Science Looks at Spirituality

SPIRITUALITY AS A NATURAL PHENOMENON: BRINGING BIOLOGICAL AND PSYCHOLOGICAL PERSPECTIVES TOGETHER

by David Hay and Pawel M. Socha

Abstract. Working in Britain and in Poland, the authors independently arrived at an interpretation of spirituality as a natural phenomenon. From the point of view of the British author, spirituality is based on a biological predisposition that has been selected for in the process of evolution because it has survival value. In several important ways this approach is in harmony with the psychological perspective of the Polish author that sees spirituality as a socioculturally structured and determined attempt to cope with the existential human situation. Thus interpreted, spirituality is a human universal appearing in many secular as well as religious forms, although its most typical manifestations have been in religious experience. In this essay we discuss research data in support of this theoretical point of view and highlight some of the issues in bringing the two theoretical perspectives together.

Keywords: biological evolution; psychology of religion; relational consciousness; religious experience; social construction; social evolution; spiritual awareness; spirituality.

This essay arose from our reflections on a paradox. On the one hand, institutional religion is in serious difficulty in many parts of Western Europe. Taking the United Kingdom as an example for which reasonably accurate statistics are available, survey research by Peter Brierley (1999)

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indicates that between 1989 and 1998 there was a drop in weekly church attendance from 4.74 million to 3.71 million people. That is a decline of around 20 percent in a single decade. Brierley's figures also suggest that not much more than 7 percent of the national population will be in church on an average Sunday. Furthermore, those attending church tend to be the middle-aged and elderly. The response of some sociologists of religion to this and similar data is clear from the titles of recent publications such as Callum G. Brown's *The Death of Christian Britain* (2001) and Steve Bruce's *God is Dead* (2002).

On the other hand, a very different picture emerges when we examine the changing figures for report of religious/spiritual (r/s) experience[1] over approximately the same period. In 1987 David Hay and Gordon Heald published the results of a national survey of claims to such experience in the United Kingdom, showing that 48 percent of the sample testified to it as a factor in their personal lives. In the year 2000 Hay and Kate Hunt, aware of Brierley's figures on declining church attendance, wondered whether there had been a similar fall in the frequency of r/s experience. They inserted a parallel set of questions into a BBC-sponsored poll of the beliefs and values of British adults at the dawn of the millennium.[2] The results showed that more than 76 percent of the sample felt they had had experience of this kind (Hay and Hunt 2000). Between 1987 and 2000 there had been a rise of almost 60 percent in the numbers of people admitting to such experience.

The sharp rise in report of r/s experience in a society that is secularizing very rapidly is spectacular and paradoxical (Hay 2003). It suggests that there is a growing propensity for people to split apart two concepts (spirituality and religion) that have traditionally been thought of in Western culture as inseparable. This separation seems to be associated with increasing social permission to admit to such experience, at least when it is labeled "spiritual." There is some evidence that Britain is not unique in this respect. Yves Lambert (2004), reviewing recent data gathered by the *European Study of Values* across nine European nations, notes an increasing tendency for young people who claim that they are "not religious" nevertheless to add that they are "spiritual."

Similar changes may be occurring beyond the confines of Europe. David Tacey (2003) reports on a number of small-scale studies in Australia that indicate a pattern almost identical to the British findings. Even in the United States, often picked out as an example of a country that challenges the classical theory that modernity is inevitably accompanied by secularization (Casanova 1994), there appears to be a growing trend to make a distinction between religion and spirituality (Zinnbauer et al. 1997). Publications such as the volume edited by Peter H. Van Ness, *Spirituality and the Secular Quest* (1996), and Benjamin B. Page's anthology *Marxism and Spirituality* (1993) offer further evidence of the reality of this division.[3]

It has to be acknowledged that the conceptual underpinning of the term *spirituality* is notoriously fuzzy (Zinnbauer et al. 1997). With so many ambiguities, care is necessary in the interpretation of the data. Nevertheless, the figures are sufficiently consistent to encourage questions about the puzzles they present. The current debate among theologians about the relationship of spiritual experience to formal religion (Schneiders 2000; Kelly 2002) is an obvious example. An associated issue is the problem of the nature of the link between spiritual experience and religious experience. Some influential interpretations of religious experience (Lindbeck 1984; Proudfoot 1985) stress its exclusively socially constructed nature. But, in view of the British data that show a relative independence of the population reporting religious experience from the population actively belonging to a religious institution, it might equally be conjectured that such experience is not satisfactorily accounted for in terms of social construction alone. Might it have a more primordial source, based on our biological makeup? In that case perhaps the term *religious experience* is too restrictive a label for a phenomenon more appropriately referred to as *spiritual experience*, within which religious experience would then form a subcategory? This is a question to which we shall repeatedly return.

To summarize, is this general range of experience to be accounted for without remainder in terms of social construction? Or do the data more plausibly suggest the existence of a natural awareness, perhaps associated with a specific site (or sites) in the nervous system, as proposed by some neurophysiologists (Ramachandran 1998; Newberg, d'Aquili, and Rause 2001; Albright and Ashbrook 2001; Joseph 2003)?

Through the circumstance that the British author has for some years been a visiting professor in a Polish university, the two writers of this paper discovered that we were thinking along somewhat similar lines on the question of the nature of spirituality. What follows is the substance of our joint reflections, but we emphasize that as, respectively, a British zoologist and a Polish psychologist, we come at this question from different intellectual and cultural backgrounds. Although we both have read and commented on the entire text of this article, we have marked those sections that are predominantly the work of one or the other of us (DH or PMS).

A Biological Perspective on Spiritual or Religious Experience

[DH] The research tradition described in this section grew out of a Gifford Lectures series given at the University of Aberdeen by the Oxford zoologist Alister Hardy during the 1960s (Hardy 1965; 1966). An enthusiastic Darwinian, Hardy used the lectures to construct an account of the origin of religion primarily in terms of natural selection.[4] The main thrust of his argument relates to the evolution of what he at the time called "religious

experience," defined operationally by him as "being aware of or influenced by a presence or a power, whether called God or not, that is different from one's everyday self." He was not explicit about the point in evolutionary history at which this awareness emerged, but he assumed that it was not confined to *Homo sapiens*.

