Chapter 6
Contemporary Approaches and Debates

So far we have been concerned with great historic movements in the dialogue between psychology and religion. Where is the field headed next? While predictions about the future are dangerous to make, in this chapter we review three prominent movements within psychology that are likely to affect the dialogue with religion. These are: (1) neurobiological approaches that utilize our expanding knowledge of the structure and workings of the brain; (2) evolutionary and cognitive psychology, which have developed a combined approach to the study of religion; and (3) post-modern perspectives, which challenge many of our conventional understandings of the human person and suggest new ways to think about religious life and the spiritual quest.

6.1 Neurobiological Approaches to Religion

Since the mid-20th century there has been increasing interest in the biological bases of behavior. The growing sophistication of research methodology and knowledge in this area has allowed researchers to begin investigating the biological underpinnings of religious experience. These attempts assume that there is a relationship between the brain and our mental life. In the early modern period, mind and brain were treated as largely separate from each other. This **dualistic** position was embedded in the philosophy of Rene Descartes (1596–1650) and has been very influential in modern thought. However, 20th century developments in neurobiology have questioned this position and today it has largely been rejected in theology as well (e.g., Rahner, 1963, p. 216). This has led to discussions about the **mind-brain problem**, how our mental functioning (which appears to be nonmaterial) is related to the physiological processes in our brain (which appear to be material).

A number of solutions to the mind-brain problem have been proposed as replacements for dualism, generating an enormous literature that is beyond the scope of this book. In the neuroscience community, a popular philosophical position is that the mind and brain are the same thing, a version of **monism**. There are various versions of this with important differences. In **reductive materialist monism,** mental events are thought to be merely brain processes. Generally, scholars who take this

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view assume that consciousness and subjective awareness are **epiphenomena** with no real effect or importance. However, many believe that this kind of eliminative dualism is inadequate, and that consciousness and subjectivity are vital parts of our humanity (e.g., Varela, 2001; cf. Nagel, 1986). In this view, finding a way of looking at mind and brain that preserves the integrity of both is the most sensible way of approaching their relationship.

While it is entirely possible that the mind-brain problem is philosophically and scientifically insoluble, there are several non-reductive possibilities available that avoid dualism and allow mind and brain to relate to each other without being the same thing. One sophisticated version is *dual-aspect theory*, which argues that mind and brain represent two aspects of a single substance, just as light is both a wave and a particle (Barbour, 2002; Velmans, 2000, pp. 247–250). Another possibility is to consider consciousness as an *emergent phenomenon* of the brain (Murphy, 2002; Stoeger, 2002; see Section 2.1.2). In this view, mental processes supervene on physical ones—they are dependent upon them without being reducible to them. This means that it is impossible in principle to describe mental events completely as brain events, as emergent levels must be described on their own terms in addition to their relation with other levels (Clayton, 2002). Another more speculative view is that of some quantum theorists (e.g., Grib, 1996) who believe that pure consciousness is a *property of the universe* (see Section 2.5.1)—a position taken in traditional Hindu thought.

6.1.1 A Brief Introduction to the Brain

A basic knowledge of the brain is a helpful prerequisite to understanding neuroscience research related to religion and spirituality. On a cellular level, the brain is a collection of neurons that transmit signals using chemicals called **neurotransmitters**, which are released by a nerve cell and link up with receptor structures that stimulate or inhibit activity in other nerve cells. At the level of gross anatomy, the brain can be thought of as a collection of structures. In the **localization hypothesis**, it is assumed that particular locations in the brain carry out specific functions. There is considerable support for this, particularly with regard to basic sensory and motor functions. However, many functions (e.g., memory) do not seem to have a single specific location connected with them. This gives support to the **mass action hypothesis**, the idea that the whole brain or widely distributed networks of brain cells are involved in many brain functions. This **connectionist** view of the brain has generally replaced older **computational** models, which pictured the brain as a computer that processes instructions in a linear fashion. Connectionist theories help us understand how emergent processes can develop in the brain, helping it solve problems and increase its **plasticity** or ability to change (Varela, 2001; D'Andrade, 1995, pp. 10, 149; LeDoux, 2002, p. 43).

