A Trans-Species Definition of Religion

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Abstract

To advance knowledge of the evolution and prehistory of religions over the past two million years of human evolution, it would be useful to know whether other species, including great apes and extinct species of Australopithecines and *Homo* prior to *Homo sapiens sapiens*, exhibit behaviors that might be categorized as 'religious' or 'spiritual'. To determine this we need a precise and robust definition of religious behavior suitable for cross-species comparison. I develop a non-anthropocentric and non-anthropomorphic prototype definition of human religious behavior and then deconstruct it into a trans-species definition, which can be used to predict and identify religious behavior in other species.

Keywords

Horses would draw the forms of the gods like horses, and cattle like cattle, and they would make their bodies such as they each had themselves (Xenophanes 1964 [~540 BCE]: 169).

If human religion is a kind of anthropomorphism, the animal analogue is a kind of zoomorphism (Guthrie 1980: 193).

And now for something completely different (Monty Python 1971).

Introduction

Teilhard de Chardin (1959), Maringer (1960), and Eliade (1978) have made general speculations on possible religious behaviors of species prior to *Homo sapiens sapiens*. Since then archaeologists and paleoanthropologists have questioned the application of terms such as 'religion' or

'spirituality' to hominid species prior to *Homo sapiens sapiens*. Instead they now employ a defined category of 'symbolic behaviors' and find evidence of such behavior for species including *Homo helmei* (for a review of symbolic behaviors, see McBrearty and Brooks 2000); Neanderthals (for a review of mortuary ritual, see Pettitt 2002); *Homo erectus/heidelbergensis* (Carbonell et al. 2003; Harrod 2007) and *Homo habilis* (Harrod 1992). Harrod (2006, 2010), Donald (1991, 1993), and Mithen (1996) have produced overview syntheses of symbolic behavior covering the full span of human evolution. This leaves open the question of whether the symbolic behaviors of these earlier hominids might be categorized in some sense as either 'religious' or 'spiritual'.

Naturalists, ethologists, and primatologists have raised the question of whether species other than those in the lineage of human evolution have behaviors that might be categorized as 'religious' or 'spiritual'. Malan (1932) provided a series of reports, his own and others in the literature, observing that at sunrise and sunset not only birds, but baboons and monkeys, and even mongooses and meerkats, display behaviors, such as excited calls, motionless staring in silence, or outstretched arms with palms to sunrise, and he speculated that this probably reflected a 'universal reaction of living matter to solar influence' and appears to underlie a 'universal urge to worship', a 'sun cult'. Reports of elephant behaviors subsequent to the deaths of elephants and humans suggest that elephants may have death rituals (Meredith 2004). In her article on 'primate spirituality' in the *Encyclopedia of Religion and Nature*, Goodall suggests that chimpanzee rain dances, waterfall displays, and water-watching behaviors might be 'precursors of religious ritual' (2005: 1304).

Scholars of religion and theologians have debated the question without resolution. King (2007) suggests behaviors exhibited by Tai Forest chimpanzees at the death of a group member, Tina, might be religious. Fisher (2005: 304-305) accuses Goodall of 'anthropomorphism' and 'emotive description' and asserts that chimpanzees cannot have spirituality 'because for us, there is no meaning without language' and they only have 'intense emotions'. Howell argues that primate studies suggest that chimpanzees may have precursors of culture and spirituality that challenge theological notions of human uniqueness, but also suggests Goodall's observations are 'far from sufficient to demonstrate religion or even spirituality in chimpanzees' (2003: 185).

Bekoff observed:

> Currently, there are no detailed data to support or to refute intuitions about religious or spiritual experiences in animals. What we know about the cognitive and emotional capacities of chimpanzees and some other

animals suggests strongly that such spiritual experiences are possibilities, and we should also consider if individuals of non-primate species might also have spiritual experiences or perform religious or religion-resembling rituals (2007: 72-73).

The Need for a Trans-Species Definition of Religion

Independent of the question whether there is or is not enough data, I suggest it would not be possible to determine if chimpanzees or other species have spiritual experiences or perform religion-like rituals unless we develop a trans-species definition of religion which we can use to ascertain with some precision what degree of similarity or difference there might be between human religious behaviors and those of other species.

A major obstacle to such an attempt is that available definitions of religion, scholarly or otherwise, are inadequate for the task at hand. They contain explicit or implicit assumptions that are (a) anthropocentric, (b) anthropomorphic, (c) logocentric, or (d) hypothesize mental constructs of inner experience that cannot be tested scientifically because they are not observable.

Anthropocentrism in Religion Definitions

First, definitions of religion have an anthropocentric bias. This begins with the earliest scholars in the disciplines of anthropology and the study of religion at least 140 years ago and persists to the present day. Consider these examples: the 'minimum definition of Religion', which 'characterizes tribes [savages] very low in the scale of humanity' all the way up to 'high modern culture' of 'civilized men' (Tylor 1958 [1871]: 23); 'religion which distinguishes man from the animal' (Müller 1873: 17); 'experiences of individual men' (James 1958 [1902]: 42); 'man's life' (Van Gennep 1960 [1908]: 3); 'the intercourse of man and the human mind with God' (Wach 1958: 38, 41; Eliade 1959: 15); 'being human' (Eliade 1978: xiii); 'man of religious faith' (W.C. Smith 1978: 154); 'human beings' (Smart 1983: 3), 'human experiences' (J.Z. Smith 1982: xi); 'dimension of human experience engaged with sacred norms' characterized by 'ultimate meaning and transcendent power' (Chidester 1987: 4, and compare Taylor 2005); 'relentlessly human activity of thinking' (J.Z. Smith 2004: 32); 'human action' (Griffiths 2006: 68); 'a construct, a convention for talking about certain expressions of human life' (Saler 2008: 222); 'religiousness—human religious imagination—is unique to our species' (King 2008: 454); and 'distinctive and uniquely human attributes that constitute religious traditions…found in essentially all

human societies, but in no other animal societies' (Deacon and Cashman 2009: 490, 507). As these examples show, anthropocentrism persists regardless of whether a definition posits religion as *sui generis* or as something that can be explained by economic, political, or other external factors (Gardaz 2009: 339; McCutcheon 1997: 17, 25; Wach 1958: 14). It is even inherent in cognitive theory of religion (Boyer 1994, 2001, 2003, 2004; Boyer and Bergstrom 2008; Atran 2002).