David M. Wulff (1997) notes that there have been sporadic scientific speculations about the existence of religious awareness in other animals since shortly after the publication of *The Origin of Species* (cf. Hartmann 1882). Thus, field reports of communal dancing in apes have been interpreted as possible religious ritual (Köhler 1921). J. Malan (1932) gave graphic descriptions of apparently religious behavior in baboons in response to the rising and setting of the sun. In his book *The Biology of God* (1975) Hardy himself speculated about the religious quality of the devotional behavior of dogs. These conjectures may be thought tendentious, but there is rather stronger evidence for the existence of r/s experience in *Homo sapiens neanderthalensis*. One vivid example is the flower-laden Neanderthal grave discovered in the Shanidar cave in Northern Iraq (Solecki 1971; Leroi-Gourhan 1975), implying some sense of transcendence. In spite of subsequent critiques (Shreeve 1995), such finds suggest that r/s awareness in premodern humans may not easily be dismissed.

Hardy argued that the evolutionary process by which r/s awareness became selected was behavioral, that is, it operated through acts of conscious choice. The interaction of biological and cultural evolution is very widely accepted today (Durham 1991). At the time that he gave his lectures he had to make this claim carefully, because to the inattentive ear it sounded rather like a version of the discredited Lamarckism. Hardy suggested that certain forerunners of *Homo sapiens* "consciously chose" to attend to such awareness because it gave them additional strength in the struggle for existence. One might say that r/s experience functions by enabling the individual to cope with reality as it is (Pargament 1997). Hence, subsequent random mutations that enhanced this kind of awareness would be selected for because they gave an advantage in the process of natural selection.

Much of the a priori evidence for the plausibility of Hardy's view came from social anthropology. Anthropologists often have taken an interest in religion as a social institution (Murdock 1945), but Hardy was much more interested in the survival-enhancing *experience*, which he took to underlie those institutions. Thus he turned to those few anthropologists who took experience seriously. He quoted Robert R. Marrett approvingly:

> It is the common experience of man that he can draw on a power that makes for, and in its most typical forms wills, righteousness, the sole condition being that a certain fear, a certain shyness and humility, accompany the effort so to do. That such a universal belief exists amongst all mankind, and that it is no less universally helpful in the highest degree, is the abiding impression left on my mind by the study of religion in its historico-scientific aspect. (Marrett 1920, 166)

Hardy thought that Emile Durkheim, often seen as a reductionist in religious matters, expressed a related point in *The Elementary Forms of the Religious Life:* "The believer who has communicated with his God is not merely a man who sees new truths of which the unbeliever is ignorant; he is a man who is *stronger*. He feels within him more force, either to endure the trials of existence, or to conquer them" (Durkheim 1915, 416).

Hardy drew heavily upon what Durkheim had to say about effervescence, but he did not take the next step of saying that r/s experience is "nothing but" effervescence. However, he did propose to look at the human side of the experience of transcendence, and here a family affinity can be detected between his ideas and those of a lengthy series of previous students of specifically religious experience including Friedrich Schleiermacher (1830), Edwin Starbuck (1899), William James (1902), Ernst Troeltsch ([1906] 1977), Rudolf Otto (1950), and Joachim Wach (1958). It is notable that without exception these scholars come from a Protestant background, primarily pietistic or Puritan in form. One might be inclined to suspect that a particular form of Christian theology shapes their cultural expectations with regard to the nature of the human experience of transcendence.

No doubt this is to a degree true, but social construction does not operate in a physical vacuum; it has to have a substrate on which to work. Within Christianity there are many parallels outside Protestantism that imply such a biological underpinning. The German Benedictine Anselm Stolz (1938) detected (and criticized) what he called a "psychologising" tendency in the Catholic mystical theology from the same period, for example in the highly influential writings of the Jesuits Auguste Poulain (1912) and Joseph Maréchal (1927). Stolz believed that this stance could be traced back to the writings of Saint Teresa of Avila in the sixteenth century. More recently, Grace Jantzen's (1995) discussion of the affective mysticism of Saint Bernard suggests that an incipient naturalism can be found still further back, in the twelfth century. The phenomenon of r/s experience is thus not explained exhaustively as a construction of Protestant culture.

As we have seen, Hardy's conjecture is much more ambitious, for he wants to say that r/s experience is a human universal. The sources he drew on in his second series of Gifford lectures were very wide ranging. Apart from anthropologists like Durkheim and Marrett (along with Bronislaw Malinowski, Godfrey Lienhardt, and E.E. Evans-Pritchard) he also included what he called "naturalists of religious experience," meaning specifically William James, Starbuck, and James Leuba. Among investigators of the numinous, he naturally began with Rudolf Otto and added William Wordsworth, Samuel Taylor Coleridge, Ralph Waldo Emerson, Richard Jefferies, psychologist Cyril Burt, and novelist Marghanita Laski. He also referred to the work of students of animal behavior, especially Konrad Lorenz and, more controversially, the reflections of H. H. Price and C. D. Broad on

parapsychology.[5] Though he always talked of religious experience, his selection of interested scholars included agnostics and some who were positively atheistic (such as Leuba, Jefferies, and Laski), which underlined his belief that he was investigating a natural phenomenon and hence one that existed beyond the world of formal religion.

There has been a subsequent program of empirical research exploring the ideas of Hardy (partly summarized in Hay 1994) and parallel work in other centers (Glock and Stark 1965; Greeley 1975; Wuthnow 1976; Morgan 1983; Gallup 1985; Acquaviva 1991). In general the findings suggest that Hardy's hypothesis is more resilient to empirical testing than the currently more dominant naturalistic hypotheses of Karl Marx, Sigmund Freud, and, according to some interpretations, Durkheim. The work of these three cultural icons has been the subject of very extensive investigation, but the great majority of such studies look at religion as a social phenomenon, for example investigating how social and psychological variables relate to institutional membership or the holding of particular religious beliefs.