At a structural level, the brain can be generally divided into two main areas: cortical and subcortical (e.g., Cummings, 1985, p. 78; for maps of the brain see the

digital atlas at www9.biostr.washington.edu/da.html). The **cortex** is the outermost, wrinkled and folded part of the brain and consists of four lobes—the **occipital lobe** located at the back of the head, the **parietal lobe** on top and to the rear, the **temporal lobe** on the lower sides and to the back, and the **frontal lobe**. Many higher cognitive functions are thought to be related to processing in these parts of the brain. The **subcortical** area of the brain contains a maze of small structures, pathways, and systems that carry out a variety of functions. One of these is the **limbic system**, which comprises a number of structures including the amygdala, hippocampus, and cingulate gyrus. The limbic system is thought to be related to emotional functioning, socioemotional perception, memory, and attention (see e.g., Paton, Belova, Morrison &, Salzman, 2006). It is connected to a number of other important subcortical structures, including the thalamus, which functions as a sensory relay station for the brain, and the hypothalamus, which exercises control over the body's hormone system. It is thought that the limbic system is able to regulate sensory input and focus through its connections with the thalamus (for a database of interconnections see brainmaps.org). Some of the functions of cortical and subcortical structures appear to be **lateralized** and more concentrated in either the left or right side of the brain, although contemporary research has tended to downplay the idea that some functions are strictly "left brain" or "right brain" (cf. Springer & Deutsch, 1998).

Another key part of the nervous system is the **autonomic nervous system** (**ANS**), which helps regulate basic bodily functions. It includes the **sympathetic** or *ergotropic* **nervous system**, which is involved in arousal and stimulation, and the **parasympathetic** or *trophotropic* **nervous system** that has rest and rebuilding functions. Studies of brain waves using an **electroencephalogram** (**EEG**) have led some authors to suggest that ergotropic activity is connected with desynchronization or disconnection of brain wave activity in different regions, while trophotropic activity is related to synchronized EEG, relaxation, and suspended judgment. The ANS is regulated by the hypothalamus and indirectly by the limbic system through limbic-hypothalamic interconnections.

Traditional theories of brain function (e.g., Luria, 1973) view the brain as organized in hierarchical levels of primary, secondary, and tertiary or integrative functioning. In the sensory systems, primary functioning involves reception of basic sensory information. At this level, sensory information is processed independently for the different modalities: auditory information is handled in the temporal lobe, visual in the occipital lobe, and somatosensory (e.g., touch, body sensation, body image, and location) in the parietal lobe. At the secondary level, this basic information is associated with prior learning, allowing for identification and interpretation of sensory information. At the highest or tertiary level, information is processed in **sensory association areas** that integrate information from different sensory modalities (cf. Hunt, 1989). This probably takes place in the lower parts of the parietal lobe where it abuts the temporal and occipital lobes. Some authors refer to the tertiary area on the left side of the brain as the *verbal association area,* and the corresponding area on the right as the *visual association area* because of the tendency for language functions to be carried out on the left side of the brain and

visual functions on the right. In the motor system, which has important controls in the frontal lobes, primary function involves the interface of the brain with motor neurons that trigger movement in various parts of the body. At the secondary level, the complex motor programming and sequencing necessary for activities is carried out. Finally at the tertiary motor area, the brain integrates information from the sensory areas and limbic system, as well as supports planning and decision-making functions related to goal-directed behavior. This tertiary area is sometimes referred to as the **attention association area**. In the motor unit, information moves from the tertiary level though the secondary to the primary level, where it triggers nerves that run to muscles and other parts of the body.

6.1.2 Evidence for Biological Factors in Religion

Most of the research on biological factors in religion has focused on physiological and neurological changes connected with meditation and religious experience (see Section 13.6). Older research has explored the connection between religion and epilepsy, while newer research has begun exploring possible structural, neurochemical, and genetic factors in religious experience or practice.

6.1.2.1 Epilepsy Studies

Epilepsy is a condition marked by **seizures** or uncontrolled electrical activity in the brain, as well as physical or mental changes. There are two main types of seizures—*generalized seizures* that affect the entire brain and *partial seizures* that affect only parts of the brain and have more varied effects. The most common site for partial seizures is the inner portion of the temporal lobe near the limbic system, with seizure activity often spreading to the hypothalamus. These seizures are typically complex, involving transliminal alterations in normal consciousness or awareness. In addition, individuals frequently report spiritual or religious feelings during seizures or abnormal temporal lobe activity (Thalbourne, Crawley, & Houran, 2003). There have even been reports of religious conversions following epileptic seizures (Saver & Rabin, 1997). This led Persinger (1987; Persinger & Makarec, 1987) to speculate that transient temporal lobe electrical activity forms an important base for God experiences. Persinger has found correlations (in the 0.4–0.66 range) between reports of complex partial epilepsy symptoms and various paranormal experiences, including a sense of presence, as well as a number of negative personality traits like aloofness and judgmentalness. He argues that these experiences reflect transient temporal lobe activity, perhaps triggered by changes in magnetic fields, which might be more likely to trigger paranormal experiences in those with seizure predispositions (Persinger, 2001; Persinger & Healey, 2002; McKay & Persinger, 2006). However, his experimental findings have not been confirmed by other investigators (Austin, 2006, p. 157).

