THE ROLE OF COGNITION AND FEELING IN RELIGIOUS EXPERIENCE

by Nina P. Azari and Dieter Birnbacher

Abstract. Inquiry into religious experience is informed by conceptualizations of emotion. Although a long history of theoretical and empirical work has provided considerable insight into the philosophical, psychological, and (more recently) neurobiological structure of emotion, the role of cognition and feeling in religious emotional states remains poorly conceived, and, hence, so does the concept of religious experience. The lack of a clear understanding of the role of emotion in religious experience is a consequence of a lack of an adequate interdisciplinary account of emotions. Our primary aim here is to examine the consequences of a properly interdisciplinary understanding of emotions for the analysis of religious experience. To this end, we note points of convergence between psychological, philosophical, and neuroscientific accounts of emotion and between such accounts and reports on the neurobiology of religious experience, in particular two recent human brain imaging studies. We conclude that emotions are richer phenomena than either pure feeling or pure thought and that, rightly understood, emotion affords religious experience its distinctive content and quality. Accordingly, we argue that religious experience cannot be reduced to pure feeling or pure thought. Rather, on our analysis, religious experience emerges as "thinking that feels like something."

Keywords: emotion; human brain imaging; neuroscience; religious experience.

One of the presuppositions operative in inquiries into religious experience is that religious experience has a necessary emotional component. A long

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history of theological and philosophical scholarship (especially within Christianity) shows that religious experiences such as are involved in religious worship or prayer (i.e., various forms of "religious state") are invariably characterized by emotional content (Martin 1987). This has led to the approach of studying religious experience by studying its emotional content, an approach not unique to empiricists but as well as of some philosophers of religion (for example, Proudfoot 1985). That is, once the emotional content of a religious experience has been determined, one can gain direct insight into the nature and structure of religious experience. However, this kind of approach relies on implicit preunderstandings of emotion, for how emotion is understood determines directly how religious experience is understood. Thus, an adequate understanding of emotion is crucial to conceptualizing religious experience.

Indeed, the role of emotion in religious experience remains poorly conceived, and, hence, so does the concept of religious experience (Martin 1987). This, we propose, is a consequence of a lack of an adequately broad interdisciplinary account of emotions as they apply to religious experience. We offer our work in this essay as an example of how rigorous interdisciplinary engagement can open up new meanings for both neuroscience and religious studies.

Our aim is to explore what the emotional nature of religious experience implies for the analysis of religious experience. To this end, we examine points of convergence between psychological, philosophical, and neuroscientific accounts of emotion, and between emotion theories and reports on the neurobiology of religious experience, most recently those based on human brain imaging technologies. As we will show, quite a number of conceptualizations of emotion important to the empirical study of religious experience are inadequate to account for the phenomenon in that they underrate the complexity of emotion. Such views inappropriately cast an emotional experience as a matter of pure feeling, thereby giving an account of religious experience as one-sided as that of a cognitivism, which, conversely, reduces religious experience to pure thinking or pure belief. Indeed, current psychological, philosophical, and neuroscientific theories understand emotions as far richer phenomena than either pure feeling or pure thought, thereby suggesting that religious experience cannot be reduced to pure feeling or pure thought. We conclude that, rightly understood, emotion affords religious experience its distinctive content and quality. On our analysis, religious experience emerges as "thinking that feels like something."

Complexity of Emotion: A Problem for Empirical Investigation

Theoretical and empirical work in psychology and neuroscience on emotion has enjoyed a long and fruitful history, rendering multiple theories

regarding the structure and biological underpinnings of emotion. Each empirical contribution is, however, conditioned by the needs set forth by empirical methodology, most important of which is the need for simplification of the phenomenon under investigation. Even as oversimplification (radical reductionism) has fallen out of favor in the contemporary experimental human sciences (Schilling 1973; Tolman 1996), there still remains a need to formulate parsimonious a priori operational definitions and concretely objectify the phenomena of study, and this inevitably leads to oversimplification.

Broadly conceived, there have been two views of emotion in play in empirical investigations of religious experience:

1. Noncognitive (feeling or somatic) theories. An example of a noncognitive account is a somatic, or peripheral, theory. On this view, emotions have a necessary physiological, noncognitive "core," and an emotion consists in an automatic and immediate ("pre-wired") reading off bodily states of arousal. The specificity (content) of an emotion is given in a precognitive awareness, or sensing, of bodily events. Cognitive elements such as thoughts and beliefs are secondary to an independent "root," bodily mediated, preconceptual feeling. Thinking need not play a causal role in producing behaviors, and the perspective of the experiencer is not crucial; the subject is conceived of as a passive recipient (James 1884; 1890; Zajonc 1980).

