category of extended experiences of ultimacy.

3.6 Neurological Considerations Relevant to Sociality

Social participation enters into our neural description of ultimacy experiences at several levels. First, the phenomena of ultimacy are rendered intelligible and meaningful to the individual experiencing them by means of the social-linguistic systems of his or her group. We explored above how specialized groups, using their particular systems, interpret aspects of what might be theologically termed divine action in the form of experiences of ultimacy. Second, under the heading of extended ultimacy experiences, we have considered moral transformations of the individual occurring, for example, in dialogue with a mentor. We have said that the fundamental feature of character transformation is the ability to enter into a proffered social-linguistic framework, consequently changing the self by participation in a new moral order. In both cases, social participation is essential.

The neurobiology of human social participation is beginning to be understood.[68] In the course of primate evolution, certain structures that had linked olfaction with social behavior became much more diverse in their connections and differentiated in their architecture. As ancestral primates became diurnal instead of nocturnal, used vision to receive social signals and expressive faces to send them, and lived in more complex social groups, these brain structures correspondingly received input from more extended cortical regions and were able to generate more intricate behavioral responses. A specialization for social cognition appears to involve brain areas that process faces—especially the cortex of the temporal lobes—and deeper structures such as the amygdala and orbital frontal cortex, together with those parts of the frontal cortex that evaluate complex and rapidly shifting contexts. The sophisticated deployment of these circuits is best seen in the demanding face-to-face situation known as conversation.

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[67] V.S. Ramachandran and Sandra Blakeslee, *Phantoms in the Brain: Probing the Mysteries of the Human Mind* (New York: William Morrow and Company, 1998), 188.

[68] See Brothers, *Friday's Footprint.*

The brain structures that subserve social participation are conduits for the transmission of symbolic systems between individuals. Defects in their function would prevent acculturation of the individual by preventing social participation.

Terrence Deacon comments that social attention is crucial for the acquisition of symbols, and discusses the role of the prefrontal cortex in recruiting attention to social stimuli.[69] He also gives great emphasis to the role of the prefrontal cortex in constructing the distributed mnemonic architecture that supports symbolic reference—not just in relation to language, but in relation to human cognition in general, for cognition requires the ongoing construction of novel symbolic relationships.[70] We saw earlier that the matching of current experience with stored semantic memory is likely to involve the temporal lobe cortex. How the functions of this cortex may relate to the prefrontal symbolic system hypothesized by Deacon is still not known. Nevertheless, we have the outlines of a neural system that enables social communication in the first instance and storage of acquired semantic categories subsequently. Such a system would make pedagogy possible, and probably must be intact in order for characterological transformation under the influence of social learning to occur.

Even less well understood, but mentioned here for the sake of completeness, are innate propensities for imitation, seen within minutes of birth in human infants. The rapid and seemingly automatic spread of certain behaviors in groups has been observed in many species of animals, as well as in human beings. Social contagion is observed in human infants in the phenomenon of so-called "contagious crying" that occurs in nurseries. Clues to the neural mechanisms for such behavior may reside in "mirror neurons" studied in monkeys. These "subjectless" neurons fire in response to certain actions both when they are viewed by the animal subject and when performed by it.[71] Certain discrete ultimacy states such as trances and mystical ecstasy seem to be facilitated by group participation. These, then, constitute a further instance of the role of social participation in generating experiences of ultimacy.

4 Social-Psychological Considerations

Experiences of ultimacy can be described from many points of view, each involving characteristic terminology and usually presupposing the social-linguistic framework of some social context.[72] These contexts and vocabularies may be vernacular or professional, religious or secular, theological or nontheological. We need to examine as many thought systems as possible for observations relevant to the multi-faceted model of ultimacy experiences that we propose in section 7. In practice, however, there are two limitations. On the one hand, we have space only to discuss a few lenses through which human beings observe themselves and which can be used to

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[69] Terrence Deacon, *The Symbolic Species: The Co-evolution of Language and the Brain* (New York: Norton, 1997), 272.

[70] Ibid., 266.

[71] G. Rizzolatti, L. Fadiga, V. Gallese, and L. Fogassi, "Premotor Cortex and the Recognition of Motor Actions," *Cognitive Brain Research* 3 (1996): 131–41.

[72] We have found the sociology of religion important for understanding the social-psychological considerations relevant to ultimacy experiences, particularly works influenced by the sociology of knowledge such as Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City: Doubleday, 1966); and Berger's *The Sacred Canopy*.

describe ultimacy experiences (usually under other descriptions, of course). On the other hand, we are limited by not being participants in all such systems. This means that, for any given thought system, we may only turn up a small sample of ideas and observations relevant to experiences of ultimacy. In principle this limitation can be overcome through deeper participation, but we have dealt with it by trying to limit ourselves to systems with which we have some familiarity.[73]

4.1 Psychoanalysis

A number of insights from psychoanalysis have bearing on an adequate understanding of the role of social-linguistic systems in mediating ultimacy experiences.

Early Development. First, beginning with Sigmund Freud, psychoanalytic theorists have postulated psychological developmental stages through which children naturally progress. The idea of developmental stages provides a richly descriptive framework for characterizing the various ways in which self, other, and the world may be experienced. Adults are viewed as the products of developmental processes, with highly individual and more or less successful outcomes. Freud's scheme of stages of libidinal development[74] has been succeeded by others such as those of Margaret Mahler's separation-individuation scheme[75] and Heinz Kohut's focus on narcissism and the self.[76] William Meissner[77] and Ana-Maria Rizzuto[78] have thoughtfully elaborated some connections between such stages and the possibilities for experiences of faith. These later psychoanalytic theorists have tended to remain neutral to the question of the cause of experiences of ultimacy, while providing rich psychological frameworks within which the potently transformative effects of ultimacy experiences can be understood.

Subject and Object. Second, D.W. Winnicott has written on the transitional object, that part of experience that is in between being self and not-self. In a telling sentence, he says, "In the rules of the game we all know that we will never challenge the baby to elicit an answer to the question: did you create that or did you find it?"[79] The position suggested by this quotation has interesting implications for interpreting personal experiences of ultimacy because it provides a way of understanding how

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[73] We think that sociology of knowledge and other sociological lines of analysis would offer especially important perspectives on ultimacy experiences. For example, there appear to be significant correlations between socio-economic status and the types of ultimacy experiences that typically occur, suggesting that economic and class analysis could be quite fruitful.

[74] Sigmund Freud, *Introductory Lectures on Psycho-Analysis, Part III, General Theory of the Neuroses*, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, J. Strachey, ed. (London: The Hogarth Press, 1963; first published in 1917).

[75] Margaret S. Mahler, *The Psychological Birth of the Human Infant: Symbiosis and Individuation* (New York: Basic Books, 1975).

[76] Heinz Kohut, *The Analysis of the Self: A Systematic Approach to the Psychoanalytic Treatment of Narcissistic Personality Disorders* (New York: International Universities Press, 1971).

[77] William W. Meissner, *Psychoanalysis and Religious Experience* (New Haven: Yale University Press, 1984).

[78] Ana-Maria Rizzuto, *The Birth of the Living God: A Psychoanalytic Study* (Chicago: University of Chicago Press, 1979).

[79] D.W. Winnicott, "The Use of an Object and Relating Through Identifications," in *Playing and Reality* (New York: Basic Books, 1971), 89.

ultimacy experiences could be both within the self and from outside. Faith can be thought of as the suspension of the question, "Did you create that (revelatory experience) or did you find it?"

Winnicott's ideas have been further elaborated by Christopher Bollas in the concept of a transformational object, "[a person, place, event, ideology] that promises to transform the self."[80] This concept resonates with temporally extended experiences of ultimacy in the form of conversion or character transformation mediated through a relationship with symbols, rituals, or other persons. As is the case with other psychoanalytic thinkers, these theorists illumine the transformative power of ultimacy experiences. But the power of the ideas of transitional objects and transformational objects to explain personal transformation also indicates something about the social-linguistic entanglements of such experiences: they are crucially linked both with the internal world of the person and with their social-linguistic milieu. The objects of ultimacy experiences function as transitional and transformational objects.

Spiritual Guide. Third, although the term "spiritual guide" is alien to the vocabulary of psychoanalysis, the relationship between the analyst and analysand has received much attention, with results that might enrich a more traditionally theological framework concerned with the role of a spiritual mentor or a non-theological scheme of moral development involving a mentor. The key point is that "The analyst at the outset and throughout the work functions not simply on what he observes the patient *is,* but on what he both infers and implies the patient *might become,* that is, someone with a capacity for realizing further ego growth."[81] On the basis of this insight, a number of concepts have been advanced to capture how the analysand's relation to the analyst produces meaningful change: working alliance, therapeutic alliance, transference, transference neurosis, the holding environment, the transformational object, and others. Radmila Moacanin has also drawn a parallel between the classical guru, or "spiritual friend," and the psychoanalyst.[82] These insights of psychoanalytic theorists are most relevant to temporally extended ultimacy experiences. The "spiritual guide" serves as a trusted source of wisdom by which the social-linguistic environment of the one undergoing transformation is enriched and extended in efficacious ways. This underlines the importance for transformation ultimacy experiences of both flexibility within social-linguistic frameworks and established wisdom about appropriate patterns of social-linguistic change. Personal transformation without social-linguistic flexibility is impossible, and change without the regulation of established wisdom is precarious.

Discernment. Fourth, some of the psychoanalyst's activities are similar to religious discernment (see below for a discussion of the latter). Presentations of clinical cases often center on critical evaluative moments in which the analyst discerns that a bit of unconscious material has been brought to light. Here is a typical example, regarding a patient whose elder brother had died when he was three and who had been unable to reach the analyst by phone during a previous missed session. The analyst writes, "I pondered and puzzled, wondering why on earth he was

[80] Christopher Bollas, "The Transformational Object," *International Journal of Psychoanalysis* 60 (1979): 97–107; quotation is on 14.

[81] W. Poland, "On the Analyst's Neutrality," *Journal of the American Psychoanalytic Association* 32 (1984): 283–99; quotation is on 296, italics in original.

[82] Radmila Moacanin, *Jung's Psychology and Tibetan Buddhism: Western and Eastern Paths to the Heart* (London: Wisdom Publications, 1986), 56–58.

relieved once he had got through to my secretary. Then the truth struck me, 'Ah, of course, he was relieved that I was not dead'. I communicated this to him and he immediately assented. We both realized how great was his anxiety that I would suffer the fate of his elder brother."[83] Now, this example does not involve ultimacy experiences, but analytic discernment is a basic preoccupation of the psychoanalytic community that applies to all patient experiences, including ultimacy experiences. Analytic discernment presupposes both that there are unconscious truths to be discovered and that it is not so easy to figure out what those truths are. Criteria for having discovered unconscious truths include not only the assent of the patient, but also his or her subsequent behavior, dreams, and other communications. The psychoanalyst's role as an expert in discernment underlines the hermeneutical complexity of the social-linguistic systems within which ultimacy experiences must be interpreted. This complexity makes discernment vital in the identification of ultimacy experiences either within religious groups, in the ongoing conversations with spiritual advisors, or in self-evaluation. The meanings of ultimacy experiences are thus typically far from obvious and require as much discernment as does the identification of unconscious truths in the psychoanalytic context.

Based on all that has been said, it seems to us that ultimacy experiences cannot be understood in isolation from a rich appreciation of human dependence on the conceptual-linguistic conditions of the social environments in which people live and change. The previous points express various aspects of this social-linguistic conditioning from a psychoanalytic perspective. But both discrete and temporally extended ultimacy experiences call for a discussion of the provenance of ultimacy experiences in psychoanalytic (as well as other) terms. Psychoanalysis is relevant to this issue in at least two ways.

Role of an External Force or Power. First, one of the key tenets of psychoanalysis is that the unconscious is dynamic, producing effects on conscious life and behavior. In this sense it acts as an external power over which the individual has no control. James wrote, "since on our hypothesis it is primarily the higher faculties of our own hidden mind which are controlling, the sense of union with the power beyond us is a sense of something, not merely apparently, but literally true."[84] The connection James envisaged between the dynamism of the unconscious or "hidden mind" and the religious idea of "higher" control is fascinating and important. On the surface it may seem to be unduly reductive of ultimacy experiences, but we think this would be a hasty conclusion. To identify the unconscious as a locus of ultimacy experiences merely indicates in psychoanalytic terms a part-condition for ultimacy experiences to occur without thereby also demonstrating that there can be no authentic encounter with ultimacy mediated by unconscious dynamics.

Experiences of Loss of Self. Second, experiences of depersonalization or merger states take place in psychoanalytic treatments. These experiences are typically rendered in narrative form using such concepts as drives, self-states, or regressions to earlier developmental stages. An example is J.M. Masson's account of the "oceanic feeling"[85] and other psychoanalytic accounts of the sense of reunion with

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[83] Neville Symington, "Psychoanalysis: A Servant of Truth," in *The Analytic Experience* (New York: St. Martin's Press, 1986), 15–24. Quotation is on 18.

[84] James, *Varieties*, 503.

[85] J.M. Masson, *The Oceanic Feeling: The Origins of Religious Sentiment in Ancient India* (Dordrecht: D. Reidel, 1980).

an omnipotent force.[86] Here we see a correlation between psychoanalytic and religious categories that once again raises the specter of reductionism. The same argument as in the previous point also applies here, however: to render religious descriptions of ultimacy experiences in psychoanalytic categories is not to reduce the former but simply to redescribe them. Such redescriptions and correlations are the way that religious language about ultimacy experiences is connected with other social-linguistic spheres. Such connections are to be desired for the intelligibility they bring to religious categories. To achieve the dual result that religious categories are utterly superfluous and actually misleading through invoking the influence of imaginary entities would require more than just convincing translations between social-linguistic frameworks. In fact, we do not see how any amount of psychoanalytic theory would be capable of establishing such a result.

4.2 Life-Stage Psychology

There are a number of insights into ultimacy experiences to be gained from the psychology of life stages.