Although quite interesting, Persinger's research has a number of limitations. First, it relates seizures to paranormal experiences and sense of presence, rather than strictly religious experiences. MacDonald and Holland (2002) partially confirmed this when they found that spirituality, but not religiousness, was related to a self-report measure of complex partial epileptic-like signs. Other investigators have found that temporal lobe epilepsy patients do not have a higher rate of mystical or religious experiences and religiousness than others and that the phenomenology of the seizure experience is typically different and more unpleasant (Sensky, 1983; Wildman & Brothers, 2002, p. 368; Watts, 2002a; Jeeves, 1997, p. 69). Persinger's work also contains a number of questionable philosophical and neurological assumptions; for instance he assumes a strict localization hypothesis (Persinger, 2001) that is not compatible with more recent neuropsychological understanding.

6.1.2.2 Neurotransmitter Findings

Recently, research has been appearing looking at the relationship between religiosity and neurotransmitters. In one study, Borg, Andree, Soderstrom, and Farde (2003) found that higher levels of serotonin inhibition in subcortical structures connected with sensory functioning were strongly related to higher levels of materialistic and rationalistic attitudes and lower levels of spiritual acceptance and self-transcendence. Kurup and Kurup (2003) compared neurochemical activity in the hypothalamus in spiritually inclined and atheistic individuals and found that differences in serotonin and dopamine functioning seemed to sensitize the perceptual system in spiritually inclined persons while increasing the chance of epileptic activity. They also suggest that this sensitization might produce subliminal types of perception—sensory activity outside of our normal conscious awareness. This would be consistent with phenomenological studies that found sensitivity to be a frequent characteristic among mystics and those who have religious experiences (see Sections 4.2.2 and 4.3.2), while atheists and those not spiritually inclined may not have easy access to such experiences. However, other studies have found different kinds of changes (e.g., Kawai et al., 2001), and this research suffers from small sample sizes and a lack of control over confounding variables. Additional brain chemical such as endorphins and melatonin are also being identified as potentially related to ASCs or mystical experiences, further confusing the picture (Hill & Persinger, 2003).

6.1.2.3 The Heritability of Religion

Could religion be inherited as part of the genetics of human nature (Anderson, 1998)? Answering this question is difficult in a couple of ways. First, the relationship between one's genetic information or **genotype** and its expression in the **phenotype** of a particular organism is complicated. Most genes have multiple effects

on the phenotype, and multiple phenotypes can come from the same genotype in response to different environmental conditions and needs. Furthermore, the phenotype manifests itself in different ways depending on the environment and our personal choices, so the effect of genotype on behavior is quite indirect, making simple reductionistic models impossible (Geary & Bjorklund, 2000; Soto & Sonnenschein, 2006; cf. Pannenberg, 1985, p. 34). The second problem relates to the estimation and interpretation of the **heritability coefficient**, which indicates the amount of correspondence between genetic variability and the occurrence of a characteristic (Lerner & von Eye, 1992). Like a correlation coefficient, heritability coefficients do not necessarily imply causation. For instance, membership on a men's soccer team has a 1.0 (perfect) heritability index because sex-linked genetic variability (male vs. female) completely predicts team membership, but no one would say that the makeup of the team was completely due to sex-linked genetics.