2. Cognitive (appraisal) theories. According to these, bodily arousal, even if required on some accounts, does not contain the "content" of a specific emotion. Rather, the specificity of emotion is given in some kind of cognitive processing (an evaluation or appraisal, a causal belief, involving learning, memory, or mental representation), and the perspective of the experiencer is crucial to the experience. In this sense, all emotions are cognitive in structure (Schachter and Singer 1962; Scherer 2001; Lazarus 1982; 1984; Rolls 1999).

How emotion is understood by each theory is directly informed by how each theory conceives of the relation between feeling and cognition (Eich and Schooler 2000; Lane et al. 2000). In an extreme noncognitive view, such as a somatic theory, emotion has nothing to do with cognition; the two belong to quite distinct domains. An extreme cognitive account (for example, social-constructivist) posits that emotion essentially is—or is reducible to—a cognitive construction.

Given the tendency toward simplification in empirical work, it is not surprising to find that early forms of each theory tended to radicalize their claims. An early noncognitive conception of emotion is the so-called James-Lange Theory, a somatic view that combines the efforts of William James (1884) and Carl Lange ([1885] 1922). James-Lange theory has played an important role in the empirical study of religious experience. For James in particular, emotions and feelings are identical in the sense that both simply

"happen to" a passive subject and are directly and incorrigibly read off bodily changes occurring automatically in response to some environmental stimulus (James 1890, 2:449–50). All emotional experience can thus be reduced to a peripheral and specific bodily response, which is then automatically and unerringly registered in one's internal world.

Empirical evidence has accumulated to challenge the James-Lange theoretical account of emotion (Eich 2000; Rolls 1999). One notable weakness is the inability of this theory to explain why some stimuli elicit emotional response and others do not. Moreover, a number of studies have shown that the peripheral changes often produced during emotion are not distinct enough to carry the information needed to experience subtly different emotional states. Rather, the particular emotion that is experienced seems to be determined less by the particular bodily arousal state of a person than by the situational context and the stimuli to which this person is currently exposed.

Such challenges have led to a cognitive theory that has been particularly important to the study of religious experience: a common and early version of attribution theory (Schachter and Singer 1962). According to this formulation of attribution theory, the content (specificity) of an emotion is taken to be reducible to a particular kind of cognitive construction. On this account, two factors contribute to making an emotion: an initial undifferentiated bodily arousal followed by a causal belief concerning the source of that arousal feeling. Although an emotion may be triggered by a state of bodily arousal, attribution theory holds that its essence is a pure thought—more specifically, a belief about the cause of one's state of undifferentiated bodily arousal. Thus, while ***a*** bodily arousal feeling is necessary for an emotion, it does not determine the specificity of the emotional experience. Indeed, the feeling going with emotion is empty of (cognitive) content. On an attributional account, the cognitive aspect of an emotion consists in a rational process, a causal explanation (Schachter and Singer 1962). By the mid-1970s this view was dominant in the study of emotion (Eich 2000).

Neither theorization has stood up to critical scrutiny (cf. Eich 2000; Lazarus 2001; Schorr 2001). At present, there is a broad consensus among emotion theorists that emotion cannot be reduced to either a pure and distinctive bodily arousal (feeling) or a pure cognitive construction (thinking) (Eich 2000; Scherer 2001; Ben-Ze'ev 2000; Nussbaum 2001); both participate in emotion. The current view is that there may well be some so-called basic emotions, involving principally bodily factors and no cognition at all, that are built into human evolutionary nature, prewired and automatic (Niedenthal and Halberstadt 2000), but that these are best understood as only aspects of emotion and not the full phenomenon. Similarly, most theorists accept that many emotions, especially in humans, rely to some extent on cognitive processes and are largely culturally and so-

cially determined (Scherer 2001). *Cognitive* is in this context is taken to refer, at the minimum, to beliefs about or an interpretation concerning an object or a state of affairs.