Anthropomorphism in Religion Definitions
Second, definitions may refer to anthropomorphic projection, for example, 'animism' (Tylor 1958 [1871]: 23), which posits 'spirits' in natural phenomena with whom one may communicate as if they were human; 'the divine' (James 1958 [1902]: 42); 'God' (Van Gennep 1960 [1908]: 3); 'power, reality, being' (Eliade 1959: 13); 'superhuman beings' (Spiro 1966: 96, 98); 'supernatural forces outside or beyond nature' (Stark and Bainbridge 1996: 39). Guthrie (1980: 181, 187; 1993: 38, 177) makes anthropomorphic projection the cornerstone of his definition of religion. Religious beliefs are said to entail 'anthropomorphism' or 'systematic application of human-like [analogical] models to nonhuman, in addition to human, phenomena' and especially 'ambiguous phenomena, which must be interpreted'. Anthropomorphic definitions are at least 2500 years old; the first available example comes from the pre-Socratic philosopher Xenophanes. Whether or not this approach is employed to refute religious belief or to argue that it is a necessary dimension of religious beliefs (e.g., the Abrahamic traditions notion of man being created in the image of God), most definitions of religion harbor the unexamined assumption that religious behavior requires some sort of anthropomorphic projection.

Logocentric Definitions
Third, definitions may require features such as 'language' (Goodenough and Deacon 2003); 'semantic structure of ritual symbolism' (Turner 1969: 10); 'a system of symbols' (Smart 1983: 2); 'narrativity', 'symbolic interpretation', 'symbolic reasoning', 'symbolically ordered intelligence', 'meaning' (Fisher 2005: 305-308); 'representation', 'moral reasoning' (Fisher 2005: 303; Leahy 1994: 3-7); or 'prayer' (e.g., 'humans, the praying animal', Jenson 1999: 59-65). Although, in the course of identifying a prototypical definition of human religious behavior, I bracket such notions, I do not preclude the possibility that a specific application of a trans-species definition of religion might involve examining another species' more or less language-like communicative behaviors.

Scientific Non-Observables in Religion Definitions

Fourth, primatologists and other biologists tend to consider that any hypothesis asserting that species other than *Homo sapiens* have religious behaviors must involve ascertaining the mental constructs or inner experiences of another species, and as far as science is concerned such inner experiences are not empirically observable. On this basis all hypotheses are ruled out. In this regard, definitions that rely on inner, mental constructs such as beliefs, worldviews, or ideologies are inadequate for a trans-species definition of religion. This would seem to include definitions such as the 'minimum definition of Religion, the belief in Spiritual Beings' (Tylor 1958 [1871]: 23); 'system of beliefs and practices relative to sacred things' (Durkheim 1965 [1915]: 62); 'conceptions of a general order of existence' (Geertz 1973: 90); 'worldview' (Smart 1983: 2); references to beliefs as 'doctrinal' or 'imagistic' (Whitehouse 2002: 308-309), and even definitions that posit a 'human…cognizer of unobservable agents' (Dow 2007).

Toward a Trans-Species Definition

In order to answer the question whether non-human species have religious or religious like-behaviors, we need a definition that, if possible, eschews these four major biases. We do need a definition if we want to ascertain with some precision what degree of similarity or difference there might be between human religious behaviors and those of other species. As Brian K. Smith has suggested, 'we have definitions, hazy and inarticulate as they might be, for every object about which we know something… Let us, then, define our concept of definition as a tentative classification of a phenomenon which allows us to begin an analysis of the phenomenon so defined' (1989: 4-5). This accords with Jonathan Z. Smith's assertion that 'the rejection of classificatory interest is…a rejection of thought' (2000: 43). Clearly, this will not do (McCutcheon 2007). The challenge is thus how to design a non-anthropocentric, non-anthropomorphic cross-species definition, which is also open to examination of actual communicative behaviors and ritualizations performed by other species.

   This is not only a matter of human intellectual interest. As Derrida said in one of his last writings:

> I believe—and the stakes are becoming more and more urgent—that none of the conventionally accepted limits between the so-called human living being and the so-called animal one, none of the oppositions, none of the supposedly linear and indivisible boundaries, resist a rational deconstruction (2005: 151).

How to go about designing a trans-species definition of religious behavior? To see whether a definition already existed, I queried five of the main databases that contain scholarship on religion using a variety of search terms and found no articles discussing a definition of religion that would apply to non-humans. From this search it appears there has not yet been an attempt to design a trans-species definition of religion or apply one to other species. In this study I will develop such a definition and in a future study I will apply it to determine if chimpanzees engage in religious behaviors.

Method

My goal is to develop a non-anthropocentric trans-species definition of religious behavior that can serve as a prototype to predict, identify, and compare possible homologues of *Homo sapiens* religious behaviors in other species. To arrive at this goal it appears necessary to first develop a multi-component, prototypical definition for human religious behavior. Then, on this basis it appears possible to derive potential components of a trans-species definition of religion applicable across species. To reach the ultimate goal requires first reaching the intermediate goal. To reach the intermediate goal I employ at least six distinct procedures.