An important procedure used in heredity research is the **twin study**, which compares identical twins having very similar genotypes with fraternal twins who have a normal level of genetic similarity. Twin studies have consistently found that religious affiliation—where you go to church—is not heritable but that religiosity and religious attitudes have a significant genetic component. One of the earliest studies was that of Waller, Kojetin, Bouchard, Lykken, and Tellegen (1990) who looked at a group of Minnesota twin pairs and found that roughly 50% of variance in religious values and interests was accounted for by genetic factors. Later studies have confirmed that pattern but found substantially lower heritability estimates. One of the best studies is the Virginia 30,000 study (D'Onofrio, Eaves, Murrelle, Maes, & Spilka, 1999), which has studied 14,781 twin pairs and their families, looking for **concordance** or agreement between the members of each twin pair on religious variables. While religious affiliation was related to culture or family rather than genetics, modest genetic effects for religiousness were present. Genetic-only effects for church attendance were 14.5% for men and 14% for women, and conservative religious attitudes had additive genetic effects of 35.8% for men and 17.3% for women. Personality variables did not appear to account for the relationship. These heritability figures are in line with Australian twin studies from the late 1980s that found figures in the 0.22–0.35 range (Eaves, Martin, & Heath, 1990), which corresponds to heritability figures on personal devotion behavior found in one study (Kendler, Gardner, & Prescott, 1997). Higher heritability figures have been reported among African Americans (Heath et al., 1999). However, heritability estimates typically make assumptions (e.g., about the independence of heredity and environment) that may not be valid in research on religious variables, so that research findings in this area may be highly misleading (D'Onofrio et al., 1999).

The findings on heritability are interesting and have led some writers to speculate that perception of a spiritual reality is an inherited ability that people possess in varying degrees, much as different people are more or less able to ride a bicycle. In this view, religiosity or atheism are related to high or low levels of this trait (Alper, 2001; Thalbourne & Delin, 1999). Specific gene locations have not been proposed, but given the fact that much of the effect of genes is through complex patterns of interaction, rather than specific effects of single genes, such a location is unlikely to exist.

6.1.3 The Mystical Mind

The only detailed attempt to construct a comprehensive biological model of religion has been that of Newburg and d'Aquili (d'Aquili & Newberg, 1999; Newberg & d'Aquili, 2000; Newberg & Newberg, 2005). They follow the perennialist model of Stace and focus on two possible universal dimensions of religious experience: (1) intermittent emotional episodes involving awe, peace, tranquility, or ecstasy and (2) varying degrees of unitary experience. They also follow Stace in separating the experience of the mystical event from its interpretation so that while the experiences are cross-culturally invariant there may be interpretive differences (Laughlin, McManus, & d'Aquili, 1993, pp. 160–164). They are particularly interested in a model that will explain the occurrence of states of *absolute unitary being* (AUB) and other mystical experiences. They believe such a theory could provide a basis for a new overarching universal metatheology that is not tied to a particular technique or religious tradition.

Newberg and d'Aquili believe that religious and spiritual experiences are supported by activity in many parts of the brain. Sustained attention, which is necessary in most religious practices such as prayer and meditation, is assisted by activity in the cortex, particularly the right frontal area, and in subcortical areas such as the cingulate gyrus. This in turn causes changes in structures such as the thalamus that are involved in the processing of sensory information about our body and the outside world. However, they believe that much of religious experience is due to patterns of ongoing "tuning" or activity in the autonomic nervous system. Under normal conditions, the ergotropic and trophotropic branches of the ANS act to inhibit each other, but under special conditions the system can be altered so that intense stimulation in one branch can spill over and activate the other branch as well, producing unusual mental experiences as well as physiological changes that are often associated with meditative practice. This retuning can be driven from the "bottom up" by physical activities like dancing and fasting, or it can be driven from the "top down" through imagery or meditative concentration, which activates different neurotransmitter systems (Laughlin et al., 1993; Newburg & Iversen, 2003). They identify five categories of excitatory events relevant to religious experience (d'Aquili & Newberg, 1999, pp. 255–256):

- Trophotropic, producing a relaxed yet vigilant mental state as in meditation
- Ergotropic, which produces aroused alertness as in flow states
- Trophotropic with ergotropic spillover, leading to feelings of energy or "oceanic bliss"
- Ergotropic with trophotropic spillover as in ecstatic experiences
- Maximal stimulation of both systems, leading to the most intense mystical experiences

Another important part of their view of the brain is their concept of *cognitive operators*, "general methods or functions by which the brain interprets the world" (Newburg & d'Aquili, 2000, p. 253). They identify a number of operators including a **holistic operator**, which enables us to see gestalts and put things in larger

contextual frameworks. They connect the holistic operator with activity in association areas of the right parietal lobe. In their view, all religious experiences involve the operations of the holistic operator, which generates a sense of unity and thus of self-transcendence and transformation (d'Aquili & Newberg, 1999, pp. 159–161).