Adult Development. Eric Erikson extended the psychoanalytic idea of developmental stages into adulthood. Two such stages are generativity and ego integrity. "Generativity is primarily the interest in establishing and guiding the next generation or whatever in a given case may become the absorbing object of a parental kind of responsibility." A failure to achieve generativity results in stagnation. Ego integrity involves "a post-narcissistic love of the human ego—not of the self—as an experience which conveys some world order and spiritual sense, no matter how dearly paid for...The lack or loss of this accrued ego integration is signified by fear of death."[87] These concepts are useful for describing a gradually achieved personal transformation in conjunction with experiences of ultimacy.

Spiritual Development. Stephen Happel and James Walter[88] cite the work of Lawrence Kohlberg on cognitive-moral development[89]; they show that James Fowler's description of stages of faith development is a further elaboration of Kohlberg's account.[90] Following Fowler, they conclude that religious conversion depends on innate ontogenetic structures that unfold in an invariant way during development.[91] Both Erikson and Fowler offer insights into human development over the course of life that are important for understanding temporally extended ultimacy experiences. Specifically, we learn that the meaning of temporally extended ultimacy experiences shifts with age and spiritual experience. These are further factors modifying the social-linguistic conditions for the understanding and expression of temporally extended experiences of ultimacy.

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[86] Otto Fenichel, *The Psychoanalytic Theory of Neurosis* (New York: W.W. Norton, 1945), 40.

[87] E. Erikson, "The Eight Stages of Man," in *Childhood and Society* (New York: Norton, 1950), 231.

[88] Stephen Happel and James Walter, *Conversion and Discipleship: A Christian Foundation for Ethics and Doctrine* (Philadelphia: Fortress Press, 1980).

[89] Lawrence Kohlberg, *Essays on Moral Development, Vol. 1, The Philosophy of Moral Development* (San Francisco: Harper and Row, 1981).

[90] James Fowler, *Stages of Faith: The Psychology of Human Development and the Quest for Meaning* (San Francisco: Harper and Row, 1981).

[91] Happel and Walter, *Conversion and Discipleship*, 54–60.

Death. Some kinds of discrete ultimacy experiences can be usefully framed within the vicissitudes of adult development, especially the approaching end of life. Persinger thematizes the issue as follows:

> God Experiences... are precipitated by personal crises, such as the loss of a loved one (real or imagined) or the confrontation of an insoluble problem. Certainly the greatest insoluble problem is the anticipation of self-extinction. Death anxiety increases in incremental steps as the person ages and approaches the latter portion of life. God Experiences proliferate during these periods and may even occur as death-bed episodes. The God Experience is followed by a remarkable anxiety reduction and a positive anticipation of the future.[92]

4.3 Evolutionary Psychology

The basic tenet of evolutionary psychology is that the human mind evolved in response to the demands of a hunting and gathering way of life so as to increase reproductive fitness through avoiding predation, assisting kin, finding a mate, and so on.[93] Moral behavior is explained in this theory by the need to promote relationships based on reciprocity, with the effect that the individual represses selfish behavior in favor of altruistic behavior. Evolutionary psychologists speculate that there are universal deep structures for moral beliefs due to common patterns of kin and reciprocity relationships in the environment of evolutionary adaptation. They also invoke self-deception, akin to the psychoanalytic concept of repression, as a means for disguising to oneself one's own selfish interests, in the service of making selfless acts appear more convincing to others.[94]

These ideas have relevance for both discrete and temporally extended ultimacy experiences. On the one hand, the evolutionary-psychological inducements for having certain beliefs and behaviors may be sufficiently strong in some cases to predispose people to discrete ultimacy experiences that are capable of forging or solidifying such adaptive beliefs and behaviors. This is speculative but highly probable in view of the development in at least human beings of a rich emotional life, one of whose effects is precisely the predisposing of people to certain beliefs and behaviors. Discrete ultimacy experiences would seem to be nothing more than a special case of this more general process. On the other hand, the insights of evolutionary psychology are important for understanding the processes of character transformation and increased integration into the moral-social order that are characteristic of temporally extended experiences of ultimacy. Complex social organizations will be most adaptive when stable conformation of individual members to social rules and commitments is achieved. In such social environments, conversion and character transformation naturally take on special significance.

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[92] Persinger, *Neuropsychological Bases of God Beliefs*, 2.

[93] Leda Cosmides, J. Tooby, and J. Barkow, "Introduction" in *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*, J.H. Barkow, L. Cosmides, J. Tooby, eds. (New York: Oxford University Press, 1992), 3–15.

[94] R. Nesse, A. Lloyd, "The Evolution of Psychodynamic Mechanisms," in *The Adapted Mind*, Barkow, Cosmides, and Tooby, eds., 601–24.

5 Theological-Ethical Considerations

A number of theological or ethical perspectives are relevant to ultimacy experiences.[95] Ultimacy experiences are often referred to in stories with theological or ethical overtones (the story of the Buddha's calling and enlightenment, for example). Ultimacy experiences are also presupposed by some theological or ethical concepts (such as Zen's satori or Judaism's repentance). These narrative and conceptual ways of invoking ultimacy experiences are theologically and ethically loaded especially for the groups within which such narratives and concepts play key roles. This makes the experiences presupposed in the narratives and concepts expected and intelligible in those groups. Moreover, people typically describe their ultimacy experiences in terms of the narratives and concepts of their group and the suffusion of such narratives through the shared practices of a group may help to induce the occurrence of particular ultimacy experiences. All of this occurs in part because these narratives and concepts probably encode with tolerable accuracy, in the specialized language of the group, the group's collected wisdom about the way ultimacy experiences occur and the sorts of transformations their occurrence can induce. In what follows, we discuss these dynamics in relation to theological concepts and narratives (5.1), ethical concepts and narratives (5.2), and the way experiences are expressed in language (5.3). Finally, we comment (in 5.4) on the almost ubiquitous yet highly varied processes of discernment that regulate the application of theological and ethical ideas to the ultimacy experiences of individuals within a religious group.

5.1 Theological Concepts and Narratives

Specifically theological concepts active within the social-linguistic environment of a religious group are assigned meanings usually by means of narratives that express the typical experience of group members. These concepts and narratives frequently presuppose that ultimacy experiences of the discrete or extended variety should occur on particular occasions as the narrative is lived out or in particular ways as dictated by the narrative's key concepts. One example drawn from Christianity will suffice to make the point concrete.

The narratives and concepts associated with the Christian understanding of salvation indicate that a process of salvation typically is accompanied by a number of discrete and extended ultimacy experiences. There should be a sharp consciousness of guilt for past weakness and sin, along with a sense of being invited by God (specifically by Jesus Christ or the Holy Spirit) to confess such weakness and sin, an overwhelming sense of peace associated with belief in the biblical promise that God forgives through Jesus Christ when true confession is made, a felt need to be with other Christian people and to be sustained by the sacrament of the Eucharist or Holy Communion, an unaccountable increase in love and tolerance for other people, and a powerful urge to share what has occurred with those both familiar and unfamiliar with it.

Any given experience may vary from this narrative statement of the typical process in two ways. On the one hand, some of the implied ultimacy experiences may occur for some people but not others. In the process of group discernment (see

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[95] George Ellis in his essay for this volume takes up a similar theme in relation to aesthetic experiences and experiences of love (we classify these as socially extended ultimacy experiences bearing especially on orientation).

5.4 below) of authentic salvation, for instance, conformation to the *overall sweep* of the narrative typically is deemed more important than the report of a particular, spectacular ultimacy experience. On the other hand, some groups value certain specific types of experiences that others value less, and the narratives vary across groups accordingly. So Pentecostal Christian groups typically (and thus with variations) expect salvation to be accompanied by glossolalia (so-called "speaking in tongues"); Pietist Christian groups typically emphasize the confession and behavioral change phases; Catholic Christians typically stress the role of the sacraments; and Evangelical Christian groups care more than most about the desire to share the good news of salvation with others—and there are significant variations within each of these types of groups.

In this way, the concept of salvation is stabilized and spreads through a religious group, though with the variations noted. To the extent that there is a shared history of commentarial or devotional literature or a body of narratives enshrined in a common sacred text such as the Bible or universally used rituals, a theological idea can spread to many different groups and acquire different nuances in each context.[96] The history of an idea, its spreading and its variations, is the essential background for trying to make sense of theological descriptions of ultimacy experiences. With this background in place, many theological concepts and narratives can be richly informative about ultimacy experiences and the ways they are described. Without this background, theological language cannot be penetrated very far and analyses of ultimacy experiences depending on theological concepts will be limited by the perspective of those concepts with no way either to discern the nature of the limitation or to overcome it. This is a daunting caveat on the usefulness of theology for interpreting ultimacy experiences because the spread and modification of theological ideas is a complex subject. Much work has been done in this area, however, so it is safe to say that, with care, theology can offer genuine insights into the character of ultimacy experiences.

5.2 Ethical Concepts and Narratives

Many ethical concepts intimate ultimacy experiences in much the same way that some theological concepts do. The Confucian account of the virtues of human-heartedness (*jen*) and ritual propriety (*li*) involves such an ethical narrative.[97] There are staple literary themes with ethical import, such as the dramatic crisis of conscience or the process of character transformation described in *Emma* (see p. 363, above). Other examples might be drawn from political or activist groups such as Greenpeace or Amnesty International, in which the social texture is rich and focused enough to support complex narratives involving stages of commitment and risk in the furthering of the group's aims. The movement through these increasingly demanding stages of commitment is accompanied by changes of values and self-understanding; many of these can be described as transformation ultimacy experiences. Moreover, discrete ultimacy experiences may occur as this process of

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[96] This way of thinking about the spread of ideas is akin to epidemiological analysis of the spread of diseases; this analogy is exploited in Dan Sperber, *Explaining Culture: A Naturalistic Approach* (Oxford: Blackwell Publishers, 1996).

[97] Note, however, that many contemporary interpreters of Confucianism, especially those indebted to the vision of Neoconfucianism, readily treat these ethical concepts and the narratives framing them as essentially religious.

increasingly risky and challenging commitment proceeds; testimonials from within such groups suggest that they do.[98]

There is an important double difference between theological and ethical narratives. On the one hand, *narratives* expressing ethical concepts are less clearly defined and less widespread within and across cultures than theological narratives. This means that specific narratives will typically be less useful for furnishing ethical descriptions of ultimacy experiences than is the case with theological descriptions. Also, ethical descriptions will tend to use ethical terms in a more *ad hoc* way. On the other hand, ethical *concepts* are more deeply embedded in the language and practices of groups across cultures than most theological concepts. Every culture has variations on the conceptual themes of good and bad, loyalty, kindness, generosity, and honesty because these come with any form of social togetherness. Theological concepts are culturally more refined and diverse, by comparison; the cross-cultural diversity in conceptions of divinity or salvation is extreme. That means that ethical narratives are actually needed less to focus ethical concepts than theological narratives are needed to give meaning to theological concepts. It also means that ethical descriptions of ultimacy experiences will tend to draw less on highly structured narratives and more on universally recognizable ethical ideas, even if those ideas vary in content from context to context.

This double difference offers an advantage and a disadvantage to the analyst of ultimacy experiences. The advantage is that understanding the complexities of the spread and modification of ideas is a less crucial precondition for making use of ethical descriptions of ultimacy experiences than is the case for theological descriptions. The corresponding disadvantage is that it is harder to tie down precisely what is meant in an ethical description of an ultimacy experience without a highly structured narrative to guide interpretation. It follows that the insights offered by ethical descriptions will tend to be helpful in a relatively vague way for understanding ultimacy experiences.

Finally, ethical perspectives on ultimacy experiences are most directly relevant to understanding extended ultimacy experiences, especially of the transformation kind, for obvious reasons. They are relatively less useful for aiding interpretation of discrete ultimacy experiences where moral status is frequently unclear. This constitutes both a limitation on the contribution of ethics to interpreting ultimacy experiences and an indication of its great strength.

5.3 Expressing Experiences of Ultimacy in Language

Behind the scenes in what has been said so far about the contribution of theology and ethics to understanding ultimacy experiences is a famous problem that has haunted the phenomenology of religion for years: the development of criteria capable of detecting when dissimilar reports describe phenomenologically similar religious experiences. So dramatic is this problem in relation to theology that, at present, there is every reason to expect neurally and phenomenologically identical experiences to be describable in such different theological terms that the lurking identity would remain undetectable. Theorists have advanced methods proposing to circumvent this

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[98] The occurrence of ultimacy experiences in individual members of groups with striking ethical commitments and potent ethical narratives is worthy of close examination; we have not investigated literature on this subject to discover if anything along these lines has already been attempted.

limitation on ordinary human communication, from Husserl's philosophical phenomenology to Daniel Dennett's heterophenomenological method.[99] Carrying out the methods is difficult at best, however, and the problem only seems to grow more pointed as cross-cultural knowledge deepens.

This problem of relativism of description of religious experiences is compounded in theological and ethical contexts by the fact that the specialized concepts presupposing or referring to religious experiences (for example, conversion, samadhi, salvation, and human-heartedness) are themselves hard to compare. This second kind of difficulty in comparison is no easier to manage than the phenomenological difficulty just mentioned and, predictably, methods for attempting to manage it have proliferated.[100]

We have several remarks to make about the relativity of description of ultimacy experiences. First, the issue is complex and this complexity must be faced if a theory of ultimacy experiences is to have standing in a broad public of intellectuals. In relation to narrower social contexts, such as a particular theological-intellectual tradition within Hinduism, some of the approaches to comparison that focus solely on the theological categories used for describing ultimacy experiences do seem to succeed in exposing such descriptions to judgments of similarity and difference.[101] The same can be said for some of the approaches to comparing descriptive phenomenological accounts.[102] The problem is sharpest and most threatening when the intellectual context of discussion is broadly interdisciplinary and cross-cultural.