Importantly, this conceptualization does not specify that *cognitive* necessarily refers to an act of knowing, although it can. Nor does such an understanding commit to a particular structure of belief or interpretative process. Consistent with current neuroscientific views, *cognitive* includes both conscious (explicit) and nonconscious (implicit) processes (Marshall 1987). As a consequence, most theorists today maintain that human emotion is, at the very least, cognitively mediated. That is, the specificity of an emotion involves some kind of evaluation, appraisal, or judgment concerning the context in which the experience occurs. In sum, emotion as conceived in the contemporary literature is understood to be a separate mental faculty, with its own structure and rules of operation, engaging both noncognitive and cognitive processes (Eich and Scholer 2000; Rolls 1999). However, radically simplistic noncognitive and cognitive views of emotion have played a dominant role in the empirical study of religious experience.

The move to oversimplify has not been unique to the empirical agenda. Indeed, an analogous tendency can be observed in philosophy. Historical and recent theories of emotion have tended to stress one or the other single component, with the result of reducing the complexity of emotion. Descartes, who offered an early somatic-type account, stressed the part played in emotions by bodily factors, thereby reducing the subjective feeling involved in emotion to an immediate read-off of bodily response. Spinoza, who gives emotion and the mastery of what he calls passive emotions a crucial role in the strife for inner independence, was well aware of the part played by cognitive factors but paid little attention to the feeling component. In phenomenological theories of emotion like those of M. Heidegger (1963), J. P. Sartre (1939), and H. Schmitz (1969), the feeling content is fully reflected, but there is an inadequate representation of bodily factors in the production and expression of emotional states.

What has this simplification as regards emotion meant for the phenomenon of religious experience? From a James-Lange theoretical understanding of emotion, the emotional content of religious experience consists in a "pure" feeling that comes before and apart from any thoughts and beliefs. The feeling is the core of religious experience. Religious experience emerges as fundamentally noncognitive, a preconceptual, private, immediate, incorrigibly known feeling that is totally independent from thought and beliefs (James 1902; Otto 1926; Schleiermacher 1958). Moreover, the external stimulus that incites the bodily arousal is critically important for the specific character of an emotion (that is, there are presumed emotion-specific stimuli).

In contrast, more recent attempts to conceptualize religious experience as cognitive have relied heavily on an attributional account of the emotions (Proudfoot 1985; Spilka and McIntosh 1995; Spilka, Shaver, and Kirkpatrick 1985). From a commonly understood attributional view, the cognitivity of religious experience consists in a religiously formulated causal claim (belief) regarding the (religious) source of an otherwise anomalous physiological arousal, the "feeling" (Proudfoot 1985). Here religious experience, as all experience, emerges as essentially cognitive, and the structure of the cognitivity takes the form of a causal belief.[1] In contrast to a somatic account, the feeling aspect of the experience—while similarly necessary, preconceptual, and consequent upon bodily arousal—does not provide information concerning specificity of the experience. Correspondingly, stimulus specificity is not the key to specifying an emotional experience on an attributional account, but neither is the cognitive content as such (what the experience is about). What is central to specifying an experience as religious is a causal explanation that the subject believes is most appropriate to the situation.

The difficulty with any simplistic account of emotion is that it may render only a particular aspect of emotional experience and, hence, an inadequate picture of religious experience. Moreover, any "discovered" aspect of emotion emerges directly as a consequence of a chosen perspective or method of inquiry (empirical, phenomenological, introspective, theologically apologetic, and so on). Clearly, for a full account of emotional experience—and, correspondingly, a more adequate account of religious experience—one must take seriously both its external, or public (behavioral, physiological), and its internal, or private (phenomenological, introspective, subjective felt quality), character. Neither purely somatic, nor purely cognitive, nor purely phenomenological theories of emotion are adequate in and of themselves. All human experience, emotional and religious, is a complex matter of embodied thinking and feeling. The question is, how and what does each—thinking and feeling—contribute to an experience? It is interesting to see what new insight may emerge for emotional experience, and consequently, for religious experience, when various theoretical accounts are integrated across traditionally disparate disciplines.

TAKING THE COMPLEXITY OF EMOTION SERIOUSLY

By combining the accounts of emotion provided both by analytical philosophy of mind (Alston 1967) and phenomenology (cf. Sartre 1939; Schmitz 1969), one obtains the following list of aspects, or components, of emotion:

1. A *cognitive* component, which provides the intentional object and/or the belief content of an emotion. For many types of emotion, it is characteristic that they have an intentional object and are directed at some-

thing in the outer or inner world, for example fear or jealousy. Usually, the intentional objected is provided by a belief about the object—the belief that a lion is standing in front of me, for example, or that my husband has a mistress.