D'Aquili and Newburg (1999) have also applied their theory to understanding myth and ritual. Their basic thesis—like that of Kant and evolutionary psychologists (see Sections 2.2.3 and 6.2.3)—is that ideas found in myth and ritual are shaped by mental structures such as cognitive operators. They believe that myths, rituals, and religious practices trigger holistic operators that allow all areas of the brain to work together so that paradoxes and ultimate problems like death can be both perceived and overcome. Thus while religion has its problems, overall its adaptive benefits outweigh the negatives. Although they decline to take a position on whether the brain is the cause or the occasion for mystical phenomena, they point out that there is no reason to assume that mystical and other experience do not point to what is real (cf. Laughlin et al., 1993).

While the first stage of all mystical experiences probably involves activation of the frontal cortex as the will operates to clear the mind (Newburg & Iversen, 2003), they argue that different types of experiences will be related to activity in other areas of the brain. For instance, kataphatic experience will involve the visual association area while numinous and apophatic experiences will have its activity reduced or blocked (d'Aquili & Newberg, 1999, pp. 102–117, Newberg & d'Aquili, 2000, p. 258; Jourdan, 1994; cf. Section 3.3.2). They believe that less intense activation, meditation, and ritual or spontaneous events cause discharges in the hypothalamus and the limbic system leading to feelings of fear, awe, or ecstasy but at higher levels of activation the holistic operator blocks the association areas in the parietal lobe and produces a sense of absolute unitary being and breakdown of the dichotomy between self and other.

6.1.4 Evaluation and Critique

The work of Newberg and d'Aquili has been critiqued by a variety of scholars. Watts (2002a) notes that the theory has a number of strengths, including its attempt to creative a comprehensive model that is based on the normal brain. However, he and Andresen (2001) criticize the tendency of the theory to collapse all religious paths under the single label of meditation and focus on a limited range of religious experiences such as those found in yoga and Tibetan Buddhism (Newberg, Newberg, & d'Aquili, 1997; d'Aquili & Newberg, 1999, p. 256). They tend to invent vocabulary (e.g., cognitive operators) that is not commonly used in the neuroscience field and sometimes fail to adequately specify constructs. They also seem to be inconsistent at times, for while they argue that it is possible to make universal generalizations about religious experiences (Laughlin et al.,1993), they also argue that it is impossible to generalize between individuals of different levels of experience and different traditions (e.g., 1999, p. 159). Their theory is considered

speculative, because while it is mostly consistent with available data, there are few directly relevant studies, and it has not been tested against a competing model. Of course, religious experience is so diverse that it may not be possible to develop a single theory that encompasses all of it (Watts, 2002a). However, the theory does identify possible mechanisms for the perception of unitary states, weakening arguments by psychologists like Jung that such states cannot exist.

Some scholars offer a more general critique of the neuroscience perspective. On a technical level there are a number of problems. For instance, current imaging techniques are often noisy, disrupting the atmosphere needed for spiritual practices. They also lack the resolution and speed to pinpoint activity in small brain structures on a timely basis. So, while neuroimages are often taken to represent the same level of evidence as a photograph, in fact they provide a much more indirect type of data. Thus, the current data do not allow us to draw firm conclusions about the relation between brain states and mental states (Newberg & Iversen, 2003; Roskies, 2008; Farah, 2008). On a practical level, neuroscience findings may help us understand the biological mechanisms behind religious experiences, but they have limited ability to tell us their meaning or how they are integrated into the life of the individual (e.g., Wildman & Brothers, 2002). Finally, there are questionable metaphysical assumptions made by many neuroscientists, for instance that because an experience depends upon neurological mechanisms that it must be due to those mechanisms. That is like saying that our perception of a flower or of a kind action on the part of a friend is "nothing but" neurological activity and that the flower or actions are not real—a position of extreme skepticism that few would endorse. Clearly we need to avoid extreme reductionism that says only biological factors are relevant to understanding religion and embrace a multilevel approach, although extreme reductionism is becoming very fashionable among some neuroscientists (Watts, 2002a; Cacioppo, 2002; Bickle, 2006). There is no such thing as a wholly biological person; for instance, biology constrains culture but does not exist without it. Also, just because a phenomenon is brain based does not mean it does not have spiritual significance (MacIntyre, 1984, p. 161; Saver & Rabin, 1997). This of course does not mean that neuroscience research cannot be valuable and interesting—just that one should be aware of philosophical prejudices that might lead one to overinterpret findings. However, neuroscience explanations are fascinating, even if the neuroscience component of the explanation is of limited relevance or practical importance (Weisberg, Keil, Goodstein, Rawson, & Gray, 2008). Thus, it seems likely that neurobiological investigations of religious or spiritual phenomena will continue.