- To identify components of a prototypical definition of human religion, I choose to focus on the popular, everyday understanding of what religion is or is about for a particular culture. For reasons explained below, I select to examine what the anthropologist Benson Saler termed the 'Western folk category' of religion.
- One might ascertain key components of a Western folk prototype definition by doing a population-based survey, but I suggest a less costly procedure is to look at popular dictionaries for commonly accepted definitions. To identify the Western folk category of religion I look at two English language dictionaries.
- Using a semantic analysis procedure, I look up a definition, tease out distinctive features, and follow the trail of their semantic associations from one definition to the next.
- In the course of this semantic analysis, I apply a fourfold procedure for reducing or bracketing the four biases that I noted in the introduction. I delete terms or phrases that appear to be anthropocentric, anthropomorphic, logocentric, or contain non-observable mental constructs.
- This results in a list of components for a prototypical definition of human religious behavior. To assess whether the list is sufficiently comprehensive I compare it with other proposed lists.

- With respect to this list I ask if it is simply a collection of features or has some sort of internal coherence or logic. I indicate how the prototypical components reflect a logic of recombination. From this I infer that I have arrived at a comprehensive and coherent definition of recent *Homo sapiens sapiens* religious behavior.

Having used these procedures and arrived at the intermediate goal, I will suggest how to reduce the prototypical definition of human religious behavior into simpler elements, which have a greater likelihood of occurring in other species. This yields a trans-species definition of religion.

The Family Resemblance Approach

Following Benson Saler (1993, 2008), Bron Taylor in the framing of this journal's inquiry (2007a), Russell McCutcheon (1997, 2007), and an increasing number of others in anthropology and religious studies, I will employ the prototypical definition approach. In *Conceptualizing Religion*, Saler argues that we 'formally conceive of religion in terms of a pool of elements that more or less co-occur' and are 'instantiated' in particular religions. A classification can thus be 'polythetic', meaning that membership does not require possessing all the elements (1993: 219). Drawing on Wittgenstein, Saler suggests exemplars are 'linked by family resemblance categories', such as sacrifice, pilgrimage, belief in souls and so on (1993: 163-65). Saler adds the view taken from cognitive science that categories are subject to 'prototype effects'. In applying a prototypical definition, particular instantiations may 'more or less' belong to a class; categorization is graded or scalar (1993: 168). Saler acknowledges that although the term religion is a 'Western folk category' it is nonetheless useful in studying prototypical examples of religion in the West as well as other cultures (1993: 173). A prototypical, polythetic, family resemblance definition avoids essentialism (2008: 223). For the most part this approach seems appropriate. I agree that we should not begin with what J.Z. Smith (1998: 281-82) calls a scholarly 'second-order definition', but, following Saler's advice, derive a biased, first-order, 'native' or 'Western folk category' definition of human religious behavior that is polythetic and prototypical.

Distinguishing the development of a definition from its application, McCutcheon observes:

> If we follow Wittgenstein, then it seems to fall to those who develop and use classification systems—such as those who attempt to define religion—not only to have what a recent anthropologist, Benson Saler, has termed a 'prototypical definition', but also to be prepared to make judgment calls

> when a cultural artifact meets so few of their prototype's characteristics that it is questionable whether the artifact can productively be called a religion (McCutcheon 2007: n.p.).

Constructing a prototypical definition requires precisely identifying distinctive components; criteria for inclusion and exclusion are not 'fuzzy' or indefinitely expandable. Once a clear prototype definition has been developed, its application involves questions about the degree to which a phenomenon resembles a component of the definition. Some phenomena must definitely be excluded, while others definitely included. Borderline or 'fuzzy' cases will inevitably require the analyst's expert (and to some extent subjective) judgment, but this does not mean that the entire process is subjective. Nor does it imply that the attempt to identify components of religious behavior in another species opens the door to anthropomorphizing the subjectivity of other species.

Paradox of a Semiotic Method
Since my method involves semantic analysis of dictionary definitions, it may appear that I am assuming 'religion' is inherently language-like, symbolic, or textual, and if so one might object that it looks like my approach is logocentric and may involve a self-contradiction. To this objection I have two responses. First, I am doing an analysis of dictionary definitions to derive a human prototype definition of religion; only after this discovery do I derive a trans-species definition. Second, I do not foreclose the question of the extent to which other species have language or protolanguage capacity or have or do not have what ethologists term 'communicative behaviors' (e.g., call, gesture, postural display, and facial expression). Inquiry into whether a particular species has religious behaviors can be evaluated in relation to its overall communicative repertoire and any particular communicative behaviors that occur in association with hypothesized religious behaviors.

Results

To identify components of a prototypical definition of human religion, I choose to examine the 'Western folk category' of religion. To do this I conducted a semantic analysis of definitions from two popular English dictionaries, *Webster's New World Dictionary* (1964), hereafter [W] and *Microsoft Encarta World English Dictionary* (1999), hereafter [E]. Where etymologies seem to add relevant denotations, I take them from [W] and from *The American Heritage Dictionary of Indo-European Roots* (Watkins 2000), hereafter [CW]. This procedure may seem tedious, but there does not appear to be any other available cross-species definition of religion

nor a simpler method to arrive at one. I begin, therefore, with the definition of 'religion' and then follow its trail of semantic associations.

- Religion, [W] 1. belief in a divine or superhuman power or powers, to be obeyed and worshiped as the creator(s) and ruler(s) of the universe. 2. expression of this belief in conduct and ritual. [E] 1. people's beliefs and opinions concerning the existence, nature, and worship of a deity or deities, and divine involvement in the universe and human life. < Latin *religio*, obligation, bond, scruple; (in late Latin) religious (monastic) life, a way of life bound by religious vows < *religare*, to bind back; re-, back + *ligare*, to bind, bind together = 'to bind back together' [W].
  - o Divine, [E] 1. of or like God or a god. [CW] Latin *divinus* < *divus*, god, deity; I.E. **dyeu*, to shine, glow (and in many derivatives, 'sky, heaven, god'); god of the bright sky, head of the I.E. pantheon.