2. An *affective* component, which carries with it a feeling that may be more or less specific. Fear "feels" different than jealousy, even if they have the same intentional object and result from the same belief. By their feeling content, most emotions can be straightforwardly assigned a value on the scale from positive to negative, though sometimes a felt quality consisting of both positive and negative valences can coexist.

3. A *motivational* component, which connects cognitive content and feeling content with certain bodily reactions (such as movements of flight) and with impulses to act in appropriate ways.

4. A component of bodily *arousal*, which can take any value between a weak readiness to react to a full-scale agitation. It is this component which is often felt to be a disturbance of normal mental and bodily functioning (an aspect stressed by Descartes, for example).

5. A *transformational* component, by which the perception of the inner and outer world is changed by emotion, so that the world is seen to mirror the emotional state of the subject even without his or her being aware of the emotion itself. This aspect of emotion has been succinctly expressed by Wittgenstein: "The world of the happy is different from the world of the unhappy" (Tractatus 6.43).

Two warnings are in order at this point. The first is that all these aspects of emotion are purely abstract. The ability to distinguish these aspects does not mean that they can be separated in reality or are supposed to be causally independent. On the contrary, there seem to be so many mixtures of and dynamic interactions between them that David Hume, in the eighteenth century, was completely right when he talked of emotions in terms of a "chemistry" of emotions.

The second warning is that the aspects on this list are exhibited only by what might be called emotions in the full sense. Emotions in the full sense do not exhaust the range of emotional phenomena. In addition, there are a number of emotional *states* that meet only some of the conditions on the list but, nonetheless, are clearly related to emotions by appropriate family resemblances. For example, an emotional state, which must not be confused with emotion as such, is *mood*. Mood shares with emotion the aspects 2, 3, and 5 but not 1 and not necessarily 4. Being in love, for example, can be interpreted as a mood and distinguished from the emotion of love by the absence of a necessary intentional object. Likewise, bad temper is a mood distinguishable from anger by not being directed at anything in particular.

An emotional state that has aspects 1, 3 and 5 but does not exhibit aspect 4 (and only rarely 2) is an emotional *attitude*. Emotional attitudes

were called by Hume "calm passions" and were distinguished from "violent passions" by their lack of excitement and agitation (Hume 1888, 417). Calm passions do not manifest themselves primarily in physiological parameters or in episodic feelings or sensations but in their role of motivating action. Because they are nonviolent and "cause no disorder of the soul," they tend, as Hume noticed, to be mistaken for reason and misinterpreted as purely rational. We may add that calm passions are real passions, especially for the reason that they determine a specific view of the world. This aspect is mentioned by Sartre, whose analysis of emotion as a "transformation of the world" can easily be extended to emotional attitudes. Emotional attitudes imply certain interpretations of given data, and these interpretations are more stable in time than the interpretations accompanying more episodic emotions, which mostly are of short duration. In emotional attitudes, as in emotion in the full sense, the data provided by raw experience are interpreted in the light of the dominant attitude. The pessimist and the optimist ascribe different meanings to the same data; the anxious man is more frightened than the fearless man by the same phenomena. Usually, these interpretations go together with valuations: attitudes, like benevolence and malevolence, trust and distrust, optimism and pessimism, clearly influence the valuations we put on events in the world.

There is a further trait commonly attributed to emotions that is not in the list because it is not, strictly speaking, one of its components: the essentially passive character of emotions. Emotions happen to us; we have only very limited control over them. This is true even for their cognitive component, which in the context of emotion typically consists of thoughts that come to us unwilled and not of thoughts we actively and deliberately engage in. Whoever is frightened of a lion does not typically choose to be frightened of the lion, nor does he or she choose to believe that there is a lion standing in front of him or her whenever there is, in fact, one standing there.

In several respects, the results of neuroscientific studies of emotion fully confirm the philosophical analysis. The study of the neurobiological basis of emotion has a long history (LeDoux 1996; Rolls 1999). But it is only recently, with the advent of relatively noninvasive human brain imaging techniques such as PET and fMRI, that new insight has been forthcoming concerning specifically human emotional experience. Neuroimaging findings suggest that emotion is a much more complex matter than had been conceived on the basis of work in nonhuman species. One result of these studies is that the close relation of emotion and cognition suggested by a philosophical analysis seems to have its counterpart, on the neuroscientific level, in a close interaction of emotional and cognitive systems. Although most probably a separate domain of human brain functioning, with its own rules of processing (Eich 2000), emotion is nonetheless tightly bound up with cognition.