Second, theories about the neural expression of ultimacy experiences in conjunction with improving technologies for mapping brain activity promise a heretofore underappreciated means of testing claims that dissimilar descriptions refer to similar experiences. Such testing would be far from simple, as it must presuppose correlations between neurology and the phenomenology of experience that are in fact likely to be related no more strictly than in family resemblance fashion. Nevertheless, research indicates that such correlations exist and that a few areas of the brain tend to be involved in discrete ultimacy states, so neural scans should in time have a statistically relevant contribution to make.

Third, theories about religious language have a role to play here, the more so when they join considerations from neurology and the sociology of knowledge, as well as other disciplines such as comparative ethology and linguistics. Religious groups adopt patterns of description of ultimacy experiences under several

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[99] See Daniel C. Dennett, "A Method for Phenomenology," in *Consciousness Explained* (Boston: Little, Brown and Company, 1991), 66–98.

[100] For a survey of such methods, see Wesley J. Wildman with Robert Cummings Neville, "How Our Approach to Comparison Relates to Others," in *Ultimate Realities*, Neville, ed. (Albany: State University of New York Press, forthcoming, 2000).

[101] The book cited in the previous note is the second of three volumes in a series devoted to testing a particularly sophisticated comparative method; the series is the published output of the Cross-Cultural Comparative Religious Ideas Project, already mentioned in footnote 4. This project presents strong evidence on behalf of the effectiveness of a comparative method that establishes a dialectic between religious texts and experts, on the one hand, and a network of vague categories, on the other. This dialectic both allows the vague comparative categories to be specified by more concrete categories and systematically subjects the entire scheme to correction by concrete details in an ongoing process of deepening comparison.

[102] The most realistic and promising of these is Dennett's heterophenomenological method, which is really the formal statement of a process of comparison that is already employed in many contexts; see Dennett, "A Method for Phenomenology."

influences, including the internal logic of the concepts and experiences with which they have to grapple, and the historical circumstances that condition key decisions taken. And most such processes of adoption develop against the background of neurally and socially conditioned ranges of possible options. Because of this, many thinkers have been able sensibly to advance analyses of distinctive patterns of religious speech or other activity that lay the groundwork for the effective detection of the similar under the guise of the differently described.[103] Such interdisciplinary work is relatively new and plagued by problems of arbitrariness of analysis, but there is every reason to expect it to improve rapidly as more scholars reach across disciplines for promising resources.

Together, these observations indicate that the relativity of description of ultimacy experiences—phenomenologically, culturally, communally, theologically, and ethically—while daunting, is not the impasse that it can seem upon first encounter.

5.4 Spiritual Discernment

Many religious groups embody considerable wisdom with regard to the authenticity of both discrete and extended ultimacy experiences. Discernment is not magic; it does not afford otherwise impossible access to the minds and experiences of an individual. And be that as it may, the effectiveness of discernment can be accounted for without the supposition of supernatural guidance. Traditionally, its operation involves a wise and experienced mentor or teacher, or the collective wisdom of a group, in dialogue with an individual who reports a profound or unusual religious experience. At minimum, it is a regulative process that refines the application of special words used in that group's social-linguistic context to describe such experiences. Sometimes discernment also involves the evaluation of information or instructions whose origins the individual might attribute to his or her experience. Typically it is a caring, pastoral process from which the individual and discerners alike emerge wiser, more experienced, and better adjusted.

The social implementation of these discernment processes varies widely, as does their regulative effectiveness. Examples include the teacher-student relationship in some Hindu schools such as Vedanta and in most forms of Buddhism, the relationship between Christian believers and their confessors or spiritual advisors, the benevolent authority of groups of Jewish Rabbis over the groups they serve, and the relationship between the community and an individual in groups such as the Quakers. Discernment processes are evident almost everywhere religion is found. While they are typically absent in the (usually explosive) phase of a religion's infancy, they tend to be established quickly. As discussed above, there are arguably

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[103] One example especially relevant to the analysis of ritual experiences is Eugene G. d'Aquili, Charles D. Laughlin, and J. McManus, *The Spectrum of Ritual: A Biogenetic Structural Analysis* (New York: Columbia University Press, 1979). An example pertaining to the connections between the architecture of religious buildings and religious experience, and relying mostly on arguments from hemispheric dominance, is James B. Ashbrook, *The Human Mind and the Mind of God: Theological Promise in Brain Research* (Lanham: University Press of America, 1984). More generally, see Carol Rausch Albright and James B. Ashbrook, *The Humanizing Brain: Where Religion and Neuroscience Meet* (Cleveland: Pilgrim Press, 1997); Laurence O. McKinney, *Neurotheology: Virtual Religion in the 21st Century* (Cambridge: American Institute for Mindfulness, 1994); and David Porush, "Finding God in the Three-Pound Universe: The Neuroscience of Transcendence," *Omni* 16.1(1993). Little has been done specifically in relation to theological modes of speech, but see Wesley J. Wildman, *Speaking of Ultimacy*, forthcoming.

even secular forms of discernment, such as the patient-analyst relationship in psychoanalysis. The fact that these secular forms of discernment exist shows that discernment processes take their rise in the first instance not from religious interests but from ordinary processes of social-linguistic regulation by which groups try to make sure important descriptions are applied to experiences correctly.

In what sense is discernment a regulative process? People wanting to describe their ultimacy experiences will tend to use the terminology that their social-linguistic context makes available to them, as they understand it. They can only really discover the aptness of their descriptions by imaginatively or actually trying them out and seeing what happens. They may or may not revise their description; that will depend on their group's reactions and how much they care about those reactions. For example, a lazy, narcissistic person is unlikely to be believed when he or she claims to have received a revelation from a divine being in the absence of radical personality changes and a plausible angelic message. A skeptical reaction might force a change in the description offered or it might marginalize a person intransigent about his or her claim. In either case, the complex discernment relation serves to regulate current and future descriptions of purported ultimacy experiences.

Discernment is a complex dialectical process and it is not always successful in creating agreement among all parties. But it is remarkably successful just the same and the natural question is: Why? Other examples of regulative social-linguistic processes exist, including those operative when a child is learning how to apply names to observable objects. These processes work because mistakes can be corrected. But how does the regulative dialectic operating in the description of ultimacy experiences work? Since experiences are not observable in the same way that physical objects are, how can mistakes be corrected? Might not the situation for ultimacy experiences be one of "hermeneutics all the way down"? That is, could completely different experiences receive identical descriptions and still pass muster in the discernment processes? At one level, we cannot answer these questions because the problem of other minds is not going to dissolve; not even the prospect of neurological correlates for mental events removes the problem in its abstract philosophical form. Yet, as we try to show in section 6, many factors are relevant to assessing putative ultimacy experiences, and together they make less plausible the logically possible option of utter relativism of descriptions of ultimacy experiences. Within religious groups, the wisdom about typical and atypical ultimacy experiences built over centuries and activated in discernment processes is the key to producing such agreement as exists in judgments of authenticity.

There are two observations to be drawn for our interpretation of ultimacy experiences from the perspective of spiritual discernment. First, spiritual discernment is a crucial factor in the linguistic environment of religious groups because such groups typically exercise considerable influence over their members' beliefs and the modes of expression of those beliefs. Thus, religious people tend to describe their experiences of ultimacy in terms likely to satisfy the discerning eye of their group. Because of this, second, they are also likely to value some types of discrete experiences more than others, some descriptions of experiences more than others, and some patterns of transformation more than others. Communities that value mystical states will have members who value them and describe ultimacy experiences in such terms. Groups that stress the virtue of long-term, stable character transformation will promote such temporally extended ultimacy experiences in their members as well as appropriate descriptions.

Of all methods for assessing ultimacy experiences, religious discernment claims the most extensive experience and the richest traditions of interpretation, much more extensive than nonreligious branches of psychology or phenomenology. Thus, discernment is at present a crucial factor in evaluating the emerging candidates for neurological and phenomenological markers of ultimacy experiences. Openness to normative judgments in religious contexts also makes possible a move from judgments about *typical* ultimacy experiences to judgments concerning their *authenticity*—a characteristic important for the constructive venture of section 6.

6 Procedures for Identifying Typical and Authentic Ultimacy Experiences

6.1 A Description of Typical Ultimacy Experiences

Our description of ultimacy experiences constitutes a detailed taxonomy (section 2 on phenomenology) in conjunction with a neurological part-model (section 3) and a number of more explanatory considerations (social-psychological in section 4 and theological-ethical in section 5). This descriptive apparatus is useful for determining when a *typical* ultimacy experience has occurred. In traditional religious practice, working taxonomies conditioned primarily by informal phenomenological and theological perspectives have dominated the interpretation and evaluation of ultimacy experiences. Our taxonomy gives greater weight to the neurological and social-psychological perspectives than they have traditionally received. The taxonomy is recapitulated in Appendix A, which also serves as a reader's guide to the entire argument.

We wish to stress the idea that there is a spectrum of both discrete and extended ultimacy experiences. Our taxonomy describes *typical* ultimacy experiences, and it is not the case that they just occur or not in binary fashion. At the center of an imaginary target there is an ideal type, recognizable by traditional theological criteria; richly describable in consistent ways by, say, a psychoanalyst or an evolutionary psychologist; with brain activity known to be strongly correlated with what are usually accepted as ultimacy experiences; and with experiential phenomena embracing several of the categories discussed earlier (for discrete states, sensory alteration, self-alteration, presences, cognitions, emotions). Other discrete experiences in the ultimacy spectrum would possess some of the features listed above, but in some categories might lack relevant features or even possess contradicting features. There would be controversy, then, as to whether to accept such experiences as being ultimacy experiences. In addition, there would be experiences lying at the edges, acknowledged simply as belonging to the ultimacy spectrum, but as being only partial in character.

Furthermore, characteristic features of ultimacy experiences permit the distinguishing of types. The two main types we have identified are the discrete and extended ultimacy experiences. We further distinguished between social and transformation ultimacy experiences within the extended type and we hypothesize that clusters of features recur with such frequency that it makes sense to distinguish other subtypes. For example, within the discrete type, feelings of oceanic peace and wideness of compassion are frequent consequences of certain meditative techniques. Meditation produces other experiences, but the peaceful, compassionate state seems to be so frequently encountered that it can usefully be designated a subtype. We have been careful not to elaborate subtypes both because the systematic survey data needed to identify them do not exist and because the descriptive apparatus needed

to create meaningful survey instruments is unstable, mostly due to the need for further development of stable cross-cultural descriptive categories and of the neurosciences. We can predict, however, that these subtypes would be related to one another in family resemblance fashion and that each would have its own distinctiveness, with typical instances closer to the center of its own circular target than marginal instances. This is precisely the situation that obtains in the diagnosis of neurological disorders, and the prominent role of brain processes gives us every reason to expect that ultimacy experiences, especially of the discrete kind, will be similar.

Our description of typical ultimacy experiences has produced more than a multi-faceted taxonomy. Because we have paid close attention to the relation between social-linguistic environments and the way that individuals describe purported ultimacy experiences, we have a working model of the complicated hermeneutical transactions that occur between individuals and groups in the having and describing of ultimacy experiences. This model is useful both for understanding why ultimacy experiences are described the way they are and for evaluating putative ultimacy experiences.

With regard to the way typical ultimacy experiences are detected, the application of our descriptive taxonomy can be likened to medical diagnostic procedures that also distinguish conditions based on typical sets of features. The cross-cultural aspect of this analogy is particularly apt. For example, an individual presents with the complaint, "It hurts when I take a breath." A Western-trained doctor might note that the person is also coughing and breathing somewhat rapidly. Were he to have a conversation with a colleague, they would likely agree that pneumonia must be ruled out. In a different diagnostic culture, the clinician and her colleagues might consider that there is an imbalance of qi. In the first setting, a set of objective data would be sought: the temperature, the number of white cells in the blood, a radiographic picture of the chest. In the second setting, other data such as detailed characteristics of the pulse and the appearance of the tongue would be gathered.

Within the Western diagnostic framework, there is an ideal type—pneumonia—that has certain co-occurring subjective and objective features. In other cases with the same subjective complaint, the white cell count and x-ray will be silent, leaving the clinician with the cough, dyspnea, and pleuritic pain. He or she will consider pneumonia to have been ruled out and may diagnose a viral illness with pleuritis. In still another case, a person may have no complaint but be found to be increasingly weak and lethargic. A physical exam and blood cell count might raise the suspicion of pneumonia, subsequently confirmed by x-ray. Various combinations of subjective and objective phenomena are interpreted both by the individual and by relevant experts.

Modern Western medicine is but one hermeneutical approach to diagnosing bodily ailments. It is not uncommon to find detailed and recognizable descriptions of certain illnesses in the literature of other cultures and eras. The observation that tubercular symptoms may remit at high altitudes, for example, was established long before the pathogenic bacillus was identified and its oxygen requirements understood. The association between a rich diet and gouty attacks was known before the pathways of uric acid metabolism had been elucidated. Many observations and varying vocabularies in the course of time can be made consistent within an enlarged framework. Nevertheless, gray areas and ambiguities will always remain, stimulating further investigative and hermeneutic efforts.

This extended analogy from medicine expresses the diagnostic procedure made possible by our description of ultimacy experiences. It also illustrates the flexibility of the descriptive taxonomy with respect to managing complex or partial instances of ultimacy experiences. It even suggests how sufficiently detailed descriptions of ultimacy experiences might be used to relate culturally distinctive patterns of description. But there is an important disanalogy here as well. Western medicine has a sophisticated causal theory of pneumonia that is more detailed, less arbitrary, and better able to be tested and improved than competitive causal theories such as those based on qi. This is so even though Western patterns of diagnosis and treatment are inferior to those of non-Western medicine in some instances. To this point we have offered no causal theory for any type or subtype of ultimacy experiences, but only an extended, multi-faceted description that makes possible a diagnostic procedure. We return to the question of a causal model for ultimacy experiences in section 7.