Hardy's primary interest was not in this area. He was specifically concerned with experience, and here the research is neither as extensive nor as well known. Therefore we briefly summarize some of the salient findings:

- Persons belonging to the poorest and most oppressed sectors of society, at least in the Western populations so far studied (see Hay 1994), are less likely than others to report having r/s experience. This is contrary to what might be predicted from a straightforward interpretation of Marx's ([1844] 1972) hypothesis that religious experience is projective in the Feuerbachian sense and is an opiate used to cope with the pains endured by the poor in unjust societies. We do not deny the validity of Marx's claim that religious forms of fantasizing can be used as a defense, but the data we present suggest that his account of religious experience is incomplete and overinfluenced by prior personal commitments. From Hardy's perspective the findings can reasonably be equated with the idea that poverty and oppression damage not only physical health and happiness but also people's natural spiritual sensitivity.
- The traditional psychoanalytic assumption is that r/s experience is a symptom of neurosis (Freud [1928] 1961) or temporary psychosis (Reik 1941). This leads to the prediction that in a large sample of the general population, those reporting such experience will score less well than others on a measure of psychological well-being, for example Bradburn's Balanced Affect Scale (Bradburn 1969). Research by Andrew M. Greeley (1975) and Hay and Ann Morisy (1978) provided national sample data for the United States and Britain respectively, showing that the reverse is true: persons claiming r/s experience

on average score more highly than others on the Bradburn scale. This is what would be expected if Hardy's hypothesis were correct. Unfortunately the waters have been muddied by Freud's frequently repeated claim (for example in *The Future of an Illusion*, 1928) that persons who suffer from the universal neurosis (religion) are less likely than others to exhibit individual neuroses. But this is a perverse argument. It implies that those reporting r/s experience, who in every other way are personally and socially competent, are in fact neurotics suffering from a temporary psychosis. To maintain cogency, the argument depends on a prior belief that such experience is at the very least illusory, and this is a disputed point that must be argued philosophically. (Again, we do not deny the cogency of Freud's argument as it applies to certain forms of religious belief and behavior [cf. Godin 1985], particularly its authoritarian forms [Adorno et al. 1950]).

- Durkheim's account of religious experience as the "effervescence" that occurs in large religious gatherings leads to the prediction that such experience will be less likely to take place when a person is alone. Research by Hay and Morisy (1985) on a random sample of adults in the city of Nottingham revealed that approximately 70 percent of reported experience occurred when the person was alone. This suggests that, at the very least, Durkheim's conjecture is an incomplete account of such experience.[6] On the other hand, the data are not incompatible with Hardy's hypothesis.

A Perspective on Spirituality that Goes Beyond Religion

[DH] The data just summarized support the view that r/s experience cannot simply be dismissed as symptomatic of social or personal pathology or as mistaken attribution. Let us suppose for heuristic purposes that Hardy's conjecture is correct. In that case the subject of our investigation is a realm of human awareness that is universal in the human species and not plausibly explained as entirely due to religious attribution, as suggested by Wayne Proudfoot (1985). On this supposition, we can now drop the clumsy term *r/s experience* and refer to this general area of consciousness as *spiritual awareness*, of which religious experience is an important subset. If Proudfoot's attribution theory of religious experience has plausibility, it is in relation to the way in which this latter subset obtains the label "religious." One would have to add, of course, that other, "secular," attributions are also socially constructed.

Apart from Proudfoot there are other social-constructionist critics of the so-called common-core approach, of which Hardy's hypothesis is an example (see Katz 1978; Lash 1988). One way of responding to this challenge might be to investigate empirically whether at some inbuilt precognitive level there is recognizable common ground linking all such experience.

If this were the case, the social-construction argument would work the other way around: the religious scepticism that characterized much Enlightenment rhetoric would lead in due course to the construction of criticisms of religious experience such as those of Marx, Freud, and Durkheim. Having decided that religion is an error, they were bound to offer explanations of how the supposed mistake was made. But the natural spiritual awareness out of which religious interpretations emerge would not itself disappear. To the extent that it *was* equated with religion it would, so to speak, go into hiding among populations that have been inducted into a secularized understanding of reality. Indeed, the widespread taboo on the public expression of experience interpreted religiously is what research demonstrates. People commonly say they feared being thought stupid or mentally disturbed if they were to speak publicly of their experience (Hay and Morisy 1985).

Spiritual experience should be found most readily, then, in populations that have not yet been socialized into secular ways of interpreting reality—that is, children. Hay and Rebecca Nye (1998) published the results of just such a three-year study of the spirituality of six-year-old and ten-year-old children in two large industrial cities in England. The majority of these children had no connection with any religious institution, so the major methodological question facing the authors was how to converse with them about the subject while avoiding the use of religious language. They did this by identifying three contexts in which, if spiritual awareness were a biological reality rather than merely a social construction, it would be likely to emerge naturally (Nye and Hay 1996). These were:

- *awareness of the here and now*, which is both the normal mode of awareness in early childhood (Donaldson 1992) and central to the methodologies of prayer and meditation in the major spiritual traditions (cf. de Caussade 1971; Nyanaponika Thera 1962).
- *awareness of mystery*, a central theme of spiritual contemplation (Why is there something rather than nothing?) and universal among children, for whom even common events (flipping a light switch, lighting a match) are experienced as mysterious.
- *awareness of value*, as expressed in the intensity of spiritual feeling (Donaldson 1992) and in the ease with which young children show extremes of emotion that in adulthood tend to become suppressed.