6.2 Evolutionary Psychology and Religion

The last 20 years have seen the increasing use of evolutionary theory to study religion. On the surface, this seems strange, as scientists or philosophers with an atheistic orientation (e.g., Dawkins, 1987, 1989; Dennett, 2006; Tooby & Cosmides, 2005) and conservative religious writers both see evolutionary theory and religion

as in direct conflict. Although science cannot prove that God does not exist or is uninvolved in the world, some reductionist evolutionary theories seem to offer a kind of natural theology that substitutes evolution for God (Badcock, 2000, p. 17; Buller, 2005, pp. 422–426, 472–479; Cooper, 2007, p. 37). On the other hand, a number of scholars argue that while the reductive materialism and naturalism of some evolutionary thinkers may be incompatible with religion, some readings of theology and evolutionary thought may work well together (Peacocke, 1998; Russell, 1998; Ayala, 1998a; Ruse, 2000; Teo, 2002). In this view, incompatibility between evolutionary theory and religion is due to the personal metaphysical beliefs of the writer that people have "smuggled in and then given an evolutionary gloss" (Ruse, 2001, p. 128). These metaphysical beliefs require additional nonscientific arguments to support them, such as an outmoded positivist view of science which forces people unnecessarily into a conflict model of science and religion (McGrath, 2005, pp. 92, 140).

A full review of evolutionary theory with its problems, successes and challenges is beyond the scope of this book. Here, we will review some fundamentals of evolutionary thought, discuss the primary model in use for its application within psychology, and then discuss its current use in the study of religion.

6.2.1 Basics of Evolutionary Theory

6.2.1.1 Evolution and Selection

Evolution is the change in organisms that takes place over time due to genetic alterations. Like all science, evolutionary thought is built on both empirical observation or "fact" and theory (Goldsmith, 1994, p. 13). Facts would include the fossil record and observations of the evolutionary process that can be made in the laboratory, such as changes in bacteria that make them resistant to antibiotics. For most scientists, there is no doubt that evolution occurs; the debate is over how the process works (Plotkin, 2004, p. 128). The goal of evolutionary theory is to develop explanations of **ultimate cause**, or how the genotypes of organisms came to be the way they are, rather than the explanation of the **proximate cause** behind the development of the phenotype for a particular organism. Ideally, both explanations are necessary and complement each other.

Evolutionary explanations of change require three things. First, there must be a structure of law and constraint that is imposed by the basic laws of physics and biology, as well as requirements of the environment. Second, there must be freedom in the system in the form of novelty and variation. Novelty enters the creative process in several ways (Goldsmith, 1994, pp. 29–30), for instance though genetic changes, which can be produced by (1) mutation or recombination, (2) the movement of genes within populations or between groups known as **gene flow**, and (3) self-organizing processes that occur in complex systems (Barbour, 1998). Other events can also introduce **random drift** into a population, such as the meteor impact that ended the Cretaceous Period and the reign of the dinosaurs. A third and final requirement for changes is that there must be a way of sorting novelty and retaining

helpful features (Ayala, 1998b). In evolutionary theory, this is done by natural selection, the process discovered by Charles Darwin (1809–1882).

In Darwin's original theory, selection referred to the retention of characteristics that helped organisms in the struggle for existence (Darwin, 1872, p. 60). In the modern synthesis of evolutionary theory, however, **natural selection** refers to the retention of characteristics that increase **reproductive fitness** or successful reproduction, for survival is meaningless in evolution unless your genes are passed on. This fitness is of two types, **Darwinian fitness** or the person's own reproductive success and **inclusive fitness**, which includes not only your own reproductive success but also that of your kin (Hamilton, 1964; Burnstein, 2005). The latter kind of fitness brings up the dilemma of **parental investment** (Trivers, 1972), which is that parents want to invest in their offspring to maximize inclusive fitness, but these investments are costly and must be balanced against other needs. An unanswered but controversial question is whether natural selection works solely with regard to individual organisms or might also work at a group level (Sober, 2002).