6.2 Detecting Typical Ultimacy Experiences

We have described a procedure for identifying typical ultimacy experiences using our descriptive taxonomy and using a working model of the complicated hermeneutics of the social-linguistic processes that condition the having and describing of ultimacy experiences. All this constitutes a rich framework for articulating why one does or does not accept an experience as belonging to the category of ultimacy and whether or not a putative ultimacy experience would be deemed typical. The *authenticity* of such experiences is another matter, to which we turn in section 6.3. As a demonstration of how the procedure for detecting *typical* ultimacy experiences might be applied, let us evaluate some possible examples of ultimacy experiences.

The Interictal Personality. We refer here to the chronic personality traits observed in some temporal lobe epilepsy patients (described above). From the phenomenological side, the salient feature is not discrete experiences (sensory alterations, self-alterations, presences, etc.) but an ongoing interest in religious and philosophical matters together with a moralistic attitude, intensified emotions, and a "viscous" interpersonal style. Thus, the temporally extended phenomenological category is pertinent here. What is notable, as regards the elements of that category (existential potency, social embedding, transformation of behavior and personality, and transformation of beliefs), is a dissociation of beliefs (which are pronounced in these individuals) from behavior and character changes of a moral and ethical nature; it is not reported that these individuals are more altruistic towards others or more selfless than prior to their illness. To summarize the phenomenological dimension of this type of individual, then, we find only one element of the several that we deem typical of extended experiences of ultimacy.

Moving to the neurological domain, we can surmise that this personality is based on accumulated episodes of aberrant temporal lobe activity. Perhaps our putative markers, involving medial temporal structures and the lateral temporal cortex, would be indicated in brain images. Moving next to the social-psychological dimension, different experts (neurologists, psychoanalysts, and evolutionary psychologists) might frame the phenomena differently. As we have seen, Bear and Ramachandran understand the phenomena as a form of limbic-sensory hyperconnection. Neurologists generally do not find these patients particularly pleasant to deal with, as they tend to be overly concerned with detail and to prolong encounters, disregarding cues directed towards terminating a conversation (viscosity). A psychoanalyst would

regard such a patient as an obsessive character—again, with connotations of rigidity and insensitivity to others. Evidence of unconscious aggression might be discerned.

In sum, what might appear to be a religious conversion taken solely on the face of the individual's expressed interests does not seem particularly convincing when viewed from these multiple perspectives. Hermeneutically speaking, we might relate it to an "ideal" conversion as we would relate pleuritis to pneumonia: they are not the same even though they share a few features.

Discrete Temporal Lobe Phenomena. Dostoevsky's *The Idiot* contains the following passage describing a complex partial seizure.

> His mind and his heart were flooded with extraordinary light; all his uneasiness, all his doubts, all his anxieties were relieved at once; they were all merged in a lofty calm, full of serene, harmonious joy and hope. Since at that second, that is at the very last conscious moment before the fit, he had time to say to himself clearly and consciously, "Yes, for this moment one might give one's whole life!" then without doubt that moment was really worth the whole of life.[104]

From a phenomenological point of view, some complex partial seizures indeed are remarkably similar to the discrete experiences generally accepted as religious. If they are reflected on and lead to changes such as those described under the temporally extended category (behavior, character, and belief change), then they would conform to an elaborated phenomenology traditionally associated with ultimacy experiences. From a social-psychological perspective, again, different experts might view these episodes in various ways. In a psychoanalytic setting, a person with the discrete experiences just quoted might be understood as regressing to an infantile state of bliss and security which in his real infancy had been traumatically torn away. In the context of a life-stage psychology, if a person were struggling with a terminal illness an experience such as the one above might be considered a defense against an impossible struggle and its attendant despair, or a letting-go of both. We can imagine still other hypothetical interpretations arising in other social-psychological settings: it is not obvious, though, that experts in all fields would have cogent explanations to offer.

From a neurological perspective, such an individual might very well have the neurological markers of ultimacy experiences discussed above. In the future it might be possible to show that brain activity indistinguishable from the transient temporal lobe discharges seen in epilepsy is an invariable concomitant of discrete religious experience, equivalent to a positive x-ray in pneumonia. In the meantime, we would say that this case stands much closer to the ideal type of discrete ultimacy experiences than the case of the interictal personality does to the ideal type of extended ultimacy experiences.

Sex and drugs. In some cultures, alteration of emotion and the experience of self are sought through sexual arousal or the use of drugs. Drugs can also be used to generate hallucinations that are held to be spiritually significant. In the instances we have in mind, the use of arousal or intoxication is highly ritualized and is contextualized by a group's articulated religious or metaphysical beliefs. To decide whether these are ultimacy experiences, we would apply our several criteria. We would want to know how closely the phenomena conform to the five elements of discrete ultimacy phenomena, and whether they bring about chronic changes conforming to the four elements of extended ultimacy experiences. We would ask whether these

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[104] Fyodor Dostoevsky, *The Idiot* (New York: Bantam Books, 1981; first published 1869), 218–19.

manipulations produce the neural hallmarks of ultimacy experiences. Probably the group in which these practices occur would make the richest social-psychological interpretations and relevant observations, but other observations and interpretations would also be possible.

Remorse and Transformation. Although psychoanalytic treatment focuses on unconscious conflict rather than on undesirable behavior, in a successful treatment patients alter their previous behavior, sometimes radically. For example, a man who could not keep a job because of his arrogance and who had alienated two wives by his narcissistic demands had been in treatment for several years when he began to contrast some new, unselfish behavior with his past patterns. As he became fully able to see himself as he had been, he spent many sessions in a state of deep remorse, bemoaning the damage he had done in his relationships, even weeping. He made attempts at rapprochement with his estranged adult children and was deeply moved by their forgiveness. He became able to tolerate the demands of a job, even though his position was much less prestigious than in the past. As he described his new capacity for acts of kindness towards others and patience with himself, he realized he felt very much at peace and actually happy.

Let us subject this account to our fourfold criteria. Phenomenologically, it does not contain any discrete states relevant to ultimacy. The account is strongly marked by a change in behavior and character, unaccompanied, however, by a belief system involving concepts of ultimacy. From a social-psychological viewpoint, psychoanalysts of various schools might give rich accounts—for example, that he had developed the capacity to serve as a self-object for others once he no longer required them to be narcissistic self-objects for him. An evolutionary psychologist might note the negative consequences of his previous selfish behavior, arguing that they had caused a shift in strategy to altruism. From a neurological perspective, we would expect neural signatures to be absent. From a theological/ethical point of view, it might be noted that the person had passed into the second of the three Kierkegaardian stages of transformation. We might conclude that this vignette bears some of the signs of ultimacy, but lies at too far a distance from the ideal type to be counted as an ultimacy experience in the usual sense of the phrase.

We might think, however, that this person had potential for moving closer to a recognizable experience of ultimacy, a Kierkegaardian third stage, in contrast to the interictal personality, for example. This is, in effect, a prediction. Medical diagnosis is useful to the extent that it predicts the future course of events. In the absence of interventions, a diagnosis of pneumonia predicts a different course than a diagnosis of viral-associated pleuritis. As our understanding of ultimacy experiences increases, it should allow predictions as to course and outcome to be made and tested.

6.3 Detecting Authentic Ultimacy Experiences

Detecting typical ultimacy experiences does not require normative categories such as authenticity. There is no concern with the reality of the purported ultimate object of such experiences in this detection, and no judgment is made about what is better or worse in any religious sense. Within various narrower social-linguistic frameworks, limited normative judgments are made, as when a sociobiologist points out the serendipitous outworkings of an adaptive behavior or a psychoanalyst notes that unhappiness is caused by denial of trauma because denial engenders obsessive repetition of psychic processes in situations akin to that in which the trauma first

occurred. But there is no comprehensive judgment made about the authenticity of ultimacy experiences in our diagnostic assessments of putative instances of them.

The conventional wisdom seems to be that there is no meaningful way to discuss richer normative judgments of authenticity in scientific contexts; such matters should be left to the discernment procedures of religious groups. We demur. Judgments of authenticity are not much different than judgments of what is typical. The added element is merely the willingness of a social-linguistic context to stipulate what *ought* to occur. Psychologists may try to refrain from normative "ought" language, confining themselves to the "if-then" logic defined by the patient's own convictions—"if such-and-such is an important goal to you, then so-and-so is the way to achieve it"—as though therapy were essentially a means-ends technology. In practice, however, psychologists often care about their patients and identify with their goals of happiness or peace of mind, making a community of at least two people with shared goals and a clear sense of what *ought* to happen. Sociobiologists can probably afford to be stricter about avoiding normative language, but impartiality is only a limited virtue. Sympathetic, explicitly partial identification with others is the very stuff of friendship, community life, and caring behavior, and thus has its own virtues.

Where psychologists tend to walk the line between scientific objectivity and passionate concern—losing balance while walking this line is an occupational hazard, in fact—other social contexts promote full-blooded commitment to the value of ultimacy experiences. In such contexts, along with an amassing of experience about what is typical, there is a concern to recognize and cultivate *authentic* ultimacy experiences. This passionate embrace of comprehensive normative categories can be described in the same way that any complex relation between a group and its members is described. Such descriptions can be impartial even if the judgments of authenticity being described are thoroughly, adventurously biased by a passionate sense of what *ought* to happen.

In practice, many religious groups manifest a double concern with the authenticity of ultimacy experiences. On the one hand, they promote authentic ultimacy experiences by lavishing honor and encouragement upon those who have them, especially in virtue of the deeper forms of wisdom and maturity achieved by means of such ultimacy experiences. Such cultivation is one of the expected commitments of a religious group. On the other hand, the discernment procedures of many religious groups are designed to parse inauthentic from authentic ultimacy experiences, as described above in section 5.4. Besides applying accumulated experience to judging whether a purported ultimacy experience is typical, such discernment also relies heavily on a background of assumptions about what is in fact occurring in a typical ultimacy experience. For example, whereas folk religions encourage trance states and revere those who achieve them, the greatest respect is reserved for those shamans who subsequently exhibit behavior confirming the group's background belief that a trance state involves a spiritual journey in which the traveler receives wisdom capable of solving real problems in the community.

The interpretation of ultimacy experiences underlying such criteria for authenticity is effectively a causal model. It follows that judgments of authenticity can be described impartially. However, they cannot be confirmed from beyond the social-linguistic community within which those judgments are made without evaluation of the underlying causal interpretation of ultimacy experiences. Any evaluation of a group's causal model is complicated by the fact that it will be expressed in the distinctive language of that social-linguistic context. That makes

comparing and testing such causal models so tricky that the scientific literature in religious experiences tends to stay in the domain of the typical and to avoid altogether the fuzzier territory of the authentic. Nevertheless, in section 7 we shall propose our own causal model that we hope is helpful for analyzing and comparing other causal models and for evaluating judgments of authenticity with some degree of impartiality. That causal model also offers us the opportunity to venture some ideas about the ultimate causes and value of ultimacy experiences, albeit within the constraints of our metaphysically relatively neutral approach.

6.4 An Orientation to the Future

It is worthwhile noting that considerations from neurophysiology can have little *direct* relevance for causal theories of ultimacy experiences (and so for theories of divine action) at the present time. There is of course the obvious obligation to express such theories in ways that are responsive to the general relevance of the neurosciences for understanding human beings. But the situation seems to be one of significant independence of the two realms of discourse as far as direct relations are concerned, with indirect relations possible because of mutual connections to general theories of human nature. Our approach to diagnosis of typical ultimacy experiences is likely to become more effective with the passage of time, however, for three reasons.

First, phenomenological accounts of religious experience will become more refined as advances are made in comparing descriptions of experiences from diverse cultures. This sort of comparison is in its infancy, yet it is the most promising line of solution to the problems associated with deciding when phenomenologically similar episodes are being described in different ways and when similarity of descriptions is misleading.

Second, research in neuroscience does not yet furnish us with any correlations between neural activity and phenomenology definite enough to identify a specific neural signature of discrete ultimacy events of any sort. We have said that such neural signatures would probably include activity pervading the medial temporal regions and extending into the anterior temporal cortices, perhaps especially in the dominant hemisphere. These tentative suggestions are based on data from temporal lobe epilepsy and our speculations regarding semantic processing and social participation. But they are pointers towards a hopeful future, not firm criteria in the present.

Third, our use of social-psychological categories drawn from nontheological frames of reference is meant to open up the possibility that experiences recognizably related to ultimacy can occur without being so labeled. Although descriptive and explanatory frameworks differ between religious and nonreligious contexts, it is probable that some of the same phenomena are being described. Moreover—and linking the first two points—neural markers of ultimacy experiences could support this conjecture and thereby furnish an intriguing basis for the comparison of experiences across cultures and social-linguistic systems. Such markers could also supply a partial test of the ability of phenomenological descriptions of ultimacy experiences to register these similarities.

It follows that an orientation to the future is crucial both for the development of better correlations between neurology and other types of descriptions of ultimacy experiences, and for correcting the theoretical underpinnings of the model as they take shape at any given time.

7 The Causes and Value of Ultimacy Experiences

7.1 The Problem with Modeling Causes

We have passed from describing ultimacy experiences (sections 2–5) to the problem of detecting them (section 6) and now we turn our attention to the intriguing issues surrounding their causes and value. For now we concentrate on causes; we turn to value in section 7.5, below.

Models of the causes of ultimacy experiences underlie the judgments made in religious groups about the authenticity of putative ultimacy experiences, as we saw in section 6.3, above. Unfortunately, we can make little use of such folk models because, though they take account of a rich mass of testimonial data, they are too narrow in scope, limited by the usually unexamined convictions of the group, uninformed by outside experts, and oblivious to neurological considerations. By contrast, our investigation of the causes of ultimacy experiences has to take account of all the interpretative perspectives offered in the descriptive phase of this essay, except of course that phenomenology is of little use, being specifically neutral to questions of causation.