The children were engaged in tape-recorded conversations relating to these themes by inviting them to talk projectively about a series of photographs of children of much the same age as themselves in situations where these kinds of awareness might be likely to arise (for example, gazing into the fire in the evening, looking out of a bedroom window at the stars, weeping upon finding a dead pet). More than a thousand pages of transcribed conversations relating to these dimensions of awareness were col-

lected and repeatedly analyzed with the help of a piece of computer software (QSR.NUD.IST 1996) to determine whether there was an overall concept that united all the children's spiritual talk. The concept that emerged was *relational consciousness*, which has two components as described by Nye:

- an unusual level of *consciousness* or perceptiveness relative to other passages spoken by that child
- conversation expressed in a context of how the child *related* to things, other people, him/herself, and God (Hay and Nye 1998, 113)

It is a salutary lesson when a piece of research overturns a prior assumption. Relational consciousness was not what we researchers expected. We had conceived of spirituality as an individual, private matter, a view that at first seemed to be bolstered by well-known religious injunctions, such as the advice to the yogi in the *Bhagavadgita* to seek solitude in the forest and Jesus' advice to pray in one's private room with the door shut. Closer inspection makes it clear that retiring into privacy is about encouraging awareness of immediacy; it catalyzes relational consciousness. In contrast, the public practice of prayer or meditation may encourage other kinds of motivation, for example reflections on the effect one is having on people nearby. It could lead to self-aggrandizement that obscures immediacy.

The immediate physicality of relational consciousness is obvious in children. Its primordial nature is underlined by the fact that all human beings spend the first three-quarters of a year of life inside the body of another person. In normal (not pathological) circumstances, physical and emotional intimacy continues after birth in the washing, feeding, caressing, and kissing of the newborn infant by the mother. Nor is this a one-way process. The intersubjective nature of relational consciousness has been strikingly demonstrated by Hungarian psychologist Emese Nagy (Nagy and Molnar 2004) in her work with infants who are only a few hours old. In remarkable videotaped sessions she repeatedly shows how neonates both respond to signals from an adult (tongue protrusion, finger raising, head nodding) and also initiate such exchanges. More recently, Lynne Murray and Liz Andrews (2000) have detected similar phenomena in infants even earlier, only a few minutes after birth.[7]

To clarify the significance of childhood experience for developing an understanding of relational consciousness, let us briefly expand our reference to the here and now as one of the natural contexts of spiritual awareness. The immediacy of infant awareness, or what Margaret Donaldson (1992) calls the "point mode," is gradually replaced by the "line mode," which comes to dominate at about the age of eighteen months. At that age, as children acquire language, they take on the adult characteristic of spending most of the time in second-order awareness—that is, reflecting on the past or wondering about the future. One area of adult life where

the line mode is consciously withdrawn from and replaced by a return to the point mode is in practical spiritual exercises like meditation and prayer. In Buddhist *vipassana* the novice is taught to remain aware of the breathing, here and now, as it is happening. Similarly, in Christian prayer the beginner is taught to raise the heart and mind to God here and now. The eighteenth-century French Jesuit Jean-Pierre de Caussade (1971) explicitly talks of the "sacrament of the present moment" as the heart of genuine prayer.

Closely linked with this, the most common finding during the course of many years of interviewing hundreds of people about such experience is that it is accompanied by an ethical impulse. The intensified sense of relationship seems to shorten the psychological distance between individuals and their environment—human, natural, or transcendent. The way they speak reminds one of those philosophers who emphasize the deep-seated nature of relationship as the basis of human identity. We are thinking of John Macmurray's (1961) reference to the fundamental human unit not as *I* but as *You and I*; of Martin Buber's (1961) exposition of the I/Thou relationship as opposed to I/It; and of Emmanuel Levinas's (1985) insistence on the primordial nature of ethics when he writes of "ethics as first philosophy."[8]

In summary, we suggest that a plausible way of conceptualizing spiritual awareness in naturalistic terms is to consider it as rooted in a biologically based precursor labeled "relational consciousness." Relational consciousness can be thought of as having evolved because it enables cooperation through a direct recognition of the holistic dimension of human experience.[9] Hence, it also allows the possibility of a communal ethic and, for the religious believer, a sense of relationship with a God who is experienced as immanent.

Natural and Socially Constructed Aspects of Spirituality

[PMS] If spiritual awareness is a natural human predisposition, it must be analogous in important ways with other forms of awareness, for example the ability to recognize colors in vision (cf. Hay 1994; Hay and Nye 1998). It follows that spirituality has no necessary connection to any particular religion or indeed to religion in general. Both religious and nonreligious spirituality—spiritualities that may be complementary to but not inclusive of each other—can be construed as alternative cultural constructions giving expression to the natural predisposition. They draw from religious (and nonreligious or even irreligious) traditions, and in turn these traditions are shaped by the biological predisposition of individuals. Throughout a person's life span, and perhaps the span of a civilization, such constructions will gradually become ordered according to the changing circumstances of human life.

One good example is the changing religious forms of spirituality within European culture. Out of a revealed monotheism, which asserted that God is a living God (ruling, punishing, and blessing, then suffering and loving), there emerged at a later date certain theologies that turned the concept of a living God into the impersonal, abstract idea of the Absolute (see Pruyser 1975, chap. 3). As a further or alternative step, the more personal mysticism of medieval ascetics seems often to have evolved into the eclectic and "scientifically" justified mysticism of New Age gurus.

A possible outcome of sustained reflection on spiritual experience within a sophisticated culture might be that declared spiritual ends become higher and higher and at the same time more and more elusive. We might see transcendence as becoming distant, accessible only to well-trained, expert, mature adults. Contemporary discussions of the development of religious faith do seem to fit this analysis. For example, spirituality appears in the highest of James Fowler's (1981) stages, the universalistic stage, and in the intersubjective stage in Fritz Oser and Paul Gmünder's ([1988] 1991) theory of religious judgment, not to mention the transpersonal theory of consciousness proposed by Ken Wilber ([1977] 1993).