Statements like this have to made with due caution. The identification of certain areas of the brain or of certain neural systems as "emotional" or "cognitive" inevitably rely on incomplete and indirect evidence stemming from earlier nonhuman animal and lesion studies. Claims based on neuroimaging studies of emotion (or, for that matter, of any other aspect of conscious experience) cannot be more reliable than the evidence supporting the prior correlation of brain structures with kinds of conscious events. Though there is no circularity involved here, it remains for future research to confirm the hypothetical correlations used in drawing on neuroimaging studies in clarifying the nature of emotion.

Neuroscientific accounts of emotion sometimes conform to the above philosophical conceptual structure without using quite the same terminology. One example is the theory of E. T. Rolls, who offers one of the most current, systematized, and comprehensive neuroscientific accounts of emotion. On Rolls's view, emotions can be classified according to whether they are produced by (1) the presence of positive reinforcers (pleasure, elation, ecstasy) or negative reinforcers (apprehension, fear, terror), or by (2) the absence of positive reinforcers (frustration, anger, rage) or a termination of negative reinforcers (relief) (Rolls 1999, 63). This aspect of Rolls's conceptualization of emotion is fully compatible with the affective component (aspect 2) emergent from the foregoing philosophical analysis. According to Rolls, emotions necessarily have cognitive content—specifically involving an appraisal or evaluation—at least to a certain degree, but the cognitive aspects involved in emotion may or may not be at the level of conscious awareness. In principle, they can remain totally unconscious (1999, 62).

Does Religious Experience Reduce to a Feeling, or to a Thought?

It is plausible to assume that there is a close relation between emotion and religious experience. But what aspects of emotion play a role in religious experience? Investigations into the phenomenal aspects of religious experience invariably render reports consisting in some affective, felt dimension (Smith 1995). Though thoughts and beliefs play an important role in religious life (Pye 1994), religious belief differs from factual belief by its emotional quality: believing in God is more than believing that God exists. The element that sets off "believing in" from "believing that" can be identified as an element of trust (Kutschera 1990, 122). Trust in God is different from a mere belief in the existence of God or from the belief that God is trustworthy. It is a positive emotional attitude toward the object of trust. The phenomenon of religious belief is not exhaustively accounted for by the description of its propositional ("doxastic") content. However, although believing in the existence of God is more than believing that God

exists, the doxastic belief that God exists is an element in the belief in God and, correspondingly, in religious experience.

Therefore, even an account of religious experience in terms of religious emotion does not reduce this emotion to a "pure" feeling. Indeed, if there were a uniquely pure religious feeling (involving no cognitive character), it would have to be present in all cases of religious experience and absent in all other cases. Otherwise it would not correspond to the specifically religious element in religious experience. It must be doubted, however, whether the feelings picked out by the "sentimental" theories are able to meet this condition. The problem is that the feelings of the Sublime or of the awe-inspiring identified with the essence of religion are not specific enough to demarcate religious experience from other kinds of deep and forceful experience. Feelings of awe occur not only in the sphere of religion but also in the spheres of art, nature (wilderness), and romantic love. So, although religious experience has a feeling aspect, it is to be doubted whether this is the exclusive role for emotion in religious experience, that religious experience can be justifiably reduced to a feeling. Experiences of mystical union, transcendence, or conversion, which attest to an extraordinarily intense felt dimension, may be associated with some types of religious experience, but they are not the core of religious experience and are far from being its necessary elements.