The idea of investigating the causes of a class of phenomena is problematic. For the sake of argument, let us suppose that we can leap over the high hurdle of internal variation within the class of phenomena; then we could treat the class of phenomena as defining a single question about causes rather than a horde of distinct questions. Our task then would seem to involve finding the best causal model for the phenomena. To do that we would have to construct the best model we can, making sure that it is capable of being compared with competitors and that it surpasses them in descriptive richness and explanatory effectiveness. That is a complicated but thinkable task and tasks like it are carried out all the time in the natural and social sciences.

What does a causal model look like? Put simply, causal models describe how causes and effects are arranged in chains or networks of events by giving a theoretical and sometimes mathematized account both of the linkages between events and of what events ought to be observed. In order to give a causal model of cosmic ray detection, for example, a series of events, some observable and some hypothetical, is described. Successive particle decays are postulated to occur with probabilities consistent with going theoretical models from high-energy physics and then constraints on observable effects are deduced that make the model vulnerable to correction through experiments. The same is true for deterministic causal models of colliding billiard balls, planetary motion, or the cleaning mechanism of a machine that washes clothes.

Such a model is certainly possible for ultimacy experiences, though there would be no mathematizing of linkages or observable events involved. Consider two such models. Let us suppose, for the sake of argument, that Ultimacy is thought of as an intentional being with causal powers. We could include such a causal factor in one model, making of it a complex hypothesis in favor of intentional divine action as a causal factor in ultimacy experiences. Alternatively, we could exclude that factor and develop a model advancing the hypothesis that the causes of ultimacy experiences can be accounted for without reference to an intentional divine causal agent. Then we set the two hypothetical models to the task of accounting for data and watch to

see what happens. The better of the two wins the day and must take on yet other hypothetical models of the causes of ultimacy experiences.

This is a simplified version of what happens in the natural and social sciences but it is enough to show that finding the best causal model of ultimacy experiences is an intelligible goal providing that the competing models produce sufficiently different predictions to enable the data to discriminate between them. Unfortunately, centuries of wrangling over the issue of divine action have proved fruitless, essentially because the infamous slipperiness of language about God and divine action seems to make falsifiable predictions unachievable. This situation is not a matter of intellectual dishonesty on the part of those throwing their weight behind the model that affirms an intentional divine agent, though some are quick to leap to that conclusion and subsequently dismiss theology as a serious form of intellectual work. It is rather a consequence of the intrinsic difficulty of the problem itself. The actions of an intentional divine being—as with any causal agent—are only predictable to the extent that quite a lot is known about the nature of this divine being. But the sacred texts of most traditions, when they portray an intentional divine being, typically insist that the divine intention is inscrutable, often in flagrant contradiction to human expectations, and impossible to predict. Moreover, the events in which divine action is said to occur are dense with meanings and subject to all kinds of more or less persuasive interpretations. All this makes it virtually impossible for the data of ultimacy experiences to drive a wedge between our two models, pushing one into the superior position.

It is tempting to yield to the positivist instinct and jettison the divine-action model on the grounds that it is too arbitrary, too suspiciously convenient, too hard to test and so too difficult to render meaningful, and weighed down by an extra hypothesis (intentional divine action) that seems superfluous in explaining all of the scientifically admissible data about ultimacy experiences. Theologians certainly have displayed plenty of self-conscious embarrassment about this problem during the last two-hundred years. Like not being invited to a party where everyone who is anyone is having fun, theologians defending divine action are out of fashion in modern and postmodern intellectual circles. Yet fairness demands that the difficulties in showing the sufficiency of the alternative, more minimalist view for explaining ultimacy experiences be squarely admitted. The minimalist model is a more progressive research program and so more persuasive, in one way, yet the nature of the subject matter demands that we hesitate to apply the usual criteria for deciding theoretical debates. So the debate wanders along, reeling and rolling from criteria for theory choice to the peculiarities of models involving God and back again, never getting very far, and driving everyone crazy. A few people resolve the unbearable tension by taking the positivist escape route but that seems to have all the leap-of-faith character of the decision to affirm the action of an intentional divine being. The debate seems futile.

In light of this analysis, there is an obvious problem with trying to develop a causal model for ultimacy experiences. Deciding between competitive models has to be possible in order to make building causal models of ultimacy experiences a worthwhile activity, yet these decisions seem infuriatingly difficult to make. The best that can be done, it would seem, is to invent causal models as artists express themselves on canvas, and then leave all of the causal models hanging up for view in the philosophical analogy of an art gallery. Even if ruling out the weakest models is possible, deciding on the best model is an arbitrary and highly personal exercise that can never win rational consensus. Well, that may indeed be the best outcome but

we think there might be a more promising way. It is not that the impasse facing causal models of ultimacy experiences can somehow be evaded after all this time. No, the history of the question weighs too heavily for that. The point is rather that there is an alternative to modeling causes in the usual way.

We propose to model ultimacy experiences by tracing sign-transformations rather than causes and effects. While this approach is less familiar and requires some explanation, we claim for it three significant virtues. First, it is more impartial than traditional causal models, a virtue deriving from the fact that it does not require the specification of ontological causes and effects. Indeed, the ontological status of causes can be treated as a question to be answered in this approach, making it ideal for modeling ultimacy experiences. Second, the model employs a strategy of vagueness with regard to irresolvable ontological questions in a constructive way that facilitates a nontraditional resolution to debates over the causes of ultimacy experiences. Third, the model is as useful for discussing the value as it is the causes of ultimacy experiences, enabling us to deal with both issues at once. We do not claim that this approach to modeling ultimacy experiences gets us further than the debate over causal models has gone but only that a change of theoretical scenery can't hurt and that the vaguer, more impartial way we propose for framing questions about causes sidesteps many of these futile debates and stays closer to intelligible data.

The approach of using sign transformations to model various complex process has enjoyed limited success within semiotic theory for many years and it is particularly apt for modeling phenomena related to neural processes. Moreover, sign transformations are the ideal way to express and manage the double fact that ultimacy experiences arise from brain activity that has been reflexively subjected to an interpretive process in a social-linguistic environment, and that this semiotic conditioning in turn depends on brain function.

Any model makes simplifying and organizing assumptions. Independent arguments can be offered for such assumptions but they are most convincing when a model using them proves to be effective. Most of the assumptions of our model are gathered into what we are calling its philosophical-semiotic framework, a specifically philosophical elaboration of semiotic theory. The task of section 7.2 is to lay out this framework and to explain how it allows our model to be both neutral to, and yet well suited for investigating, the causes and value of ultimacy experiences. In section 7.3 we elaborate the model specifically in relation to the relevant considerations from the descriptive phase of our essay. Throughout these two sections, we make extensive use of footnotes to elaborate on technical points so as to keep the main text as lucid as possible for the general reader. The model is applied to a discussion of the causes of ultimacy experiences in section 7.4, including whether they demand explanation in terms of divine action, and to an analysis of theological claims for their truth, value, and importance in section 7.5. We conclude in section 7.6 with some speculative yet plausible and metaphysically modest suggestions about the nature of the ultimate causes of ultimacy experiences.

7.2 The Model's Philosophical-Semiotic Framework

In the most general terms, semiotics is the theory of signs. As a technical discipline, it has applications in intellectual ventures as diverse as communication theory, developmental psychology, and anthropology. We adopt a philosophical view of semiotics that is indebted to the early North American pragmatists, especially

Charles Peirce.[105] Signs are treated abstractly as anything that can be taken to stand for something else.[106] The way signs *stand for* other signs in certain respects is analyzed in semiotic theory.[107] When one sign is taken to stand for another, we speak loosely of *sign transformation* of the object sign into the interpretant sign, intending to suggest that signs flow from one to the next, each standing for the previous one in some respect. The entire flux of signs in all its complexity registers whatever underlying causal processes there might be, though other relations are registered in the semiotic flux as well.[108] Yet it does so without assuming anything about the ontology of those causes (if indeed there are causes; on some South Asian metaphysical theories there is no underlying causation). When we speak of causation, we usually have in mind causal chains that are particularly significant for our interests; in fact, causation is much more like a surging river than a single thread of string. In the same way, the semiotic flux is enormously complex, and we pay attention to pieces of it selectively as circumstances and interests demand.[109] By focusing on

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[105] For convenient access to Peirce's view of pragmatism (he called it pragmaticism to distinguish it from the pragmatism of William James; Robert Neville has called it paleopragmatism to distinguish it from the neopragmatism of Richard Rorty), see Part II of Philip P. Wiener, ed., *Charles S. Peirce: Selected Writings* (New York: Dover, 1958). For his view of semiotics and logic, see the compilation in "Logic and Semiotic: The Theory of Signs," 98–119; and other essays in *Philosophical Writings of Peirce*, Justus Buchler, ed. (New York: Dover, 1955; originally published in 1940). The official edition of Peirce's works is Charles Hartshorne and Paul Weiss, eds., *Collected Papers of Charles Saunders Peirce*, 6 vols. (Cambridge: Harvard University Press, 1931–35).

[106] Semioticians have elaborated subtle distinctions among many types of signs. The most basic is the three-fold distinction between icon, index, and symbol, but sophisticated taxonomies have been produced in semiotic theory by paying close attention to the astonishingly diverse ways in which things stand for other things.

[107] This is a simple formulation of the basic semiotic structure. More precisely, the basic semiotic structure is four-fold in its logical form: (1) an object-sign (2) interpreted by (3) an interpretant-sign, with the interpretation occurring (4) in a particular respect. This structure is highly abstract, applicable quite generally to complex and simple processes, in every kind of system, including the neural, physiological, and cognitive. Structures of this kind are important elements of theories, illuminating common structural features of disparate objects and processes. Without it, a theory of religious experiences is likely to be arbitrary and unprincipled. With it, complex communication against the background of sophisticated cognitive habits can be analyzed as readily as physiological processes or neural signaling, all using the same semiotic framework. That is what our model requires.

[108] Peirce's semiotic theory is compatible with a causal theory of reference in which reference is understood to be achieved causally rather than merely "thought" in some way independently of the physical, causal world. Accordingly, sign relations of reference that are registered in the semiotic flux actually reflect causal processes. Other relations between signs, such as merely associative relations, can also be thought of as actually causal, given the complex social and neural connections that underlie the imaginative connections we make. It follows that the semiotic flux is more closely reflective of underlying causal processes than might seem to be the case at first.

[109] Alfred North Whitehead in *Process and Reality: An Essay in Cosmology* (New York: The Macmillan Co., 1929) articulates a theory of causation that is explicit about the enormous, multi-directional complexity of causal relations. A few thinkers influenced by Whitehead have found in semiotic theory a convenient way to express a similarly rich theory of the semiotic traces of causation, though without what they take to be the metaphysically over-determined and so unduly speculative character of Whitehead's theory. See, for example, Robert Cummings Neville, *Creativity and God: A Challenge to Process Theology* (New York:

signs and how they transform in a complex flux of signs, reflecting underlying causal processes, this philosophical version of semiotics facilitates a model of ultimacy experiences that can neutrally frame questions about the ontological status of supposed underlying causes, including "ultimacy." At the same time, our philosophical version of semiotic theory is critically realist and thus well suited for asking questions about the causes and value of ultimacy experiences and the reference and truth of language about ultimacy.[110]

With regard to human experiences of all kinds, our philosophical version of semiotic theory especially focuses on the ways we enter into the flux of signs—in fact, semiosis flows through us and all our interactions just as the river of causation (on common views of causation) embraces all that we are and do and think as human beings. The name we use for this participation in the encompassing semiotic flux is "engagement." This concept is the key to understanding how our version of semiotic theory can be critically realist, thereby enabling our model to frame questions of causation and value in helpful ways. The task of the remainder of this section is to explain engagement, showing how it brings to our model the virtues we claim for it. We will do this by asking and answering three questions.

First, in more detail, what do we mean by engagement? Semiotics takes with great seriousness the symbolic character of human experience, thought, and communication. We constantly take one thing to stand for another, understand some things by means of other things, mean some things in speaking of other things, and so on. In doing this we are interpreters who wield signs as tools for engaging a world of objects. Engagement through signs is especially obvious in language use,[111] but if we look more closely at nonlinguistic activity we see that it is pervasive. For example, a skilled dancer engages the world in magnificently shaped ways, and that engagement can be analyzed in terms of sign processing. Information pours into the dancer's senses about the dancer's body and the dancing surface, and that flood of information functions as signs for interpretation by highly trained habits, producing with incredible efficiency a further flow of signs that move the body in subtly adjusted ways. Again, listening to or making music can be understood as engagement through a richly textured flux of signs, in some respects cognitive, in others not. It might seem odd at first to interpret every kind of engagement with the world in terms of signs and sign processing—the more so because it seems we could speak of engagement more vaguely without ever mentioning signs—but the payoff is a powerful tool for analyzing structures and process of all kinds. Philosophers

[110] Semiotic theory often focuses narrowly on signs and sign relationships, abstracting from meanings (the domain of semantics) so as to focus on pure structure as much as possible. This is not a limitation intrinsic to the theory of signs but merely one of the ways this theory has been used. Since we are concerned with meanings, reference, truth, causes, and value, we move beyond this narrow sort of semiotics. We indicate this in our choice of names. For example, we speak of a philosophical version or application of semiotic theory and of a "philosophical-semiotic" foundation for our causal model of ultimacy experiences.