However, if spiritual awareness is natural, it also must be, in a sense, commonplace. It must be present in persons of all ages, among illiterate as well as highly educated people, and in those not aware that they have a spiritual life (like Monsieur Jourdain in Molière's piece "The Bourgeois Gentleman," who finally learns that all his life he has spoken in prose) as well as those striving to cultivate it. Spirituality takes a multitude of forms, depending on the cultural setting and, more precisely, the pattern of spirituality in a particular tradition (for example, whether the tradition has religious preoccupations and to which religious culture it belongs).

Because of this universality, from a scientific perspective it is not appropriate to assess spirituality in the sense that any one of its manifestations is better or higher or more sophisticated than another. Such evaluations of spirituality are the task of the gurus and spiritual directors within a particular culture. But we are assuming for the purposes of our exploration that there is a primordial precursor of all spiritualities. In this situation, the scientist can at best make only one type of evaluation—a functional one: whether a person's spirituality works for her or him. Usually, some criterion of mental health serves for that purpose. We might follow the suggestion of C. Daniel Batson, Patricia Schoenrade, and W. Larry Ventis (1993, 235–39) that an apt functional measure of mental health could refer to (1) absence of mental illness, (2) appropriate social behavior, (3) freedom from worry and guilt, (4) personal competence and control, (5) self-acceptance or self-actualization, (6) personality unification and organization, or (7) open-mindedness and flexibility. In following their interpretation we assume that acceptable functionality does not require an individual to meet all of the above criteria. Such a comprehensive definition does not restrict the outcomes of spiritual endeavors to "psychological

well-being" or "comfort," as tends to be the case in relation to concepts of spiritual intelligence (Emmons 2000). Many acknowledged spiritually mature individuals paid a harsh price when they intentionally allowed themselves to suffer, even to the extent of undergoing martyrdom. Standard notions of well-being would not allow for that achievement, nor would it be seen as playing an adaptive role in a broader sense.

Like the ability to compute numbers or to match patterns, spiritual awareness would not have evolved if it were not useful in the preservation of the human species. Although most of the research (Greeley 1975; Hay and Morisy 1978; Hay and Heald 1987) suggests that spiritual awareness significantly contributes to psychological well-being, according to the evolutionary principle of inclusive fitness, the self-sacrifice of a particular spiritual individual also can contribute to the preservation of her or his social environment. There appear to be analogies here with David Sloan Wilson's recent argument (2002) for group selection in the evolution of religion.

Therefore, one might speculate that with the firm establishment of the species *Homo sapiens* and its increasingly dominating position in nature, spiritual awareness of both the individual and the social group has played a part in this ascent. We suggest that culturally recognizable spirituality emerges from an interaction between biological, psychological (especially with regard to self-preservation and enhancement), and social (especially with regard to group preservation and enhancement) components. Each of the elements is necessary. The biological background is the "fabric," while the socially constructed psychological "filter" that is the self (Taylor 1989) transforms it, using particular social and cultural patterns. It is important to insist that whereas the culturally determined construction of spirituality is certainly a reality, it could not emerge by itself. The human agent "discovers" its spirituality in the midst of the currently available constructions in the social environment, merging the universal (grounded in the inherited biology and psychology of the individual) with the incidental (grounded in the culturally available specific patterns of spirituality).

The point is that the universal can be somewhat hidden behind the incidental in the current secularized phase of Western history. Helmut Reich, Fritz Oser, and George Scarlett write, "In Western society since the Middle Ages there has been a shift from emphasising a great transcendence to emphasising intermediary transcendence" (1999, 9). For these authors, "a great transcendence" means for example God, whereas "an intermediary transcendence" means for example an elevating experience after becoming the father of a long-expected child. Later they even talk about "minimal transcendencies." What is the reason for this shift? Is it really the case that in the past, especially in the "religious" Middle Ages, people did not appreciate any "intermediary transcendencies," and were they not given respect along with the larger religious ones? Is it really the case that in contemporary times, for such people as agnostics or atheists (religious persons still

have access to traditional versions of the great transcendence), there is no great transcendence comparable to the Jewish, Christian, or Muslim God, greater of course than "major football events, motor-cycling, hang-gliding, not to mention UFO 'religions'" (Reich, Oser, and Scarlett 1999, 9)? Rather, in every domain, both religious and secular, there exists "greater" and "lesser" spiritual awareness, exactly as described by James ([1902] 1929; see in particular Wulff's interpretation of James [1997, 488]) in his concept of the "mystical ladder." But let us, in tune with James's emphasis, concentrate on the more extreme examples of spiritual experiences, those that can change one's orientation in life, though only when one's appraisal of the situation is experienced as a changed perception.