Immediately these definitions contain a host of terms to delete. 'Beliefs and opinions' are not observables so they must be removed. Since metaphysical theories of other species are not observable, I delete such sweeping mental constructs as 'universe' and 'existence'. I delete anthropomorphisms, including 'divine', 'god', 'deities', 'creator and ruler', and 'superhuman power' and also anthropocentric terms, such as 'people', 'nature', and 'human life'. Further I delete privileging oppositions such as 'natural versus supernatural' and 'human versus natural'.

   All that is left of the two previous definitions are the denotations of 'conduct, ritual, and obedience' and 'worship'. The terms 'conduct and obedience' appear reducible to 'ritual'.

- Ritual, [W] 1. having the nature of, or done as a rite or rites: as, ritual dances.
- Rite, [W] 1. a ceremonial or formal, solemn act, observance, or procedure in accordance with prescribed rule or custom, as in religious use. 2. any formal, customary observance or procedure: as, the *rites* of courtship. [E] customary to a community, especially a religious group. [CW] < L. *ritus,* rite, custom, usage. < I.E. **re(i)-,* to reason, count; Germanic *rat-,* to counsel, advise, riddle; suffixed in *arithmetic, logarithm*; rhyme.

The definition of ritual, with its exemplars of courtship, dance, and rhyme, appears to point to the etymological definiens 'to bind back together in communion' and a semantics of 'communion', 'social belonging', and the like.

- Communion, [W] 1. a sharing; possessing in common; participation. 2. a communing; sharing one's thoughts and emotions with

another or others; intimate converse. 3. an intimate spiritual relationship. 4. a group of people professing the same religious faith and practicing the same rites. < L. *communis*, common, shared by all or many, public < *com-*, with + *munus*, obligatory services, duties, etc.

This suggests a general definition of religion as a ritualization binding individuals together and back together in empathic intimacy and sharing, or communion, which has a quality of disciplined commitment, trust, and fidelity, and also some sort of witnessing by the larger community, which indirectly enhances the larger or 'public' group solidarity. This semantics points to the theatrical or performance aspect of religious behaviors. Yet since the denotation of binding back together in communion seems lacking in content, I suggest seeking content in a term sometimes considered equivalent to, or a substitute for, 'religion', that is, 'spirituality'.

- Spirituality, [W] 1. spiritual character, quality, or nature; opposed to sensuality, worldliness.
- Spiritual, [W] 1. of the spirit or the soul, often in a religious or moral aspect, as distinguished from the body. 2. of, from, or concerned with the intellect, or what is often thought of as the better or higher part of the mind. 3. of or consisting of spirit, not corporeal. [W] < Latin *spiritualis* < *spiritus*, breathing, breath, exhalation; a sigh, breath of life, inspiration; spirit, disposition; a high spirit, pride; < *spiro*, breathe, blow, draw breath, exhale, be alive, be inspired.
    - Animate, [W] tr. v. 1. give life to; bring to life. 2. make gay, energetic, or spirited. 3. inspire. 4. give motion to, put into action. adj. 1. living; having life. 2. lively, vigorous, spirited; < Latin *animare*, to make alive, fill with breath <*anima*, air, soul. Animacy, n.

The term 'spirituality' involves notions that are no less anthropocentric than 'religion', and, further, it is often entangled with denotations drawn from human ascetic traditions. If I delete non-observable mental constructions including spirit and matter, mind and body, and other-worldliness and this-worldliness, what remains may be considered spirituality's root meaning, 'breath, exhalation, sigh, breath of life, inspiration, aliveness and animacy'. Animacy implies deep embodiment of the breath of life as opposed to some sort of 'spirit floating in the air'. It means the source, genesis, and giving of life and intensification of the rhythmic feeling of being alive. It is a direct experience, one might say, of 'the animating spirit in this body', one's own, another's, all sentient

beings in this world. As in the etymology of 'divine', it is a sentience of everything being alive with a quality of light as scintillating, glowing, and shining with brightness. In the Western folk taxonomy, one speaks of 'religion' as well as of 'spirituality'. Combining them, 'religion' may be defined as *a ritualization binding-back-together of individuals in empathic intimacy with respect to experiences of aliveness and animacy, which may secondarily involve the witnessing of this by a collective social group.*

Following the trail of dictionary definitions I will now discuss six key components of a prototype definition of human religious behavior: worship, ceremonial observance, the holy, the numinous, the sacred, and sacrifice. The label for each component is arbitrarily taken from either the object of an emotive response or ritualized response to it.

Worship
When I deleted anthropocentrisms and non-observables from the dictionary definitions of 'religion', this pointed to a second denotation, 'worship'.

- Worship, [W] 1. a prayer, church service, or other rite showing reverence or devotion for a deity; religious homage or veneration. 2. extreme devotion; adoration; intense love or admiration of any kind.
    - Reverence, [E] 1. feelings of deep respect or devotion. [W] deep respect, love and awe; veneration < Latin *vereri*, to fear, feel awe.
        - Greek *eusebeia*, reverence toward the gods, piety, religion; *eusebés*, pious, religious, reverent; of things, holy, hallowed; *sebazomai*, to feel awe of, dread; *sebas*, reverential awe, a feeling of awe; generally, reverence, worship, honor, respect, awe; majestic, august, object inspiring awe; object of wonder, a wonder (Berry 1962).
    - Silent, [W] 1. making no vocal sound. 2. not talkative. 3. quiet, still, noiseless < L. *silere*, to be silent, still; subst. pl., the dead.
    - Devotion, [E] 1. the fact, quality, or state of being devoted. 2. piety, devoutness. 3. religious worship. 4. *pl.* prayers. 5. loyalty, faithfulness, deep affection < Latin *de-*, from + *vovere*, to vow.
    - Awe, [E] 1. mixture of wonder and dread. 2. ability to inspire dread.