Darwin believed in a gradual evolutionary process of slow and steady change. This model does not fit easily with observed gaps in the fossil record, so some theorists like Gould (1988) have argued for a punctuated equilibrium model, where periods of stability alternate with rapid progress. Another issue has to do with the direction of the change process. While evolutionary theorists generally avoid the position that evolution is directed or moving toward a particular conclusion (e.g., Dawkins, 1989, p. 13), it seems difficult to deny some kind of directionality, a least a movement toward more complex forms within a range of possibilities established by evolution, a key issue for theological interpretation of the evolutionary process (Stoeger, 1998; Watts, 2002b; cf. Dawkins, 1997).

Earlier writers in **sociobiology** and behavioral ecology (e.g., Wilson, 1975) believed that the selection process could apply to specific behaviors, but today most scholars believe that it is the structures or mental mechanisms that produce behaviors rather than the behaviors themselves that are selected and passed on (Goldsmith, 1994, p. 92; Symons, 1995; Shanahan, 2004, pp. 260–261; Buller, 2005, pp. 50–53; Tooby & Cosmides, 1992, 2005; Batson, 1998). The idea that behaviors could be directly inherited is termed the **sociobiological fallacy** by its opponents. Sociobiology introduces a kind of functional reductionism, where for instance insects' sacrificing each other for the sake of the hive is equivalent to human altruism and is thought by some to be mostly pure speculation. This has led even evolutionary theorists to reject all or part of sociobiological explanations (Lerner & von Eye, 1992; Watts, 2002c, p. 17; Schloss, 2002b). Nevertheless, this type of reasoning can still be found in the professional literature (e.g., Roes & Raymond, 2003).

6.2.1.2 Adaptation

Adaptation is a key concept in evolutionary theory, but it is a confusing word because it has several meanings. In psychology we use the term **adaptive** to describe helpful changes that people make in response to environmental demands. If the temperature

drops, we adapt by putting on a sweater. In evolutionary language, however, an **adaptation** is a characteristic that was selected in the past because it increased the reproductive fitness of an organism—its ability to survive and reproduce. It is of course difficult to determine what is an adaptation because we cannot look at the history that led to the present (Goldsmith, 1994, pp. 32–35) or at the **environment of evolutionary adaptiveness** (**EEA**) in which the adaptation arose. While it is easy to assume that current adaptive qualities originally developed as adaptations, there are many possible exceptions to this. First, a characteristic could be fitness enhancing now but not originally designed for its current role, either because it had a different original purpose or no original purpose at all. Gould and Vrba (1982) call these **exaptations**. They use bird feathers as an example, which are now adaptive because they assist flight but originally appear to have had a thermal regulation function. Another possibility is that something could be a **spandrel**, a necessary by-product of an adaptation that originally had no adaptive value but later found an adaptive function (Gould & Lewontin, 1979). For instance, it is likely that the ability to be a scientist has no adaptive value—it does not increase reproductive fitness—but it is a byproduct of intellectual development that does improve our ability to survive and reproduce. The presence of exaptations and spandrels makes it difficult to determine the original purposes of things by examining their current use, making it hard to develop evolutionary explanations. Also complicating matters is that various adaptations can interact, and organisms can act to modify their environments, changing the context for selection or even producing genetic or anatomic changes, an effect known as the *Baldwin effect* (Buller, 2005, pp. 41–42; Birch, 1998; Barbour, 1998).

Adaptationism and Darwinian pluralism. How does the importance of the natural selection process compare to that of novelty or freedom and constraint in the evolutionary process? While all are necessary and work together (Stoeger, 1998, p. 176), there are debates on which should be considered the primary process. Gould and Lewontin (1979) have argued that constraints such as environmental conditions are often more important or interesting explanations for evolutionary change than selection. This is called **Darwinian pluralism**. Opposed to this is the position that is called **adaptationism** or **Darwinian fundamentalism** (Gould, 1997), the idea that non-selection factors have at most a minor role in evolution. Darwin himself was uncomfortable with adaptationism (Shanahan, 2004, p. 137), and in general the field of evolutionary biology has moved toward a more pluralistic position over the past 20 years (Richardson, 2000).

6.2.1.3 Implications

Metaphysical assumptions. The metaphysical assumptions behind evolutionary theory have been the subject of comment. A number of authors have pointed out that evolutionary theories typically assume a lack of purpose or meaning to the universe (cf. Russell, 1998). The universe is seen as fundamentally a place of struggle for survival in a zero-sum environment of limited resources so that some must win and

others lose (Barrett, Dunbar, & Lycett, 2002, p. 3). Critics argue that the assumption of lack of purpose makes it difficult or impossible to develop categories of value or virtue and, that while it is obvious that struggle exists and that life must be preserved, it is just as easy—perhaps easier—to argue that the universe has a moral order with elements of surplus, generosity, gift, and sacrifice (Hurlbut & Kalanithi, 2001; Ellis, 1998, 2002; Murphy & Ellis, 1996; Happel, 1996). Recognizing this noncompetitive side of life can enhance understanding of our biological condition and embeddedness in the natural world. A view of the universe as more than a struggle also appears to be a primary component in the development of generative individuals (McAdams, 2006, p. 8).