Spirituality as Symbolic Adaptation in *Grenzsituationen*

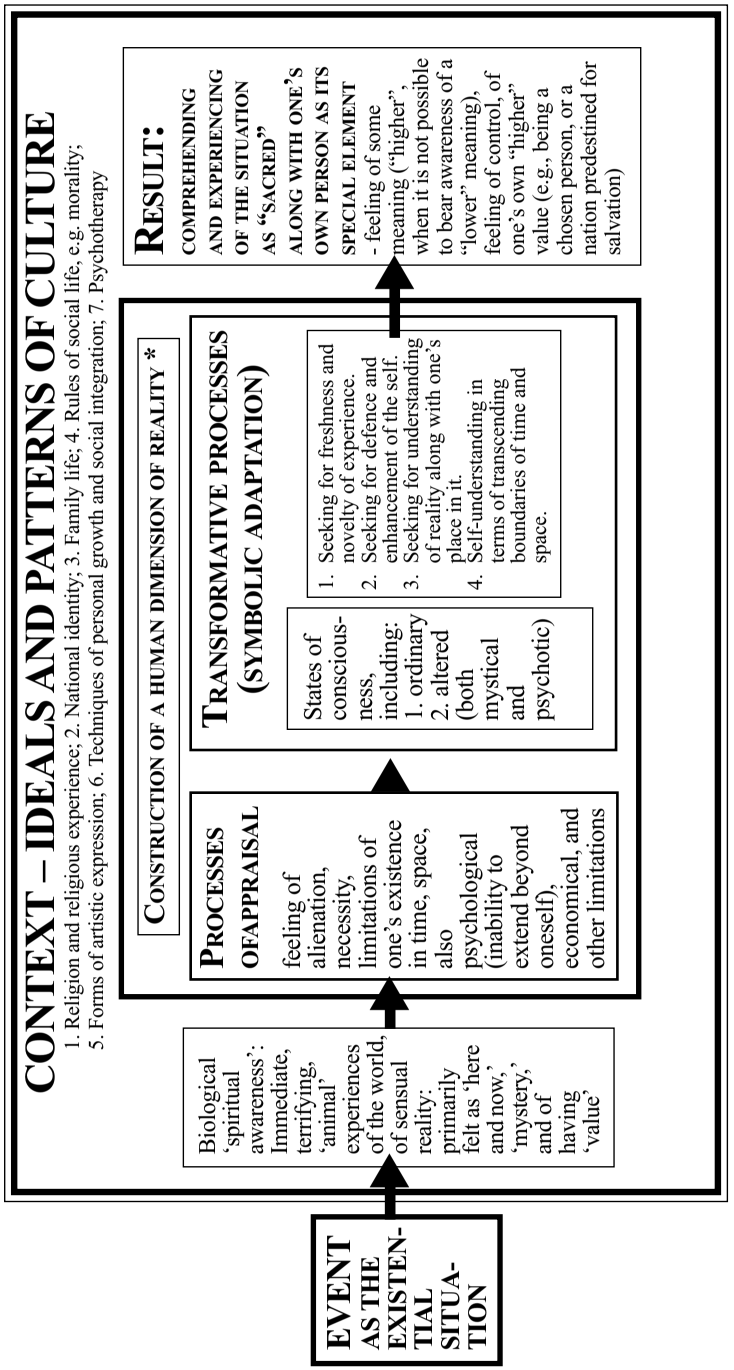
[PMS] From William Durham's (1991) "co-evolutionary" perspective that sees biological and social evolution occurring in parallel and interacting with one another, we assume that in the human species a process of natural selection of cultural as well as biological variations takes place, according to their survival value. As Durham points out, cultural selection occurs at a much more rapid rate than the selection of biological variations. Thus, the human species has relatively speedily—within a period of a few thousand years—adapted its cultural forms to suit a more and more complex technological environment. This has been made possible through the evolution of the ability to think abstractly—in part through the invention of literacy (Luria 1976; Ong 1982)—and hence to benefit from the cultural (including religious) heritage of past generations. In this way it becomes possible to avoid or overcome the numerous limitations or boundaries experienced by an individual in her or his struggle to make sense. We recall Karl Jaspers' ([1932] 1969) notion of *Grenzsituationen*—existentially significant situations, or, more precisely, those experienced as such by an individual. Examples include the awareness of one's psychological and social limitations, the limitations of cognition, the perishability of everything, the awareness of one's loneliness, anxiety, failure, guilt, and eventual death. Others could be added: physical or mental suffering, illness, loss, bad luck, imprisonment or bondage, addiction. In agreement with this perspective, Paul Baltes and colleagues (1995, 158) claim that "existential life matters are at the centre of wisdom-related knowledge and present probably the most difficult type of life problem to deal with."

One can consider the process of overcoming (or breaking, or avoiding) these *Grenzsituationen* as an example of the coping process, in terms used by Richard Lazarus (Lazarus and Folkman 1984), and later, with regard to religion, by Kenneth Pargament (1997). Pargament explicitly claims that "the struggle with ultimate issues" is the mark of religion. We would like to extend this connotation by speaking of that struggle as the mark of

spirituality. Pargament writes about the "search for significance" as the mark of religion and its crucial element, the sacred. He continues: "Any of the very human experiences of the world, from romantic relationships and hero worship to political affiliations and identification with a sports team can also be 'sacralized'—that is, invested with a spiritual, even supernatural, aura" (1997, 29, 31). Indeed, sacralization (or sanctification) of an unbearable *Grenzsituation* is the core of the process of spirituality.

The process of coping with an existential situation consists of several elements (see Figure 1). First, something must happen that is experienced as a boundary event by the self (or, in terms of a social group, as a boundary event for this group). The immediate experience is a kind of shock, something sensed as painful, but in the first place and in most cases it is inexpressible. The experience perhaps corresponds to an aspect of the primary "spiritual awareness" discussed earlier. Although it is primary and crucial to our understanding of spirituality, it needs encoding; without this, it remains at the level of terrifying primary animal experiences, a mystery, which cannot be struggled against without employing some interpretation; that is, using the "veil," the "curtain," or the "safety" of symbol (Pruyser 1968). This kind of experience uniquely evokes the process of coping, with an initial crude appraisal and a secondary, more obviously culturally constructed, appraisal, where the experience is recognized as, for example, a feeling of alienation, the awareness of some necessity, of being oppressed, enslaved, locked in a social trap or by personal incapacity, the realization of one's poverty, rejection by the group, and so on.

These appraisals can profoundly influence the individual's consciousness. However, two kinds of effect are possible here—either the maintenance of an ordinary waking state of mind or the triggering of an altered state of consciousness. In the first instance, an individual might indeed continue to find him/herself in a state of crisis, taking the role of a scapegoat, someone imprisoned, dependent, or helpless, a victim of the situation or of blind fate, a humiliated child of God, or possessed by a ghost or devil (though in the current cultural climate the last possibility would likely be considered pathological). If the person remains in this state the boundary issue remains unresolved and may well return the individual to a primal state of incomprehension. But the ordinary state of consciousness can also permit a resolution of the crisis, as when the individual uses roles, patterns, or beliefs that are available in the social environment as part of the cultural heritage such as religion, national identity, family roles, moral incentives, artistic expressions, techniques of personal growth (including recently popular forms under the label of New Age), opportunities for social integration with particular religious or ideological communities, and numerous forms of psychotherapy. These roles, patterns, or beliefs can bring about a sometimes unconsciously expected insight, the discovery of a new reality or a new understanding of one's place in it.