- Dread, [E] 1. feel extremely frightened. 2. Be reluctant.
- Wonder, [W] 1. a person, thing or event that causes astonishment and admiration; prodigy; marvel. 2. the feeling of surprise, admiration, and awe aroused by something strange, unexpected, incredible, etc. v.i. 1. to be seized or filled with wonder. 2. to have doubt mingled with curiosity. v.t. to have doubt and curiosity about; want to know.
  - Wonderful, [E] 1. outstanding. 2. exceedingly pleasing. [CW] admire, marvel, miracle, mirror < Latin *mīrus*, wonderful, astonishing, extraordinary, admirable < I.E. *smei-* to laugh, smile.

'Awe' is characterized as involving both 'wonder and dread'. This implies a binary opposition between dread, connoting extreme fear, and wonder, connoting a feeling of curiosity and pleasure and a desire to know more with respect to something strange, unexpected, incredible, or extraordinary. It appears to be this double feature of wonder and fear that Otto (1950) highlighted as characteristic of human religious behavior with the terms the *mysterium tremendum et fascinans*.

But are not emotions like awe, intense love, or wonder non-observables or some sort of anthropomorphism? Should I not delete them from a prototype definition as well? With respect to such an objection I note that Charles Darwin (1998 [1889]) presented extensive evidence to support the thesis that emotion-behaviors in humans, primates, and other species evolve via natural selection and analogues occur across species. Emotions that Darwin explicitly identifies in other species include affection, pleasure, joy, pain, anger, fear, and the distinct emotions of terror and astonishment. They can therefore be included in a definition without risk of introducing anthropomorphism or non-observables, since ethologists and biologists observe animal emotions via physiological arousal, expressive behaviors of face and body, and display behaviors.

Worship, then, denotes reverence, devotion, homage, deep respect, veneration, adoration, admiration, or intense love and has as its object that which evokes a feeling of 'awe'. The Latin of reverence, *vereri,* indicates that its object evokes fear, or awe in the sense of fear or dread; similarly the Greek *eusebeia* (reverence, piety) refers to awe as fear or dread. The associated term 'piety' connotes devotion to parents who stand above a child, high, upright, august, and evoking awe as fear.

- Piety, [W] 1. devotion to religious duties and practices. 2. loyalty and devotion to parents, family, etc. 3. pious act, statement, etc. < L. *pietas* < *pius*, dutiful, godly, holy; patriotic; devoted, affectionate; in gen., honest, upright, kind.

In both act and object, 'worship' appears to involve a tension of opposites. On the one hand, the act of worship denotes turning toward in intense affiliative affection or love and devotion, adoring, holding in high regard and deep respect, or relying upon as a basis and support that which is in a position of higher or greater power, authority, or dominance. Yet it also denotes feeling reluctant or hesitant, turning away, or holding back in fearful beholding. The awe-filled object of worship has the quality of magnitude or vertical height, majesty, august-ness, splendor, breathtaking sublimity, or vastness, is felt as overwhelming and hence threatening; yet at the same time it retains the quality of beneficence as a source of sustenance, protection, and help. While not specifically denoted in the definitions, it seems appropriate to associate the ambivalent tendency of intense devotion and adoration comple-mented with holding back in fearful beholding along with maintaining silence, as if, in a sense, the subject of reverence were 'rendered speechless'. I suggest 'worship' as the first component for a prototype definition of human religious behavior.

Ceremony

Now, consider again the definition of a religious rite. This appears to involve a second component for a prototypical definition, one that belongs to the semantic territory of 'ceremony, observance, and solemn act'.

- Ceremony, [W] 1. a formal, usually solemn, act or set of formal acts established by custom or authority as proper to a special occasion, such as a wedding, religious rite, etc. < L. *caerimonia*, holiness, sanctity; holy awe, reverence; religious usage, sacred ceremony; [CW] But compare O.E. *cearu*, care; *cearig*, sorrowful; Germanic **karo*, lament, grief, care; Irish Gaelic *gairm*, shout, cry, call; Latin *garrire*, to chatter, garrulous; I.E. **gar-* to call, cry.
- Solemn, [W] 1. serious; grave; deeply earnest, arousing feelings of awe, very impressive.
- Observance, [E] 1. the execution of or compliance with laws, instructions, or customs. 2. custom, ritual, or ceremony, especially a religious one. 3. celebration of a religious occasion. 4. a religious order. 5. careful watching or close attention; [W] observation, the act, practice, or power of noticing; something noticed; the act of noting and recording facts and events; observe, take notice, comment, or remark on or upon, syn. celebrate, discern.

> o   Care, [W] 1. worry, anxiety. 2. close attention, watchfulness, heed. 3. a liking or regard for; inclination to do. 4. charge, protection; custody. 5. something to worry about, watch over, or attend to; synonyms: concern, solicitude, worry, anxiety [CW] < I.E. *gar-* to call, cry [see 'ceremony' above].

Like the definitions of rite and ritual, features of the definitions of ceremony and observance have circular references; 'procedure, instruction, custom, and formal acts' seem to be synonyms for 'conduct and ritual'. Its usage also appears to have some overlaps with reverence. Yet ceremony and observance do appear to add something distinctive for a second prototypical component. I suggest phrasing this component as 'solemn, grave, and serious observance, careful watching, close attention, taking note and remarking upon'. This remarking expresses itself as calling-out (outcry, crying out, shouting an announcement). Just as 'worship' seems to denote a tension of complementary opposites, so does 'ceremony'. It is a careful observing that has qualities both of attraction toward and cautious restraint in noticing, whether exploring visually or by touch. The object of such a stance is a 'special occasion', something that stands out as non-ordinary, even extraordinary because it is marvelous, strange, unexpected, surprising, novel, astonishing, incredible, uncanny, eerie, weird, a source of wonder, fascination, pleasure and curiosity, a desire to know more. I suggest that this is the other side of 'awe' as wonder rather than fear. Thus a second component of a prototype definition appears to be ceremonial observance as a response to wonder.

The Holy

Considering again the dictionary definition of ceremony, its etymology contains the terms 'holy' and 'sacred', and implies another notion, that of the 'numinous'. These I take as three more components for a prototype definition of human religious behavior.