An analogy to the "sentimental" theories in the psychology of religion may be found in recent empirical investigations of religious experience. With the exception of two very recent reports, neurophysiological studies on religious experience have been grounded on, and support, a noncognitive view. According to such studies, religious experience is conceptualized as an "abnormal" brain state, which at its core is caused by automatic, preconceptual, immediate, lower-level affective brain processes (Persinger 1983; 1984a, b; 1993; 1997; Puri et al. 2001). The brain system thought to be the substrate of such primitive affective processes is the limbic system. Propositions such as the recent "limbic marker hypothesis" of religious experience derive from such an understanding (Joseph 2001). According to this hypothesis, only if the limbic system is active during the experience can one conclude that religious experience has occurred. The absence of limbic activity means that religious experience was not present. One consequence of such interpretations regarding the neural basis of religious experience is that one can "locate" religious experience in the brain (and, some claim as well, locate neurophysiologically "religion" or "God"; see Alper 2001) and that the essence of the experience is independent of the experiencer—the subject plays no role in making the experience what it is. Indeed, the recent controversial proposal of a "God center" in the human brain (Joseph 2001) follows directly from this interpretative scheme. According to this approach, religious experience emerges as a root feeling, unmediated by cognitive interpretations or attitudes, preconceptual, pri-

vate, immediate, incorrigibly known by a pure feeling, totally independent from thought, beliefs, or any type of cognitive activity. Religious feeling is driven by an external stimulus and is subsequently registered by a passive yet consciously aware subject. Whatever thoughts or beliefs with which the experience may be associated are secondary to the pure feeling.

This view is not compatible with the results of two very recent neuroscientific studies (Azari et al. 2001a; Newberg et al. 2001), nor is it supported by current theories of the emotions. Andrew Newberg and his colleagues performed a neuroimaging study (using SPECT) of Buddhist meditation. They reported that brain areas involved in so-called higher-order cognitive processes (complex visual perception, attention, orientation, and verbal conceptualization) were integral to the experience (for example, areas such as the posterior parietal lobe, thought to be involved in creating mental representations of the self and orientation in space). Based on this study and earlier work, Newberg and others have hypothesized that religious and mystical experiences are mediated by complex patterns of neural activity involving brain structures of the autonomic nervous system, the limbic system, and neocortical areas (occipital, parietal, and prefrontal cortex). Thus, different mystical (or religious) experiences[2] are marked by variable and relative contributions of each of these structures (Newberg, d'Aquili, and Rause 2001, 117ff.). On this account, one cannot simply "locate" religious experience or God. Central to this view is that the meaning of the experience for the subject is critical (Newberg, d'Aquili, and Rause 2001, 111). In this regard, their work (and the interpretation thereof) supports the view that religious experience is at the very least cognitively mediated. More specifically, on this account, the essential cognitivity of such experiences is functionally multidimensional, involving seeing the world as a whole, reducing the whole into analyzable parts, abstract thinking (generating theories, beliefs, assumptions), mathematical calculation, causal explanation/interpretation, binary reduction, and assignment of what exists (that is, what is real) (Newberg et al. 2001, 46ff.).

Nina Azari and colleagues (2001a) studied a group of self-identified Protestant Christians. These subjects held the conviction that the biblical text was the literal word of God. PET scanning during states which they themselves identified as typical religious states showed a brain activation pattern that corresponded to their individual self-perspectives. The activated brain areas were those associated with learned cognitive activity, sparing limbic areas.[3] This study provides support for the view that religious experience is a cognitively mediated phenomenon, for which the perspective of the experiencer is central.[4] Even as these findings suggest that religious experience is a matter of thinking (cognitive activity), however, they also reveal that such an experience *feels* uniquely religious, even without evidence of a concomitant autonomic arousal (that is, of limbic activity).

Obviously, the feeling aspect of the experience was bound up with the thinking and did not necessarily come before it. In this sense, religious experience emerges as "thinking that feels like something."[5] Taken together, these recent neuroscientific findings suggest that religious experience is, at the very least, cognitively mediated, for which the perspective or interpretation of the experiencer is crucial, and that the cognitivity of religious experience is not just about explaining (giving a causal explanation for) a bodily arousal (a cognitively empty "feeling").

The understanding of religious experience resulting from these findings is that religious experience is a complex state in which beliefs and feelings interact in a way similar to what above was called an "emotional attitude." An emotional attitude is not an emotion in the full sense involving bodily arousal, but, as in emotion, cognition and feeling, and the motivations and interpretations they entail, are intimately conjoined. By virtue of its cognitive content, religious experience is cognitively structured and socioculturally conditioned. Its concrete nature depends on learned religious beliefs and concepts stored in memory as mental images.

Belief and Attribution and Their Role in Religious Experience

What are the nature and structure of the cognitive aspect of religious experience? Can the cognitivity of religious experience be adequately accounted for in terms of an *attributional* understanding of emotional experience?