[111] This is one of the points made by Deacon in *The Symbolic Species*, he argues that the human capacity to engage the world through signs coevolved with the brain and was the necessary evolutionary precondition for language.

appreciate that kind of generality and are willing to use specialized terminology to get it.[112]

Second, how does the concept of engagement help our model to be critically realist about the world we engage? The case for critical realism is quite simple: the strongest argument for the reality of our world is our ability to engage it in every sense—to move within it, sense it, talk about it, change it. Of course, the world is not known directly in its reality but only indirectly *as engaged*; that is the point of speaking of *critical* realism. Nevertheless, signs must facilitate engagement with the real world in some way, whether loosely—as in the case of a hallucination—or tightly, as in the apprehension of the sound of a twig snapping in a lonely forest. Most signs are complex so that, even in the loose case, they engage the world

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[112] Another scalable concept useful for general analysis of structures and processes is the schema, a concept developed by Michael Arbib (see his essay in this volume for a fuller discussion of schemas). Because several chapters in this volume refer to schemas, we pause to compare the schema structure with the basic semiotic structure we use here. On our understanding of it, a schema is a conceptual tool modeled after objects in computer programming architecture. An object represents an operation that functions in relation to many different yet structurally similar input conditions and produces different yet structurally similar outputs; in the context of computer science, an object has the same set of input and output variables. Objects are useful when they represent repeatedly occurring processes, thereby allowing a much larger process to be conceived analytically in terms of many simpler component subprocesses, each represented as an object. Objects are more useful when they can be reused in the analytical description of many superficially different large-scale processes; when the same objects recur, superficially different processes are shown to have common sub-structural elements. In the same way, in the philosophical context, the schema is a concept whose instances are reusable. A particular neural subprocess might be represented as a schema, for example, and then that schema reused in the description of many different large-scale neural processes. Sound pattern recall might be used in modeling both hearing and speaking, for instance. Or an often-repeated physiological movement such as a smile could be represented as a schema and then that schema reused in descriptions of numerous larger social transactions, such as expressing enjoyment or ice-cool hatred. The reusability of a schema at the neural level is a strategic boon when it comes to computer modeling of brain processes. Sub-models for reusable neural schemas then become building blocks for more adventurous modeling efforts, with the details of each schema sub-model now helpfully hidden from view at the higher level. Likewise, schema reusability is an important component in the modeling of any complex process, from economic systems in the social sciences to cell systems in biology.

Reusable objects are still more useful when they are also scalable, which means that their structural features are applicable at many different levels of complexity. Scalable objects are relatively rare in programming architecture, the usual goal of good program design being reusable objects, but scalable objects do exist and they are as powerful as they are abstract. Scalable concepts are also important philosophically. For example, the concept of an object itself is highly scalable, as is the concept of a schema, as is the basic four-fold semiotic structure. It is their scalability that makes the schema and the basic semiotic structure so useful for the general analysis and modeling of complex processes. The difference between the semiotic structure and the schema structure lies essentially in degrees of complexity. The semiotic structure is simple and therefore extensively applicable; that makes it better suited for tracing the semiotic transformations necessary for the adequate framing of epistemological and ontological questions about the reference of language and the causes of experience. The schema structure is typically far more complex (except, of course, that the semiotic structure is one instance of a schema) because of the need for a structure of consistent input and output conditions; it is far less generally applicable, accordingly. But the schema concept is ideal for registering the structurally invariant features of complex processes, which makes it useful in model construction.

through multiple channels. Think, for example, of the rich way that Macbeth's hallucination of the dagger, its handle turned towards him, signified his actions in the real world. Considering both the sound of a snapping twig and the hallucination in this light illustrates how unappealing is a forced choice between naïve realism and the nonreferential relativism of hermeneutical circularity. The better way is to understand signs as making possible diverse forms of engagement with a real world. There is nothing more real or more basic than engagement with the world; that is the way the world shows up for us.[113] The upshot of all this for experiences of ultimacy is crucial. We are not forced to choose between a blunt realism about ultimacy and a hermeneutical disengagement from reality. In our approach, the distinction between what there really is and what people think there is turns out to be less

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[113] The complete argument for these points is complex and too long for this context. We may deepen the analysis one level, however, by considering how reference emerges in the sort of philosophical semiotics we use. To begin with, the argument here is deliberately reminiscent of Kant; engagement is the pragmatic-semiotic solution to—actually, a dissolution of—the famous dual problems of linguistic reference and ontological realism pressed into the modern philosophical consciousness by Kant; see *Critique of Pure Reason*, trans. Norman Kemp Smith, 2nd ed. (New York and London: Macmillan, 1933). Reference is, in effect, an emergent property of a semiotic flux. Analysis of the objects of our interpretation shows that the signs by which we interpret have as their objects other signs. In one sense, then, from the semiotic point of view, interpretation is a matter of "signs all the way down." The virtue of this point of view is the forcefulness with which it brings to our attention the pervasive reality of signs and socially embodied systems of signs. Thus, semiotics has the potential to furnish an extremely general description of reality in which "signs as interpretants of other signs" becomes the universal mode of analysis, both within and beyond the realm of human interpretation.

If semiotics suggests "signs all the way down," however, where are the philosophical resources needed to speak of a world to which language refers, a world in which we act, a public world of objects and events, of meanings and values? Some philosophical perspectives happily capitalize on the apparent impossibility of reference to an external world in semiotic theory's infinite regress of signs. We go another way, however, following Peirce's emphatic combination of semiotic theory and a critical realist view of the physical world that is congenial to the natural sciences. The key to this step is always, under one description or another, the fundamental category of engagement. Accepting that the reference of signs to other signs helps us to engage the world in which we live disarms what otherwise might appear to be a vicious infinite regress. Peirce expressed this colorfully: "everything that is present to our minds... appear[s] as a sign of ourselves as well as a sign of something without us... just as a rainbow is at once a manifestation both of the sun and of the rain." (This is the characterization of Milton Singer, including Peirce's rainbow quotation, from "Signs of the Self: An Exploration in Semiotic Anthropology," *American Anthropologist* 82(1980): 485–507.) Because we engage the world so richly, the reality of a world can be affirmed without having to pretend that the extraordinarily complex process of signs referring to other signs somehow just cuts out at some link along the chain. This view thus embodies an impressive refusal to oversimplify the (appropriate and optimal) messiness of reference in human symbol systems while dissolving the problem of reference to objective reality. To put the point cryptically, reference to what there is to be referred to is explained for free by means of the category of engagement without having first to settle what exists to be referred to in the first place. We note that this approach is quite compatible with a correspondence account of the meaning of truth and a combination approach to *criteria* for truth, in which correspondence, coherence, aesthetic, and pragmatic criteria all may play roles in helping to detect the true, with coherence criteria usually playing the leading role. (Note that some might expect a pragmatic theory of truth to emphasize pragmatic criteria but this is to think of William James too much and Peirce too little.)

significant than the distinction between what can be effectively—truly as well as efficaciously—engaged and what cannot be effectively engaged.

Third, how does the concept of engagement enable our model of ultimacy experiences to be neutral as to the question of the reality of ultimacy? Experiences of ultimacy are forms of engagement in the world. We do not need to settle the question of whether there is an "ultimate reality" causing experiences of ultimacy before we can legitimately speak of the experiences themselves. Nor must we decide the question of the reality and efficacy of ultimacy before we can begin examining people's reports of ultimacy experiences. On the contrary, we settle our metaphysical inventory questions about the world and ultimacy in and through our engagements with reality, which in our case means in and through the process of developing a model of ultimacy experiences.[114]

Within our philosophical-semiotic framework, therefore, we are justified in speaking of experiences of ultimacy while remaining formally neutral to the reality and efficacy of ultimacy. None of this requires surrendering a critical realist account of nature or our determination to ask and answer questions about the causes and value of ultimacy experiences.

7.3 Ultimacy Experiences Viewed in Terms of Sign Transformations

Within this philosophical-semiotic framework, it is possible to relate the relevant components of our description of ultimacy experiences—the neural, the social-psychological, and the theological-ethical—under the rubric of sign transformation. We view these components as aspects of reality registered by an encompassing semiotic flux, within which signs refer to other signs, constantly transforming our interpretations from one sphere to others.

More concretely, consider the relation between the neural and the social-psychological. Let us begin with patterns of neural firing—'objects' (of interpretation) in semiotic vocabulary, which of course should not be confused with physical objects, even though our language constantly blurs the distinction. When a particular pattern impinges on another set of neurons it becomes a 'sign' to be interpreted. The action of the second set of neurons, in response to the original pattern, is the 'interpretant'. This action in turn becomes a sign and so forth, until the interpretant arises at the level of somatic effectors—for example, as movements of the muscles. Once again, muscular movements become signs. To the individual moving the muscles, proprioceptive sensory input is relayed back to sensory areas of the brain as a sign. To other individuals who may be observing the movements, the visual

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[114] It is possible to extend semiotic terminology to all processes and objects and thereby to make semiotic categories metaphysically fundamental, in which case the real world engaged with signs is just the real world of signs. Alternatively, it is possible to insist that the real world's engagement is well described by semiotics but only at levels of nature complex enough to speak of interpretation in something like the usual way. *Engagement* receives different interpretations in these two cases and in others, as do the key words: "interpretation," "world," and "real." We do not take a position on such debates here as it is unnecessary for articulating our model of religious experiences. It is enough for us to make use of semiotic theory's frank acknowledgement of the endless complexity of systems of signs and to insist on some form of critical realism by means of the category of engagement. We leave the fundamental metaphysical inventory questions (is reality at bottom probability distributions? particles? energy? ideas? signs? Peirce's firstness, secondness, and thirdness?—see Peirce, "The Principles of Phenomenology" in *Philosophical Writings of Peirce*, 74–97) to those who think they can be answered and want to try.

sensory patterns produced become signs to be interpreted within their brains. If you stick your tongue out "at" someone, you are not just performing a motor act. In the terminology of George Herbert Mead, you are invoking—for yourself and others—a public system of signs in which there is consensus as to the effects that gesture should produce.[115] The same invocation of a public system of signs occurs when I utter a sentence. Networks of interrelated signs may be demarcated into separate territories that define communities, which vary in their interpretations of human acts. The observation of a public gesture in turn transforms the neural activity of the observer, creating a two-way intercourse of signs. Furthermore, all individuals who are not so estranged that they are incapable of discourse, or unconscious, are automatically and continually engaged in social semiosis. As we type, we are engaged in the social practice of "writing"; we might be wearing clothes that signal our status as at home or in the office; and so on. Certain neural events arise as interpretants of the keys beneath our fingers and the words before our eyes. These in turn act as signs to produce interpretants in the form of further patterns of neural activity, conditioned by patterns previously stored. In sum, the link between neural events and social-psychological events is a flow of semiosis, with successive transformations that lead from neural events, conditioned by the semiotic environment of the brain, to social events, conditioned by the semiotic environment of a particular society.[116] Neural events and social life can be thought of as dimensions of reality that show up together within a single, continuous flux of signs.

At this point, metaphysical choices multiply. There do seem to be levels of reality ranging from the universal and simple to the special and complex. We all believe this because our attempts to study reality as we engage it give rise to scholarly disciplines that in some respects relate to each other in hierarchical ways. But how should this hierarchy of levels be understood metaphysically? We may turn to an emergentist physicalism, to Whiteheadian naturalism, or to dimensionality metaphors for articulating what we mean. Semiotics can play a complementary role to these metaphysical constructions, one that is relatively independent of them. Specifically, more complex levels of reality are registered in (or just are; we are not deciding that question here) a denser flux of signs. Density in this sense can be quantified in principle by counting the ways that signs function as interpretants for and within that which is complex; the density of the semiotic system is the way we know that we are engaging more complex levels of reality. In this way, we continue to evade settling metaphysical inventory questions while preserving a natural way to speak of the relationships between types or domains or dimensions or levels of reality. This allows us to extend the discussion above of the semiotic linkage between the neural and the social to two higher-level components of our model: the social-psychological and the religious-ethical.

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[115] George Herbert Mead, *Mind, Self and Society from the Standpoint of a Social Behaviorist* (Chicago: The University of Chicago Press, 1934).

[116] We find Teske's view one-sided when he states, "Our spirituality resides, not in the finitude of our individual biology, but in a historically and culturally emergent symbolic world," because our neurologically based capacities make the emergent symbolic world possible. See J. Teske, "The Spiritual Limits of Neuropsychological Life," *Zygon* 31.2 (1996): 209–34. Likewise, we find unconvincing those accounts of language and mental life that focus solely on neurology and neglect the necessity of social environment for the establishment and function of semiotic systems. Just as individuals operate within a semiotic milieu, and just as signs are more generally conditioned by the network of signs in which they emerge, so neural events are shaped and constrained by the brain's semantic networks.

First, the social-psychological considerations reflect the ways that the semiotic flux of which we have been speaking relates individual subjectivity to social-linguistic environments. Everyday consciousness is permeated with the sense of a standpoint, the subject. The subject may be present explicitly, as in self-consciousness, or implicitly, as in intentional thought and even some kinds of habitual actions; but we mean to exclude the sorts of habitual and mystical awareness in which no sense of subjectivity is present. A complete account of the subject cannot be derived without both signs originating in neural events and signs interpreted within a special sign-system arising from the social milieu. We take it that the latter sign-system, which includes what we may designate as the "person system," exists because of its compatibility with brain function and its usefulness for organizing societies of individuals. Thus, the experiencing self is neither solely brain-derived, nor solely socially derived.