- Holy, [W] 1. dedicated to religious use; belonging to or coming from God; consecrated; sacred. 2. spiritually perfect or pure; untainted by evil or sin; sinless; saintly. 3. deserving reverence or worship. [CW] < Anglo-Saxon *halig* (akin to German *heilig*) < base of AS. *hal*, sound, whole, happy, used as translation of L. *sacer*, *sanctus*, etc. in church use; < I.E. *kailo-*, whole, uninjured, of good omen, healthy, having a healing quality.

> o   Auspice, [E] 1. omen, sign, or token for the future, especially a happy or promising one < Latin *auspicium* < *auspex*, literally, one who looks at birds; a diviner who reads omens from the observed flight of birds

The dictionary definition of 'holy' suggests that its distinctive denotation is a quality of wholeness that provides healing and auspiciousness ('good omen', what bodes well for the future, a sign that promises someone will fare well or something will advent positively), or taken together, that which is auspicious for a healing wholeness. While privileging the 'pure', this definition qua 'wholeness' implies a complementarity of contraries: 'pure and impure'; 'healthy, uninjured and unhealthy, diseased, ill, injured'; a dread awe before that which offers both beneficence and threat of injury or taint (sin, evil) or overpowering grandeur and the imperfectness of an infant or one who has a disability. The distinctive response to the holy appears not to be reverence, but careful observation, as when one solemnly observes omens or pays careful attention to something that is arriving with the paradoxical power of healing and injuring. I suggest that careful observation of the holy is a third component for a prototype definition.

The Numinous

By association, the holy leads to a fourth distinctive component for a definition of human religious behavior: the numinous.

- Numinous, [E] 1. having a mysterious power that suggests the presence of a god or spirit < L. *numen*, a nod, nodding, as an expression of will, command, consent; of a deity, divine will, divine command; hence, in gen., divine majesty, divinity, deity; [CW] Latin *nuere,* to nod; Greek *neuein*, to nod; Sanskrit *navate,* move, turn; M.L.G. *nucke*, sudden push < I.E. **neu-,* to nod.
  - o   Compare [W] 'mystery', something unexplained, unknown, or kept secret: as the mystery of life. < L. *mysterium*; Greek *mysterion*, secret worship of a deity, secret thing.

Again, I would delete 'god, deity', 'divine will or command', and 'spirit' as connoting some sort of anthropomorphic projection; what remains are two denotations, 'mystery' and 'nod, sudden push'. The numinous involves 'a mysterious power', a presence that is hidden or secret, shrouded in silence or, so to speak, absent or yet to arrive. At the same time, it presents itself as a nodding between individuals in intimate communion with respect to mutual volition and mutual consent to a

mutually willed action ('command'), which arises as a sudden push, movement, or turning. The response to the numinous appears similar to the response during worship, namely reverence, a turning toward, with a connotation of affiliative love and reliance upon as base and support, except that in the case of the numinous, it is not reliance on some dread higher power, but rather a turning toward the wondrous. In relation to the numinous, that which evokes wonder is something that shows itself as it hides itself in its own uncanny movement. The experience of the numinous is of something that is attractive with promise yet withdrawing, reliable yet uncontrollable, teasing one forward in fascination, triggering a sudden push, pushing up against, a pulse, vibrantly beating, and a leap, an advance. The response to the numinous appears to be a fourth component for a prototype definition.

The Sacred

The definition of ceremony mentioned another term, the 'sacred', associated with the term 'sacrifice'. These I suggest are a fifth and sixth prototypical component of a definition of human religious behavior.

- Sacred, [W] 1. consecrated to or belonging to a god or deity; holy. 2. of a religion or religious rites and practices: as a sacred song; opposed to profane, secular. 3. regarded with the same respect and reverence accorded holy things; venerated, hallowed. 4. set apart for, and dedicated to some person, place, purpose, sentiment, etc., rather than to a god; as, sacred to his memory. < L. *sacrare* < *sacer*, holy, sacred, dedicated, consecrated; in bad sense, accursed, devoted to destruction, horrible; antonym of accursed, blessed, salvific, salvage.

Again, deleting anthropomorphic, logocentric, and non-observable mental constructs, including 'god', 'deity', 'purpose', 'song', 'sentiment', and 'his memory', as well as references to features associated with other prototypical components, this dictionary definition of the 'sacred' appears to add another complementary opposition, the distinction between that which is 'set apart' as 'accursed, devoted to destruction' and that which is 'set apart' as 'blessed, devoted to creation, salvific, salvage'.

While the dictionary definition indicates that this complementary creative and destructive power is to be accorded respect and reverence, I suggest that the response of 'setting apart' is more paradoxical than this. The act of setting apart involves a detachment from reverence. Sacred things are placed in an area of detachment and the act of detachment operates on reverence itself. Sacred things, which are icons of veneration,

are, along with reverence itself, placed in brackets, so to speak. Sacred things seem to possess both subjective and objective qualities or powers. The human response to these set apart or sacred things is also ritualized in a paradoxical way; it involves both not touching (proscription, taboo) and touching in a non-ordinary way (prescription). That which possesses sacrality is alive and animate and appears to have the quality of being in its own act of reverence. In a sense, the function of sacrilization operates in a doubly reflexive mode; prescription or proscription with respect to a sacred power seems to yield the co-arising of the self's reverencing of the other and the other's reverencing of self (objective and subjective genitive) as well as all life forms in the reverencing of life.

The Sacrifice
Sacrifice should not be confused with the sacred. Sacrifice instead provides the sixth distinctive dimension of my prototype.

- Sacrifice, [W] 1. offer the life of a person, animal, or object that is precious, as propitiation or homage to a deity. 2. give up, destroy, permit injury to, or forego some valued thing for the sake of something of greater value or having a more pressing claim < Latin *sacrificium,* from *sacr-, sacer* holy, sacred + *facere* to make, to do < [CW] I.E. **dhē-* to do, make.