* As a necessity stemming from the social essence of human existence. Spirituality has a social nature; its opposite is not secularity but alienation (Hay 1997, 11). Other relevant ideas: Gemeinschaftsgefühl (A. Adler), species being (K. Marx).

Figure 1. Spirituality as the process of coping with existential issues.

Alternatively, if the existential crisis is sufficiently severe, an altered or mystical state of consciousness may arise, and its attainment depends on many circumstances both internal (the particular physiological properties of the person's neural system, for example) and external (traditional disciplines such as contemplation or meditation, or the use of artificial triggers, including drugs).[10] Often unexpectedly, the individual switches to an altered state of consciousness, resolving the problem through taking some new and even "exceptional" position. Mystical states have been most often associated with the religious domain (as in the multitude of recorded reports of religious mystics), but they also seem to occur frequently in association with artistic life. In search of artistic inspiration, persons may intentionally look for opportunities to experience mystical states, sometimes through the use of alcohol and other drugs. Whatever the purpose, individuals have the experience of being moved beyond what they may often feel is a painful and regrettable state of reality into an "ideal" world that offers a new and much more acceptable perception of themselves.

This possibility emerges from some inherently human needs or capacities. Among them are (1) a need to experience freshness and novelty[11] as an alternative to boredom, or at least the feeling that one's experience is redundant or secondhand (which incidentally can be a reason for turning away from institutional religion and toward one's own discovery of the sacred); (2) the search for enhancement or defense of one's self-esteem, a currently crucial feature and function of the self and an issue that has become the object of a vast amount of research and theory in psychology, for example on ego defenses in psychoanalysis, the theory of cognitive dissonance, and attribution theory. In line with this, Sheldon Solomon, Jeff Greenberg and Tom Pyszczynski (1991) developed the theory of terror management, according to which the terrifying awareness of mortality necessarily evokes beliefs in immortality, both in literal ways (such as religious beliefs in the afterlife and further real existence) and symbolic ways (such as contributions to the culture, extending beyond one's individual life span). According to this theory, an important positive role is played by self-esteem, so enhancing it is recommended as a means for terror management; (3) the search for a profound understanding of reality along with one's place in it. This is a major orientational need, crucial for one's adaptation, and explored in those perspectives that see religion primarily in terms of providing identity (Mol 1976; Cumpsty 1991; Solomon, Greenberg, and Pyszczynski 1997).

Terror management theory posits that the juxtaposition of an inclination toward self-preservation with the highly developed intellectual abilities that make humans aware of their vulnerabilities and inevitable death creates the potential for paralysing terror. One of the most important functions of cultural worldviews is to manage the terror associated with this awareness of death. This is accomplished through the cultural mechanism of self-esteem, which consists of the belief that one is a

valuable contributor to a meaningful universe. (Solomon, Greenberg, and Pyszczynski 1997, 71)

The result of attaining this state of consciousness, and the realization of the needs described above, is that in one way or another a person comes to understand themselves as a being transcending the boundaries of space and time. This is what we mean by symbolic adaptation: the exclusively human process of constructing an absolute reality through spiritual awareness. The sacred element inherent in it seems crucial: this is the central value, the finest achievement of meaning, the goal of the search for significance. We can only regret that there is no alternative for the word *sacred*, which is almost always assumed to be limited to religious contexts. It would be more theoretically consistent to have a word encompassing both the sacred (as commonly associated with religion), and the other-than-sacred (but still profoundly significant for the individual) achievements of the transformative process of symbolic adaptation.

Here we arrive at the essential point of the meanings of religion and spirituality. First, the scope of the meanings of the concepts *religion* and *spirituality* are partly divergent. Behaviors commonly associated with religion, like habitual prayer or the meeting of the parish committee considering the annual church budget, do not seem to have any common ground with spirituality. On the other hand, many spiritual occurrences, like aesthetic experiences related to the arts or nature, may not involve any religious context even for a deeply religious person. Getting happily married can be motivated religiously—in terms of God's gift or grace—or without any religious connotation, although still spiritually, as in the case of a sense of destiny or in following the wish of one's deceased but spiritually present mother. Spirituality and religion sometimes intertwine and sometimes diverge.

One can also interpret spirituality (or religion) as a set of cognitive-emotional constructs producing spiritual transformation—seemingly the process determined by those constructs. What these constructs share is that they provide resources for switching one's awareness from the mundane to the sacred (whatever is meant by the latter) mode of living. The same thing appears not the same in another mode of experiencing the reality. In the mundane mode straw is just fodder, while in the sacred version of reality the straw put under the Christmas Eve supper table becomes holy (at least in Poland), no matter what the religious involvement of the supper participants. In the mundane mode of living the individual struggles with everyday problems, often evoking an impression that such concerns are a defense against the awareness of mortality. In the sacred mode of living, everything around one turns into the unusual. Life becomes a miracle (see the famous poem "Miracles" by Walt Whitman [1900]), the blue vase shines (Deikman 1971), and sudden spiritual insights strike like lightning.

This is the so-called spiritual transformation, a phenomenon that is present remarkably often in human life. As represented in Figure 1 under the labels "transformative processes" and "symbolic adaptation," spiritual transformation stems from the unique human abilities resulting in, and by means of, the creative process. Let it be called *mythos* (Labouvie-Vief 1994), the illusionistic world (Pruyser 1968), transliminality (Thalbourne and Delin 1994),[12] or even the regaining of a feeling of coherence (Antonovsky 1987); in all of these cases we see the emergence of a new reality—in the sacred mode. This may uplift the individual, like a practitioner of *tonglen* meditation who after meditation scores more highly on P. M. Socha's "Feeling of the Sacred" Scale (Kruczyński 2004), or the couples reported in the study by A. Mahoney and her colleagues (1999), where the measure of sanctification of marriage was related to better sexual functioning. These examples suggest that it is no longer necessary to defend the need for the sanctified, or simply sacred, world.