The cognitivity of religious experience does not go so far as to make religious experience a purely rational activity, an activity of explicit judgment. Religious experience does not necessarily involve judgments conceived as datable mental acts. Nonetheless, it presupposes a certain frame of thought and interpretation. Religious experience operates within a *field* of believing; the belief affords the space for the experience. Hence, the belief does not as such enter the scene but functions as a background condition guiding the way the believer interprets and evaluates his or her relation to the world as well as to the being to which this person feels religiously related. The distinctive cognitive trait of religious experience is not an explicit judgment but an attitude and a presupposed framework of interpretation. The religious person "sees" the world and him- or herself differently from the nonreligious person. The difference between the religious and nonreligious view of the world is not a difference in factual information or factual expectations but in attitudes to the same class of facts. The dispute between the theist and the atheist is, unlike the dispute among scientists, not a dispute between rival hypotheses but between rival ways of seeing the world (Wisdom 1964). Each of these perspectives is bound up with different feelings and different evaluations.

The results of our work here do not support the proposal that religious experience always or necessarily involves an explicit conscious judgment

about specifically religious objects. In this sense, they also do not support an attributional account of the cognitive dimension of religious experience. On an attributional understanding of religious experience, expanding B. Weiner's attribution theory of emotions (Weiner 1986), religious experience would involve the attribution of a subjective experience (a cognitively contentless feeling) to external causes such as God, who is thereby assumed to be not only the intentional object but also the causal source of the experience. Alternative contemporary cognitive formulations of emotions and recent neuroscientific research have called into question the adequacy of an attributional account of the cognitivity of emotion (Scherer 2001; Lazarus 2001). In brief, the cognitive aspect of an emotional experience need not be limited to a causal belief about the origin of the experience. The cognitivity of an emotion is best construed more broadly as an appraisal or evaluation; thus, a causal belief or judgment is but one kind of appraisal or cognitive activity that plays into an emotion (Ochsner and Barrett 2001, 50). In this regard, the cognitivity of religious experience need not be limited to a causal belief.

Such a conclusion does not imply that there are not particular examples of emotional experience for which causal attribution is typical or even essential. Indeed, that there are such experiences was already noticed by Spinoza, who defined love, for example, as "joy, accompanied by the idea of an external cause" (Ethics, III, 13 Sch.; Birnbacher 1999). It is characteristic of love that the object of love is at the same time interpreted as its cause, at least as its central cause. Love, however, is not the only emotion with attributional features. The person who is in a rage is persuaded that this rage is owed to the same thing he or she is furious about. Similar attributions are characteristic of all reactive emotions, such as gratitude, resentment, revenge, indignation, and joy.

Because of their cognitive component, emotions can be judged as adequate or inadequate, justified or unjustified, depending on the extent to which the belief—which is part of the emotion—is held by an observer to be justified. Plato introduced the concept of "false pleasures" in his dialogue *Philebos* precisely to open up the possibility of rational criticism of emotion. His point was that even such (purportedly) nonrational items of human psychology as desires and emotions are not entirely beyond the reach of critical reason. Even those parts of our nature that we share with other animals are transformed in the human in such a way that they are partly amenable to rational criteria.

One consequence of including causal attribution in the cognitive component of emotions, however, is a corresponding increase in the risk of going wrong. The element of causal attribution adds to the ways in which an emotion can be misguided, inadequate, or irrational.[6] There are, as far as we see, three additional kinds of error:

1. Contrary to what the subject thinks, the object is not the full cause of the emotion but only a triggering object or event, the main cause lying in other factors, internal or external to the subject.

2. Contrary to what the subject thinks, the object does not causally contribute to the emotion but is only a screen on which the emotion is projected. In this case, all causal factors lie outside the object, either within or without the subject.

3. Contrary to what the subject thinks, the object does not exist (or does not obtain) but is a delusion or illusion wholly or partly caused by the emotion itself.

The first model is roughly that of Freudian *cathexis*: a process triggered by an object which then plays the role of the focus to which a preexisting emotional energy is directed.

The second model is exemplified by Faust's "intoxication" with Gretchen after having drunk the love potion. The witch brewing the love potion rightly foresees that "he will see Helena in any woman." For Faust, however, Gretchen, the first woman he happens to come across, is "the one," inexchangeable and irreplaceable. Romantic love, according to this model, is an illusion (though probably a highly useful illusion; see Frank 1988) of uniqueness. Any other woman would have fulfilled the function of serving as a projection screen for an emotion whose causal roots were wholly within the subject.