To account for the experiencing subject, then, we must consider semiotic processes arising both in the brain and in the social milieu, thereby making connections between the individual subjectivity and both the neural and the social-psychological. Body-related neural activity includes the firing patterns that encode movement and the patterns that register sensory events arising within the body and at its peripheral receptors. The boundedness of bodies by their skins, and the fact of their separate spatial positions, are signs derived from interactions with the physical world and other bodies. Neural processes transform bodily activity in the context of a group into a sign—a unique bodily identity—without implying subjective identity. Bodies do not impinge on one another only through their spatial requirements, however. In certain highly social species, they deploy motor acts, even secretions, that function as signs. Such signs produce interpretants in the form of responsive behavior in other individuals. In primate species, social signs are registered and interpreted through a stream of neural semiosis that is well developed, particularly in apes and human beings. In humans, a rich neural semiotic capacity related to the gestures of others may have set the stage for a step into a still more intense kind of semiosis, the person-system. The key in every case is the semiotic richness of the system, which depends in turn on the physiological achievement of critical levels of semiotic density and complexity. For example, the capacity of primate brains for social signaling appears to have accelerated; in addition, human brains are immense compared to those of our closest primate relatives. The sheer amount of wiring permits unimaginably large numbers of semiotic transformations, social and non-social alike. The evolution of very complex societies, in turn, provides a remarkably dense system of signs within which individual brains operate. Within such dense and sensitive systems, signs relating to one's own and other bodies could be interpreted in new ways.[117]

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[117] We step back to note that the subject is a special representation within awareness that appears to be the location of awareness itself. Thus, it is preeminently a spatial concept. In an essay on Kant, Strawson demonstrated that the intuition that we each possess a singularity of subjective experience—the certainty that my experience is mine and not someone else's— derives from an antecedent notion, that of the singularity of embodied persons. See P.F. Strawson, *The Bounds of Sense: An Essay on Kant's* Critique of Pure Reason (London: Methuen and Company, 1966): 162–74. There are empirical criteria for that notion, namely, the existence of individual bodies that have unique identities. Attributing subjecthood to ourselves, then, is an interpretant of individual bodily identity. We saw above that individual bodily identity was itself an interpretant of neural patterns that encode bodily experience. Strawson termed it the illusion of a purely inner and yet subject-referring use for "I."

Second, the religious-ethical can be understood semiotically as an extension of what has just been said about the social environment in relation to the individual subject. The flux of signs becomes denser and more complex under the impact of increasing complexification of both brains and social milieus, but it is not just a quantitative increase in engagement of the world that results. There are also qualitative increases, as demonstrated in the difference between the subjectivity of higher primates and its apparent absence in plants and simpler animals. It is reasonable to suppose that complex semiotic systems and complex brains permitted forms of engagement with dimensions of reality, including questions of value and purpose, that formerly were not possible. The expression of religious and ethical concerns is, like subjectivity, a form of the intensification of engagement with reality. In fact, we suggest that the semiosis of subjectivity, with its accompanying density and complexity, itself constitutes a necessary basis for the intensification of semiosis that we experience in morality and religion.

We argued that the social system of concepts and rules related to persons is external to the brain on the one hand but compatible with it and dependent on it on the other. We said that a nascent phenomenology of separate bodily individuals interacts with neural and social semiosis to produce the subject. Similarly, one might think of the ultimacy dimension as external to human subjectivity, but compatible with it and dependent on it. We know that neural ensembles can be set into motion by language. Can human experience be engaged, in an analogous manner, by experiences of ultimacy? If so, we would expect the dimension of ultimacy to deepen every aspect of the semiotic flux we have described. In fact, the description of ultimacy as the depth dimension of reality seems singularly apt here.[118]

Deep engagement with reality in the forms of morality and religion is both incontestably important in the history of human life and, necessarily on our critically realist point of view, indicative of reality. An explanation that does justice to the richness and potency of the moral and religious dimensions of life—including ultimacy experiences—is therefore required. This is so regardless of how the causes of religious and ethical engagement are finally assigned; the traces of those causes in the form of semiotic transformations themselves demand an adequate explanation. Even a world in which all religious beliefs and all attributions of divine action are fundamentally mistaken remains astonishing, intriguing, and terrifying enough to demand at least the semiotic richness, the poetry and puzzled awe, though perhaps not the dogmatism or exclusivism, of the world's spiritually-oriented traditions. It may even be that literally mistaken yet symbolically referential rituals and dogmas and the forms of life they sponsor can advance profound engagement in the wild semiotic flux of the religious and moral dimensions of life. We do not thereby insist that religious beliefs are mistaken but we are led to ponder their *usefulness even if*

Strawson also pointed out that the concept of person derives from our linguistic community. See "Persons" in *Individuals: An Essay in Descriptive Metaphysics* (London: Methuen and Co., 1959): 87–116. He said that a person is the union of mental life and body and pointed out that the concept necessarily has both first-person and third-person ascriptive uses. While the deployment of the basic person concept appears universal, local cultures have unique ways of characterizing persons that are narrated and enacted dramaturgically by individuals. Thus, at both the level of the subjectivity concept, and the level of the socially constituted person, there is intimate mutual interplay between phenomenological and social psychological signs. Each is mediated through complex neural semiotic activity.

[118] This is the terminology of Paul Tillich; see *Systematic Theology*, vol. 1 (Chicago: University of Chicago, 1951).

mistaken by reflection on the sign-flux within which human beings live and move and have their being. This is the practical implication of what it means to say that religion and morality are intense forms of engagement with the world even while remaining neutral as to the reality and efficacy of putative religious objects to which the cause of such realms of life is sometimes attributed. Semiotic complexity is required for such engagement regardless of the causal story offered for established religious and moral experiences and beliefs.

Individual subjectivity, social groups, and brain processes are connected to one another through semiosis. They may be thought of as the vertices of a triangle whose sides denote bi-directional semiotic transformations. All the transformations taken together constitute the experiencing subject-in-a-social-context. In one respect, therefore, our view stands in contrast to the concept of a hierarchical model in which phenomena at each level are made to give rise to phenomena at the next, "higher" level. Hierarchical models may be epistemically and metaphysically helpful in some ways but the semiotic perspective represents matters differently and, we think, helpfully: the neural, social, and individual territories are mutually bound and mutually determining through semiotic interfaces. And deepening it all are the extraordinarily rich semiotic transactions that we call ethical and religious, of which experiences of ultimacy are the most direct, personal manifestations. The structured character of the semiotic flux to which our model draws attention is pictured in Diagram 2 (see Appendix B).

In saying that ultimacy experiences are peculiarly rich and deep forms of engagement with the world, we are making a couple of other suggestions. First, because ultimacy experiences are defined in the semiotic model as rich and deep forms of engagement and defined in mostly phenomenological fashion in the descriptive section of the essay, we are hypothesizing that these two definitions coincide. That is, wherever exceptionally deep and rich engagement is found, there will also be found ultimacy experiences in the ways we described them, and *vice versa*. Now, such experiences may not be especially religious in character; that is the purpose of the misalignment between the box denoting ultimacy experiences and the circle denoting conventional religious experiences in Diagram 1 (see Appendix B). But they are ultimacy experiences all the same. We think that the experiential source of religion is in part the deepest and richest elements of our engagement of the world; but only some of those are suitable for inclusion in domain of officially recognized religious experiences because of the other social interests of religions. That said, it is interesting to note that virtually every kind of rich and intense form of experience that occurs to human beings is recognized as religious in some cultural context. Second, we are positing a distinction between richness of engagement and focus of cultural and individual attention. While that to which we attend may involve our rich engagement in the world, it is often the case that there is a lot of talk about some unimportant and relatively superficial phenomena and a lot of silence about and even inattention to exceptionally important phenomena. Thus, the amazingly large number of genocides in the last two hundred years is rarely spoken of and actually unknown by most people whereas in some communities the state of grass lawns is an intense topic of conversation. We think that there is a phenomenological difference between focused attention and intense engagement—one that is actually fairly easy for a person to detect given enough time.[119]

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[119] We are grateful for communications with Patrick Mcnamara about this essay and especially for his request for clarification of this point.

This philosophical-semiotic framework allows our model to be neutral but what, we must ask, is the specific content of this model? After all, semiotic transformations, even when good stories are told about them (as we tried to do above), remain fairly vague; for example, you cannot actually individuate or count them. Apart from the possibility of using the model to frame debates about causes in neutral fashion, therefore, it might seem that nothing has been gained by way of specific content. But something has been gained, though it is a modest gain. The positive content of the model has two aspects. First, the relations between individual subjectivity, social groups, and brain processes have been spelled out in some detail in the descriptive taxonomy. Sign transformation is the cement that holds these considerations together and represents them as mutually codetermining factors in conditioning ultimacy experiences. In this way the model brings that descriptive material to bear when it is used to evaluate theories attempting to penetrate beyond the semiotic flux of ultimacy experiences to the underlying causes. Second, the model stresses depth and richness of engagement as the hallmark of ultimacy experiences. This is a consideration for which any grander theory of the causes of ultimacy experiences would have to account.

7.4 The Causes of Ultimacy Experiences

On the basis of this model of ultimacy experiences, can we say whether in fact Ultimacy causes ultimacy experiences? We have been able to speak of ultimacy experiences in terms of the density of the semiotic flux we inhabit without having to decide whether there is anything ultimately corresponding to "ultimacy." That was the plan: the usefulness of the model was envisaged to lie not in making claims about the causes of ultimacy experiences but in framing questions about such claims. How, then, does our model help to frame and evaluate claims about the causes of ultimacy experiences? In two ways, we think, and we describe them in what follows.

First, with the background of centuries of futile debate about divine action in mind, we are working on the assumption that there is little point in setting up a bunch of competitive causal models for ultimacy experiences and then playing them off one another in attempt to make best sense of the data; the odds of success are remote at best. The odds of success might be increased, however, if we were to use the semiotic model as a coordinator of data to aid in selecting among competitive causal models of ultimacy experiences. We wouldn't really need the full power of the philosophical semiotic framework to carry this off, perhaps, but the model would be more useful than its function merely as an inanely overbearing reminder that the best explanation has to make sense of all the various perspectives we elaborated in sections 2–5. So, how would this work? For the sake of simplicity, let us deal with this question in terms of the action of an intentional divine being, which is one kind of divine action. The positing of action by an intentional divine being in explaining the causes of ultimacy experiences occurs frequently in religious and theological contexts, whether it be an experience of divine comfort, the sense of the presence of Jesus, an unaccountable peace given as divine gift in response to the faithful worship of Allah, a moment of inspiration that creates or confirms a belief, the hearing of divine voices and the seeing of heavenly visions, an event of psychological healing following the invocation of the power of God over the natural world, or a process of character transformation springing from a sense of divine forgiveness for past wrongs. Models affirming and rejecting the intentional divine action thesis would be assessed against the other levels of description, such as the neural and the

sociobiological. The usual frustratingly slippery questions would emerge. Is the theological account consistent with the other insights? Must the theological account be deemed merely the higher-order, heavily coded description within a specialized semiotic environment for an experience that is more adequately described in other terms (say, psychological and neural—or Madhyamaka Buddhist, for that matter)?

It might seem that the semiotic model takes us no further than did the ordinary demand that successful models should account for all of the perspectives on ultimacy experiences organized in the descriptive taxonomy—the phenomenological, the neural, the social-psychological, and the theological-ethical. But that is not quite the case. While the semiotic model does not stipulate strict rules for answering questions about which description of the causes of an ultimacy experience is true or more accurate, it does impact the process of debate in three helpful ways. First, all candidate accounts of the actual causes of ultimacy experiences would have to be able to explain the fundamental datum of the structured pattern of sign transformations described in our model (again, refer to Diagram 2 in Appendix B for a summary of that structure)—this is, in effect, a new and sturdy constraint on models. Second, the model's neutrality to questions of causal provenance and truth facilitates its usefulness for conducting debates among experts with very different views about the reality of divine action. People can discuss their models in a common language without simply repeatedly stumbling over the conflicting presuppositions of their explanations. Finally, the model's foundation of detailed, integrated descriptions of ultimacy experiences establishes an important criterion for debate among competitive accounts: the candidate explanations have to *demonstrate* their compatibility with all of the various levels of description. It is not acceptable for candidates merely to *assert* their compatibility with the various levels of description, nor is it possible without penalty to withdraw from the debate for fear of being uncompetitive. The critically realist emphasis in the model's philosophical-semiotic framework implies a common referent of the various sign-descriptions, even when those descriptions are from diverse social-linguistic contexts. The bland assertion of compatibility by virtue of some perspectival move—"they see it their way, we see it our way"—is, accordingly, unintelligible or indistinguishable from mere wishful thinking. If such perspectival compatibility actually obtains, then the semiotic framework implies that it can be explained in detail, at least to some degree.

These three contributions mark a modest but real advance in conducting debates about the causes of ultimacy experiences. These debates, we must remember, may in fact be irresolvable—to return to the image used above, we may simply be refurbishing the art gallery's décor with the switch to philosophical-semiotic conceptuality. We cannot determine that in advance, however, so it is as well to have a relatively neutral and data-rich framework within which to conduct such debates and a slightly enlarged set of criteria to which appeal may be made in distinguishing inferior from superior causal models of ultimacy experiences.[120]

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[120] Note that these constraints apply to all theories of divine action in relation to human experience, of which this volume contains a number. For example, concepts such as whole-part causation or primary-secondary causation are invoked in various places to express how God's action might be compatible with other descriptions of ultimacy experiences. We judge such speculative concepts to be an advance over the mere redescription of the problem in terms of such concepts as supervenience, as usually defined. (But see Nancey Murphy's essay in this volume in which she promises more on behalf of her definition of supervenience than merely the potential for redescribing an established problem.) However, our model not only invites such speculative attempts to demonstrate the compatibility of a *few* levels of

In connection with this, we note that the challenge of reductionism that threatens to make superfluous God-descriptions of the provenance of ultimacy experiences is made neither harder nor easier by our model, but merely is posed happily. With all of the levels of description in place, the full complexity of the problem of reductionism can be appreciated: it is nothing other than the problem of intelligibly coordinating the various levels of descriptions of ultimacy experiences that our model incorporates. And that problem must be pursued using a variety of strategies. We shall not venture far into this territory but we do make the following suggestion. Centralizing the concept of engagement in the semiotic underpinnings of our model shifts the burden of proof in the reductionism debate by bluntly demanding that *all* parties pay careful attention to *all* data relevant to the task of describing that which is engaged and the means by which it is engaged. There is no question in our minds that neglect of relevant data is one of the crimes perpetrated by the hasty assumption of unjustifiably reductive accounts of religious experiences (and there is more than one way to be hastily reductive!).