After deleting 'person' and 'deity', 'sacrifice' appears to involve a response to opposite acts, in this case, two kinds of giving—of death and of life. A life that is nurtured and sustained is offered to injury or death and paradoxically death itself is given, in a sense offered, to life. That which has the most pressing claim, life, is offered up to death for the sake of something having an even more pressing claim, a greater preciousness, valuation, or claiming of life. At one and the same time, the response of sacrifice requires both active offering and an observant witnessing to that which is offered up in death to life and in life to death.

Definition of Human Religion and its Six Components
Having reviewed Western (English) dictionary definitions of religion and its associated denotations and connotations, and deleted any that seemed to involve some sort of anthropomorphic projection, anthropocentrism, logocentrism, or non-observable subjective mental constructs, I have arrived at an overall definition of religion/spirituality:

- Religion/Spirituality denotes a ritualization that binds individuals together or back together in empathic intimacy with respect to experiences of aliveness and animacy, which may secondarily involve the witnessing of this by a collective social group.

I also have arrived at six components of human religious behavior.

- Worship involves reverencing, showing deep respect or intense love for that which evokes dread awe in its magnitude and beneficence, which may involve silence.
- Ceremony involves carefully observing, in a solemnity which may involve announcement, that which evokes wonder in its surprising, astonishing, extraordinary, special, and fascinating appearance.
- The numinous denotes reverencing in mutual consent and mutually willed action that which evokes wonder at uncanny movement, push, or leaping advance.
- Holiness denotes to carefully observe in solemnity that which evokes dread awe in its potentiality to make whole, both in health and injury, purity and impurity, grandeur and imperfection.
- The sacred involves holding in set-apartness the complementary powers of creating (blessing) and destroying (cursing), which act upon reverence for self, other and all life forms.
- Sacrifice denotes to engage life as an offering and witnessing to that which gives life and gives death.

These brief definitions are the basic results of my semantic analysis to define a polythetic prototypical definition of human religious behavior. It appears from this analysis that each component involves three aspects. (1) There is sentience of an object or event. (2) This evokes an emotional response, which, in turn, (3) triggers a ritualized performance with respect to the emotion and its object.

One might ask if the result is really a polythetic prototype definition. I have attempted to use the method advocated by Saler, Taylor, and McCutcheon, but I seem to have arrived at something more complex. The definition is polythetic with respect to the six components; a specific cultural instantiation would appear classifiable as 'religious' if it had at least one of the components. At the same time, the components are embedded in the overall definition of religion as ritualization of empathic intimacy in relation to animacy, and this criterion appears necessary for any and all attempts to classify behaviors as religious. For instance, the simple experience of astonishment or terror in itself is not necessarily religious, but these emotions might be so classified if they are part of a ritualization of empathic intimacy with respect to animacy. Thus the definition appears to require that phenomena demonstrate at least one of the six components *and* the ritualization. In other words, in one dimension, the definition is a polythetic group of components (where the phenomenon under observation can demonstrate one, several or all of

the components and still qualify as religious), but in its other dimension (ritualization of empathic intimacy) the definition seems to follow a more traditional pattern, requiring that a phenomenon demonstrate certain minimal characteristics to qualify as religious. My definition thus adopts a modified version of the family resemblance strategy. In doing so it provides a way to both exclude some behaviors, so that not just 'anything goes', while also allowing some flexibility in identifying the specifically religious dimensions of behaviors among non-humans.

Discussion

Comprehensiveness of the Definition of Human Religious Behavior
In my next methodological step, I ask whether the six components are sufficiently comprehensive in scope. To assess this, consider how Saler (2008) and Dow (2007, citing Wallace 1966) attempted to define religious behavior by listing prototypical features. Their lists were based on examples of religion from archaic and recent cultures around the world. Their two lists share eleven features in common:

- Supernatural or superhuman agents who inspire, intervene, or make a difference in human lives.
- Incorporative rituals sustaining social relations and solidarity with respect to agents.
- Prayer or other instrumentalities to address or deliver messages to supernatural, nonhuman agents.
- Belief in code sanctioned by agents; sacred canon, oral, or written, including corpus of central narratives, myths, or moral rules.
- Avoiding proscriptive (taboo) and performing prescriptive actions sanctioned by agents.
- Sacred/profane dichotomy; (mana): touching things; transfer of supernatural power through contact; including Frazer's (1959 [1900]) concept of contagious magic.
- Prophylactic or corrective rituals to constrain agents; simulation: imitating things, similar to Frazer's (1959 [1900]) concept of sympathetic magic.
- Sacrifice, immolations, offerings, and fees; feasts: eating and drinking with respect to agents.
- Physiological techniques to put people in states of sensitivity to agents; physiological exercise: physical manipulation of psychological state.
- Song, dance, and music assigned sacred significance.
- Teaching, exhortation or encouraging others to adopt, sustain, and pass on religious practices.

Deleting from this list obvious anthropocentric, anthropomorphic, logocentric and non-observable features, such as 'human', 'belief', 'prayer', 'supernatural or superhuman agents', and references to language performance, yields four features:

- Cultural transmission of rituals.
- Rituals sustain social relations and solidarity.
- Sacrifice, offerings, and fees; feasts: eating and drinking with respect to agents.
- Sacred/profane dichotomy; transfer sacred power through contact or through simulating or imitating things in prophylactic or corrective rituals to constrain agents; avoiding proscriptive and performing prescriptive actions sanctioned by agents.

Each of the features in this short list is also found in my six-component definition. This suggests that my prototype definition is sufficiently comprehensive. These lists do not include the emotions of dread and wonder. I suggest this is because my definition relies on observable emotional responses rather than on non-observable beliefs.