The third, and most radical, mode explains the subject's belief directly by his or her emotion. According to this model, the belief in the very existence of the object is a product of the emotion itself. A well-known example for this model is the dictum by Statius, *primus in orbe deos fecit timor*, which explains the assumption of the reality of gods by independent feelings of fear, which are given a fictitious object in order to transform them into emotions and make them cohere with the rest of the subject's view of the world.

With respect to religious experience, all three models have been covered by different schools of thought in the philosophy of religion. The first is what might be called *positive deism* (Leibniz), the second *negative deism* (Epicurus), and the third *projectionism* (Feuerbach). For the positive deist, God is causally active in the production of the emotions directed toward God, but only in a very indirect way. On this view, God does not enter into any personal relation with the individual, so emotion is not directly caused by God but indirectly by the sum of past events leading up to the present. For the negative deist, God exists but does not enter into any relations with believing subjects, even indirectly. For the projectionist, God does not exist, but belief in God can be explained as a projection of strong emotions into the unfathomable depths of the universe.

Attributional accounts of emotion have their merits both in the philosophy and the psychology of religion. Accordingly, we grant that there are

a number of special kinds of religious experience that are obvious candidates for such an analysis, such as experiences of being inspired by a divine source or conversion experiences in which the new believer feels "seized" by the transcendent force to which he or she is converted. From the perspective of the nonbeliever, the emotions associated with these kinds of experiences, however forceful and compelling for the believer, are simply misguided by presupposing a false premise.

We do not believe, however, that an attributional account of emotional experience along these lines is broad enough to adequately account for the breadth and depth of religious experience. What emerges from our interdisciplinary inquiry, engaging philosophical, psychological, and neuroscientific perspectives, is a richer and more complex picture. Religious experience can be characterized neither as pure feeling nor as pure thinking. Just as emotional experience emerges as a complex matter of both thinking and feeling, so does religious experience show itself as a matter of "thinking that feels like something." In this regard, our work here is an example of how rigorous interdisciplinary engagement can open up new meanings for both neuroscience and religious studies. While neuroscientists will gain fresh insight into the topics of cognition and emotion and broaden their field of acceptable topics of inquiry, religious-studies scholars will acquire new insight into the concept of religious experience.

Notes

1. It is important to note that, while James assimilated religious experience to an emotion (and, hence, claimed that the emotional component of religious experience was a "pure" feeling), those who have proposed an attributional account of religious experience do not intend to assimilate religious experience to an emotion as such.
2. Newberg and his colleagues focus on mystical versus religious experiences, even though they make reference to both in their interpretations and theorizations.
3. It is presupposed that localization is an important clue to the nature of neural process concerned. We are well aware of the fact that this presupposition can, if carried to an extreme structure-function localization interpretation, conflict with current understandings of how the human brain is functionally organized—i.e., in terms of complex, functionally interacting *systems*. Indeed, one ongoing tension in the analysis of neuroimaging data is that of describing brain activity in terms of both structure-function relations and functionally interacting networks (Horwitz et al. 1999; 2000).
4. It is important at this point to comment briefly on the degree to which our analysis renders religious experience a fully public (observable) or a fully private (not observable) matter. Because religious experience has a cognitive side, it cannot be, as F. D. E. Schleiermacher (1958) would have it, a radically private matter, inaccessible to investigation, or an aspect of human experience that has a special language and domain all its own. But, at the same time, while it is true that religious experience is a cognitively mediated phenomenon, this does not make it less private in the sense that it need be totally transparent to others. In this regard, religious experience as such is not a piece of behavior or simply a practice. It may be associated with certain practices, such as worship or prayer, but it is not identical with them. Religious experience, then, is not fully publicly observable—though ascription of this experience, as of any other experience, stands in need of "outward criteria" (Wittgenstein 1997). But neither is it totally inaccessible in the sense that it cannot be communicated or is devoid of a content that might be communicated.
5. Further data analysis (Azari et al. 2001b) provided information that supports the view that religious experience as such cannot be reduced to any specific brain region or collection of regions.

This interpretation relies on the presupposition that brain function is afforded by complex patterns of neural interconnectivity, known as a "connectionist" or "network" conception of brain activity.

6. At the same time, it adds to the ways in which we might be held responsible for the adequacy of our emotions.

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