How and why does spiritual transformation happen? One psychological explanation derives from Seymour Epstein's (1994) cognitive-experiential self theory. It asserts the existence of two levels of psychological functioning. They are equally important and, as a human evolutionary heritage, unique to human beings. At the first level, a subject can experience (this means "can become aware of" in a way not available to other animals, as Ewan MacPhail [1998] suggests) things not represented at the conscious, cognitive and rational, second level of psychological functioning. Such an occurrence apparently provokes quite excessive, usually ambivalent, both fascinating and in the longer term unbearable emotions—"cosmic happiness" or, on the contrary, fear, if not emotional terror. The first level fits rather well with the notion of a "pure" relational consciousness, which we described above. It is therefore not surprising that children can more easily report such experiences. However, in the long term, everybody seems to be prey to the uncertainties of life. Accustomed to spending most of life at the second, rational, level of consciousness, people look for the accessible explanations or patterns of meaning to apply to those crude and unformed experiences. In this process, the subject identifies the first-level experiences with the second-level idea of the sacred, holy, void, Tao, archetype, universal good, proto-consciousness, and so forth. Any of these ideas would seem equally likely to be taken up, unless the surrounding and already internalized environmental cues make a particular one—such as the religious concepts prevailing in a given culture and/or prevailing in a given mind—channel it in a more or less determined way.

Concluding Remarks

[DH, PMS] In summary, the major point to be made about our two perspectives is that they are complementary:

1. Both of us recognize that spirituality has a firm basis in the physical nature of the species *Homo sapiens*. PMS does not focus on the presocial level but fully agrees with its reality; note his reference to Epstein's (1994) two levels. DH talks more about the experiential level, PMS more about the cognitive one, and these complementary perspectives correct the overemphases of some sociobiological and some social constructionist commentators.

2. PMS also recognizes the relevance of spirituality to ethics, operating at both of these levels. Ethical sensitivity *could not* appear only at the experiential level and *would not* emerge only at the cognitive level. Ethical sensitivity stems, of course, from natural resources. As Michael Tomasello (2001) claims, humans have the evolutionarily developed ability to create and use social-cultural patterns and symbols.

3. We both also see spirituality as typically, but not always, having a positive adaptive function in enabling individuals (and perhaps societies) to survive and to cope with existential issues. In this respect our approach differs from interpretations of spiritual or religious experience that explain it as some form of socially constructed error.

4. Because we see spiritual awareness as natural and universal in the human species, it follows that it cannot be related only to members of a particular religion or even to religious people in general. All human beings, including secular atheists and others hostile to religion, must on our definition possess spirituality in some form. Research with children (Hay and Nye 1998) suggests that many forms of symbolic expression other than the language and practices of institutional religion are indeed used to express spiritual awareness. Nevertheless it remains true that the characteristic mode of expression of spiritual awareness is via the religions.

5. PMS sees spirituality primarily as a means of coping or problem solving. Although there is an element of this in DH's understanding, his characterization of spirituality as relational consciousness means that he places rather more emphasis on the presocial dimension of spirituality and the ethical significance of this.

More thought needs to be given to testing the plausibility of our complementary theoretical positions and the relationships between them. They are offered as conjectures that may be fruitful for those of us who are attempting to study spirituality from a naturalistic perspective but who do not necessarily wish to accept reductionist interpretations.

NOTES

1. We use this rather clumsy elision at this point in our presentation because of an ambiguity of meaning that is resolved later in the essay.
2. The data were used in the production of a BBC television series titled *Soul of Britain* and broadcast during the year 2000.
3. One might of course ask, Is the trend toward spirituality the same as secularization? Rodney Stark and William S. Bainbridge (1987) in their theory of religion deny this; religion will not fade out, it will be replaced by more adaptive forms, and secularization is an interim phase. On this reading, spirituality is the root of religions yet to come.
4. He was well aware of the social dimension of religion and gave space to a discussion of social evolution, well ahead of Richard Dawkins's (1976) speculations on memes and the many discussions of coevolution (see Durham 1991).
5. Hardy was very interested in parapsychology and was for a time president of the British Society for Psychical Research. He also cooperated with Arthur Koestler and Robert Harvie in writing a book about it, *The Challenge of Chance* (1973).
6. As Gordon Allport (1950) put it many years ago, temperament must play a part, with extraverts preferring the stimulation of a crowd. Nevertheless, such people were a small minority in the British sample.
7. For scholarly discussions of intersubjectivity in the human species, see Trevarthen 1999; Tomasello 2001.
8. As such it runs counter to the extreme individualism that has characterized mainstream Western philosophy since the seventeenth century and is held firmly in place because of its pivotal role in market economics (Smith 1776; Macpherson 1962; Hirschman 1997). For a detailed argument leading to this conclusion see Hay 2003.
9. The impression one sometimes has of debates on the evolution of altruism is of increasing and unsatisfactory complexity as kin selection and reciprocal altruism theory struggle for explanatory power. The reality of self-sacrifice as explored empirically, for example in Kristen Renwick Monroe's (1996) study of altruism in persons who rescued Jews in Nazi-occupied Europe, or the philosophical exploration of self-sacrifice by Levinas (1985), leaves one with the uneasy feeling that current biological accounts of altruism are inadequate to the phenomenon and that further exploration of altruism and relational consciousness could prove fruitful.
10. See, for example, the resume of the research on the facilitation of religious experience and mysticism in Wulff 1997, 69–95, 176–99.
11. The theory of sensation seeking of Marvin Zuckerman (1994) asserts that this tendency is a condition of keeping a positive emotional state.
12. Defined roughly as "ease in crossing the threshold" and "a largely involuntary susceptibility to, and awareness of, large volumes of inwardly generated psychological phenomena of an ideational and affective kind," transliminality correlated with Haraldson's Religiosity Scale and several other measures of religiosity as well as with two measures of mystical experience (Thalbourne and Delin 1999). A relation between the relational consciousness and transliminality should be considered in further analyses.

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