Formal Coherence of the Definition of Human Religious Behavior
My final step in search of a polythetic, prototypical definition of human religious behavior is to ask whether the six components of my prototype are merely an ad hoc set, like a shopping list, or whether they have some sort of underlying 'logic' that gives its components some sort of internal coherence. Looking again at the proposed definition, the semantic analysis revealed that each component appears to have the form of a ritualized performance enacted in response to an object and the emotion evoked by that object. Further, the emotions, namely wonder and dread, and the ritualized behaviors, such as careful observation and reverence, appear to undergo a series of recombinations from one component to another. For example, note how *worship*—defined as reverence with respect to dread—reappears in the *numinous* component, in which reverence functions with respect to wonder. Similarly, certain elements of *ceremony*, which is defined as careful observance with respect to wonder, reappear in the *holy*, in which careful observance functions with respect to dread. Further, the holy component links to the worship component through dread, and the numinous to ceremony through wonder. These elements also get rearranged in the functions of sacrifice and sacrilization (making sacred). This suggests that the six-component prototype is more than an ad hoc list; the components appear governed by an

internal logic of recombinations. Thus, the six component prototype definition appears to be both comprehensive and internally rule-governed and coherent.

Reducing the Human Definition to Derive a Trans-Species Definition

We now come to the last goal of this paper, designing a precise trans-species definition of religion. While this six-component prototype definition seems applicable to the religious behaviors of recent *Homo sapiens sapiens*, I doubt anyone would think it applicable to a non-human species. Something simpler seems required for a trans-species definition. I suggest deleting the two components that require the most sophisticated intellectual behavior—two components often viewed as the epitome of human religious behavior—namely 'sacred/profane' (Durkheim 1965 [1915]: 62; Eliade 1959; Smith 2004: 101; Flood 2006: 52) and 'sacrifice' (Bataille 1992 [1945]: 43; Derrida 2001; J.Z. Smith 2004: 145). This leaves worship, ceremony, the numinous, and the holy. I suggest further simplifying by reducing these functions back to their constituent elements. This yields five basic elements for a trans-species definition of religious behaviors, in which to act religiously entails, at minimum:

- communing in empathic intimacy with respect to experiences of aliveness and animacy.

In addition, one or more of the following behaviors must be in evidence:

- Revering, devoting oneself to, or showing deep respect or intense love, all of which may involve silence.
- Observing carefully, or remarking upon, which may involve calling-out or announcement.
- Experiencing dread (terror, astonishment) before that which overwhelms the observer in its magnitude and beneficence, grandeur and imperfectness.
- Experiencing wonder (fascination, curiosity, a desire to know more) with respect to that which is miraculous, non-ordinary, surprising, astonishing, extraordinary, non-ordinary, and special.

All or some of the behaviors in this trans-species definition could potentially be observed in non-human animals or ancestral hominids. They could occur singly or in complex combinations and sequences. In retaining key elements from the prototypical folk definition of human religion, I have therefore preserved elemental features of the meaning of the word 'religion' as much as possible, while showing how it can be extended and applied beyond the human realm.

Conclusion

I have derived, via a Western (English) folk taxonomy, a non-anthropo-centric six-component prototypical definition of human religious behavior and I have indicated a way to dissolve it into its basic elements, which constitute a trans-species definition of religious behavior. This trans-species definition has five basic elements: *reverence* (intense love, deep respect, which may involve silence), *careful observance* (which may involve a remark or calling-out announcement), the emotions of *terror* and *wonder*, and *communion in empathic intimacy with respect to animacy*. With these criteria in place, this definition can provide heuristic criteria and increased precision for any attempt to predict or determine if other species, including great apes and extinct species of Australopithecines and *Homo* prior to *Homo sapiens sapiens*, have engaged in religious-resembling behaviors.

The proposed definition is a first attempt. Its adequacy can be tested in actual applications examining homologues for religious behavior in other species. It may be that the complex motifs of the human prototype, such as worship, ceremony, the numinous, and the holy, are present among species other than *Homo sapiens,* or, on the other hand, that only one or more of the simpler basic elements are present. To what degree or in what way another species may exhibit one or more of the features of non-anthropocentric reverence through silence, careful observation with announcement, dread, wonder, or communion, will be determined in future research.

My proposed definition has implications for how religion is defined in religious studies and theology, anthropology of religion, neuroscience, prehistory of religions, cognitive archaeology, and evolution of mind and symbol. For religious studies and theology I note that components of my prototype definition of human religious behavior include emotional or feeling-toned values, and in particular those pertaining to the binary opposition terror and wonder. This accords with attempts to define human religious behavior in terms of awe and wonder, such as Taylor (2007b), Fuller (2007), and Otto (1950), as well as redefinitions of the term 'spirituality' that focus on similar emotions, such as Helminiak (2006), Taylor (2005: ix), and Hay and Socha (2005).

For the prehistory of religions, cognitive archaeology, and evolution studies, this trans-species definition of religion can be applied to species other than *Homo sapiens sapiens* to determine in a rigorous manner if they exhibit religious behaviors. If chimpanzees or other primates can be shown to have religious behaviors, this will provide support for

hypotheses that ancestral hominid species engaged in religious behaviors, as well as a basis for predicting features of those behaviors.

Finally, my overall definition of religion as a ritualization binding-back-together with respect to 'animacy' highlights the important role of this 'sense of animacy' in the evolution of religion. Each of the six components and four basic elements of religious behavior may be said to reflect an aspect of animacy. The concept of animacy and the closely related concept of 'biomotion' are an important area of research in neuroscience (e.g., Blakemore et al. 2003; Mar et al. 2007; Martin and Weisberg 2003; Peuskens et al. 2005; Pyles et al. 2007; Schultz et al. 2005; Wheatley, Milleville, and Martin 2007). Thus the concept of animacy (animated aliveness) appears to offer a non-reductionist alternative to traditional anthropomorphic terms, such as 'spirit', 'soul', and 'animism', which can be used for research exploring the possibility of religious behaviors among non-human species.

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