The second way of bringing our semiotic model to bear on the evaluation of causal models is, we think, far more interesting. Were it not for this second way, we would not have bothered with all of the philosophical-semiotic overhead. The starting point is to notice that the semiotic model is not a causal model. Rather, it is vaguer than traditional causal models in an important respect. Yet it stays close to the data, making it empirically more responsible than traditional causal models of religious experience. This strategy of developing an empirical model that remains vague about ontology is a deliberate attempt to fit the model to the lines of debate, making it vague where the debate seems least tractable and highly specific where the debate seems to promise the clearest answers. The result is the plotting of a course around the edge of the untraversable ontological swamps, all the while staying on the solid ground of relatively uncontroversial data. In short, pursuing this strategy delegitimates debates about whether or not real contact with some sort of Ultimate occurs in religious experiences. In exchange, there is an emphasis on the issue of whether that which is *actually engaged* in ultimacy experiences supports assertions made about ultimacy in theological accounts. For example, is that which is *actually engaged* in ultimacy experiences rightly described as a personal God, as a mysterious natural force, as the hangover of childhood developmental frustrations, or as a meaningless artifact of temporal lobe transients? This is by no means an easy problem but it is a far different and more interesting problem than the irresolvable and often data-censoring debates about reductionism in relation to religious experiences. It clumps all the intractable ontological questions into one corner while organizing ways of answering the more resolvable questions. This approach even sets up an environment for dealing with ontological debates in a systematic, comparative way—and there is no question that systematic comparative metaphysics will be the venue for the best of such debates in our era of multicultural awareness. The key to the effectiveness of the philosophical-semiotic model is the fact that it is vague in all the right places. We indicate below (section 7.6) the sorts of speculations that we think our model permits when it is used to interpret ultimacy experiences on its own terms rather than being limited to playing referee for

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description; it also insists that *all* of the various levels of descriptions are registered in any theoretical portrayal of their compatibility and resists the mere assertion of compatibility of those levels of descriptions.

competing causal models in the traditional but futile game of deciding if a divine being ever intentionally does anything in particular.

7.5 The Value of Ultimacy Experiences

Once the whole array of pertinent data is allowed to have its effect on the interpretation of ultimacy experiences, rather than a subset of it determined by the unreflective or ideological embrace of reductionistic assumptions, a balanced discussion of the value of ultimacy experiences is possible. Admittedly, the theological problems posed by a model such as ours are no easier to manage just because the data set is richer, as we pointed out above. Theological claims about the value of ultimacy experiences are easy to contest, accordingly. In several other respects, however, the value of ultimacy experiences is easier to make out.

First, the transformative efficacy and sheer emotional color of ultimacy experiences makes them valuable. People often change their lives dramatically because of ultimacy experiences, almost always in the direction of greater contentment and emotional maturity. What reams of argumentation and hosts of exemplars are often powerless to achieve, ultimacy experiences can induce almost instantaneously. The data confirm this resoundingly.

Second and more abstractly, the semiotic density expressed in the having and in the social meaning of ultimacy experiences indicates that the environment of human life is astonishingly rich. Indeed, it is rich enough to make ultimacy experiences important and maybe necessary reminders of how quick we are to oversimplify our lives, to trim the interest, to dull the color. And to what end? Ultimacy experiences drive into awareness our tendency to flatten out our life for the sake of the comfort of predictability and the appearance of safety; this awareness helps us to become more realistic and adaptable.

Third, and connected with this, ultimacy experiences are valuable interruptions of the socially programed character of much of our lives. The legitimation structures of society aim for pacific steadiness in all social transactions, in the name of controlling our intriguing environment. But ultimacy experiences are capable of casting social transactions into new and perhaps uncomfortably bright light. They relativize social norms and assumptions in such a way as to open up space for critique. As a result, ultimacy experiences time and again have been wellsprings of transformation and reform. Unfortunately, they have also been the triggering events for violence and enthusiastic neglect of important balancing perspectives. But that there is a positive side at all to the social effects of ultimacy experiences indicates a notable virtue.

All of these benefits are incontestable—at least from all but the most obscure and anti-social perspectives—no matter how mistaken the interpretations attached to the causes and theological significance of ultimacy experiences may finally prove to be. But none of these virtues is even discernible unless explanations of the extraordinary richness of life that is expressed in ultimacy experiences prize fidelity to the data to be explained, a scientific virtue too often neglected in the study of religious experiences.

7.6 One View of Ultimacy and Ultimacy Experiences

We began with neutral description of ultimacy experiences and ended with a model capable of neutrally framing debate about the actual causes of ultimacy experiences. We just now let our hair down a little and argued that ultimacy experiences are

valuable in important ways even if theological theories about their origins and nature prove to be mistaken. In concluding we shall throw caution to the wind and offer a modest suggestion about what the Ultimacy really is that we actually engage in ultimacy experiences. That a psychologist-neurologist and a philosopher-theologian are capable of agreeing on something like this is remarkable, to us at least, but it just so happens that we do agree and so we take a moment here to express our considered opinion.

We have said that the world shows up as *something in particular* in our engagement with it and, therefore, that Ultimacy is really showing up in ultimacy experiences. The manner of Ultimacy's showing-up is a spectacularly rich and dense pattern of sign transformation that links enormous amounts of our experience together and brings mutually enriching significance to them all. We have said that this may be explicable in many ways, but we have resolutely rejected thinly reductive accounts that deny such rich density of meanings; they are insufficiently empirical and, by leaving out the good stuff, commit the sin of being boring. That leaves us with a wondrous world, as monstrously terrifying at some times as it is blissfully peaceful at others. And our aim is to say what sort of Ultimate lies behind these astonishing ways that ultimacy shows up for us. We know what Buddhism says about this, by and large: there is nothing lying behind this showing-up of ultimacy; the point is to journey on an ultimate path toward enlightened acceptance of the world in its wondrous actuality. We know what serious theisms say about it, too: God in various conceptions is what shows up in this most amazing way and God is even more terrifying and wonderful than ultimacy experiences suggest. We even know what serious forms of evolutionary naturalism say about it: nature, needing no creator being and subject to no ultimate purpose, is richer and more wondrous than we can imagine; all we experience so far is what our evolved neural and social capacities enable us to register—it only gets more intense.

We think that each of these three is roughly correct about what it affirms and insufficiently imaginative about what it denies. The evolutionary naturalists and the Buddhists will forever disagree over nature but the former are right about the evolutionary preconditions for our current state and the latter are right about the importance of a path in which enlightened acceptance of the wonders and challenges of life is prized. Neither group tends to have much sympathy for any sort of theism, but that may be because theists typically speak about God in ways that needlessly conflict with the insights of evolutionary naturalists and Buddhists. The mystics of theistic traditions do not make that mistake, however. They describe an Ultimate that defies all descriptions, whether as physical nature, as a divine being, or as a path of enlightenment. Our social and neural capabilities presumably allow us only primitive forms of engagement with this most profound mystery even now. After all, it must be as subtle and profound as the creative potential of nature. When in the process of evolutionary development this mystery began to be consciously perceived in a rich flux of sign transformations, it is probable both that social-linguistic systems already existed that were capable of expressing that encounter to some extent and that these experiences forced adaptations in those social-linguistic systems. Even at their most sophisticated, however, social-linguistic expression of ultimacy experiences has always and only been from a particular point of view. If simple flowers and complex personal relationships defy systematic description, then how much more will our descriptions of Ultimacy refract into uncountably many perspectives? This Ultimate is the power of being in one conceptuality, a morally unfamiliar drive for enrichment and complexity in another, and a passionate lover all-consuming in its demands in

yet another. None of these descriptions will do, yet the stirrings in the mysterious depths of reality continue to leave traces in the semiotic flux we inhabit and especially in ultimacy experiences. We can no more remain silent about this enormous strangeness than we can undo the evolutionary development that gave us the capacity for subjectivity, sociality, culture, language, and rich intensity of meaning.[121]

Religion is right at a deeper level than most of its theological claims and some of it practices suggest: there is something out there and in here. We think many scientists sense the same thing in studying the wonders of nature, even when they elect not to use religious categories in describing those wonders.[122] This ultimate *something* that we sense in the depths of nature is not much like a personal God. It is not a causal force independent of the rest of nature. It does not reflect human moral categories very closely. It is not especially amenable to cognitive investigation because inquiry quickly trips up on the phenomenon of conceptual refraction described above. It is not even much like a being. And yet it is not nothing, either, even if Buddhists are right to say that it is somehow indeterminate or empty. It *is* real, and it is doubtless more wondrous and strange than our best and worst guesses. This is the hypothesis that best makes sense of the basic data, including the data of religious experience. It is a proposal vague in the right way and one with which more elaborated theories of Ultimacy (such as doctrines of God and divine action) should strive to be consistent. It is a modest hypothesis, metaphysically minimalist, realistic about the conflicting descriptions of Ultimacy found in the theological claims of religious groups, and bearing little resemblance to folk religious ideas. But it is a powerful idea, well attested by mystical traditions worldwide, as congenial to the natural and social sciences as it is to religion, and well matched to the amazing facet of human life that we call ultimacy experiences.

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[121] There are obvious ways to extend this view in the direction of religiously and philosophically viable versions of naturalism. A number of recent books advocate such forms of religious naturalism. For example, see Charley Hardwick, *Events of Grace: Naturalism, Existentialism, and Theology* (Cambridge and London: Harvard University Press, 1996); Gordon D. Kaufman, *In Face of Mystery: A Constructive Theology* (Cambridge: Harvard University Press, 1993); and Robert Cummings Neville, *The Truth of Broken Symbols*.

[122] For a recent example of this, see Ursula Goodenough, *The Sacred Depths of Nature* (New York and London: Oxford University Press, 1998).

Appendix A: Reader's Guide

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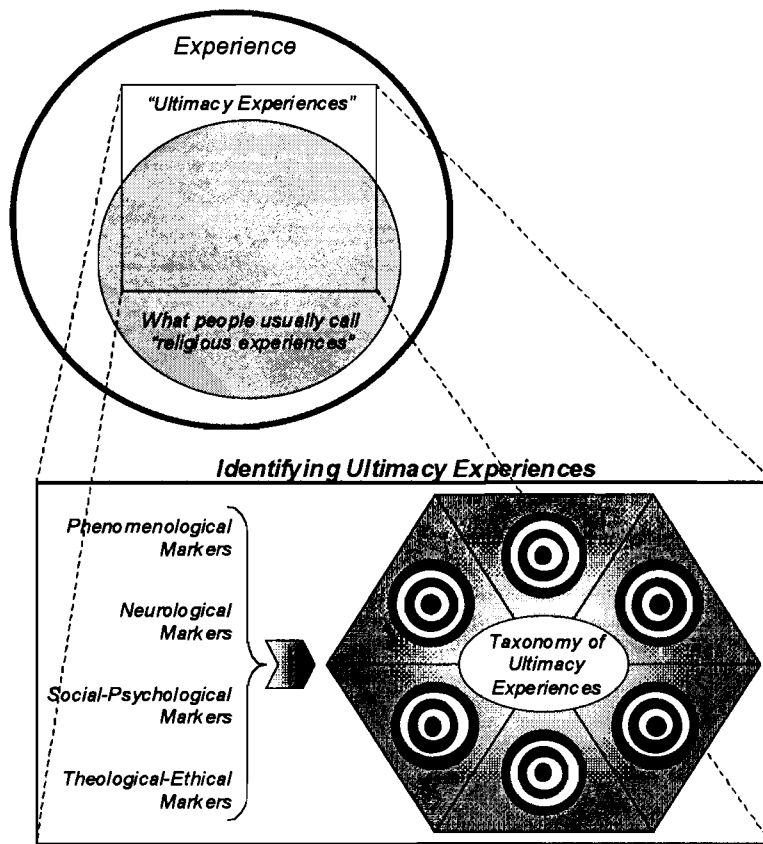 Applying the Model (7.4–7.5)
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Appendix B: Diagrams

Diagram 1. Identifying the Target Group—Ultimacy Experiences

(1) Ultimacy experiences include much of what people usually describe as "religious experiences" but also other experiences not usually described as "religious." (2) Several sorts of markers help to identify the various types of ultimacy experiences. (3) Purported instances of ultimacy experiences approximate the ideal types to greater and lesser degrees (represented by the targets at the center of each type in the taxonomy).

Diagram 2. The Structure of Sign Transformations in Ultimacy Experiences
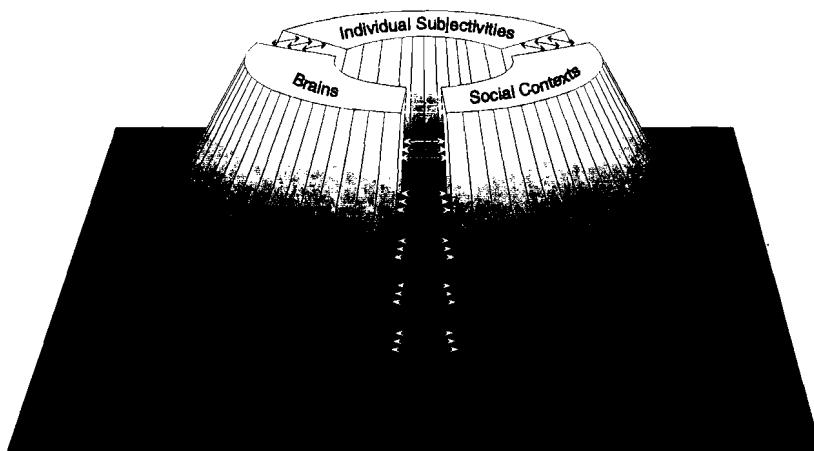
(1) Sign transformations (represented by arrows) flood back and forth among individual subjectivities, social contexts, and brains. (2) Sign transformations are greater in number in ultimacy experiences than in ordinary experiences (represented by arrows deeper into the emergent structure of human experience). (3) This binds all three domains together more richly and intensely, enabling deeper reaches of reality to be registered, in ways that are (a) difficult to express cognitively, and (b) frequently transformative in their effects. (4) These are structural features of causal traces (sign transformations), not causes themselves. Hypotheses about the actual causes of ultimacy experiences must account for these structural features.