The metaphysical assumption that life is primarily about struggle is particularly problematic when applied to the study of religion. In the traditional adaptationist view, life consists of competing for a share—perhaps as big a share as possible—of limited resources and that when some win others must lose. However, this does not appear to be the situation with religious and spiritual goods. While there is no doubt a competitive factor in some aspects of religion (e.g., only one person can be Pope at a time, although many may wish to do so), religions commonly advertise that the benefits of allegiance and practice are available to all. A competition and limited resources model does not seem to make sense, and an application of such a model to the study of religion seems likely to distort its subject.

6.2.2 Evolutionary Theory in Psychology

Evolutionary theory and psychology have had an uneasy relationship. Early psychologists like Hall were influenced by the theory to take a developmental outlook on human behavior, leading to a tremendous research program with many positive benefits (see Section 7.3.1). On a more negative note, 19th-century figures like Herbert Spencer (1820–1903) and the psychologist Francis Galton (1822–1911) used evolutionary thought to develop **social Darwinism** and ideas about **eugenics**, the improvement of the human species through competition and manipulation of genetics (Plotkin, 2004, p. 43). Spencer in particular used the concept of "survival of the fittest" to justify various social policies that have since been strongly criticized (Badcock, 2000, p. 7). Darwin himself believed that men were intellectually superior to women and proposed an evolutionary explanation for this "fact" (Arnhart, 1998, p. 125). Modern evolutionary theorists are sensitive to this history and have tried to avoid these reductionistic traps.

The latest attempt to apply evolutionary theory in psychology is known as **evolutionary psychology (EP)**. While much of the effort of evolutionary psychologists is devoted to the explanation of sexual behavior (e.g., on rape see Hartung, 1992; Kanin, 1985; Palmer, 1991) or human traits like altruism and morality (Krebs, 2005), some evolutionary psychologists have also attempted to apply a version of evolutionary theory to religious phenomena. This effort has met with a mixed reception, just as critiques or alternative explanations have been proposed

for evolutionary explanations of sexual behavior and morality (e.g., on rape see Lisak & Ivan, 1995; Malamuth & Brown, 1994).

The theoretical manifesto for EP has been given by Tooby and Cosmides (1992, 2005). They have a broad vision for EP, which is that it will provide a unifying theory that will transform the social sciences, which are "descriptive, soft and particularistic into theoretically principled scientific disciplines with genuine predictive and explanatory power" (2005, p. 6). They identify three ideas that they believe are widely held in psychology but are problematic and need to be removed:

1. *The universe is designed with a moral and spiritual order.* They believe that this is untrue because the universe is constructed by nature using the mechanism of natural selection and has no moral or spiritual order or purpose.
2. *Human nature is a blank slate that is quite variable and is aided by a mind that uses general-purpose problem solving mechanisms.* They argue that the mind that is at the center of human nature is made of a collection of domain-specific information-processing mechanisms that are not learned but represent a universal preset human nature.
3. Worst of all, *the value system of the social sciences privileges the different, particular and variable over the uniform, which gives a minimalist view of human nature.* This makes it impossible to discover the invariant natural laws that govern humanity. The social sciences are also infected with holistic thinking, which is thought to be problematic as it makes it difficult or impossible to analyze things in terms of their parts (Badcock, 2000, p. 228).

Several authors have noted that this description is an inaccurate caricature of most work in the social sciences, and Tooby and Cosmides admit this (Tooby & Cosmides, 1992, p. 31). Despite this, EP proposes the following assumptions in their place:

1. *Human nature is a mind that is an information-processing machine.* EP bases its view of human nature on aspects of modern cognitive science. EP sees the mind as central to human nature, as it is the cause of all behavior and bodily regulation. The mind in their view is very much like a computer—it is a set of information-processing devices that regulate behavior in response to information. Like a computer it is composed of thousands of problem-solving machines or **modules** that are evolved adaptations to specific problems, just as a Swiss army knife has many blades for specific functions. This **massive modularity hypothesis** (MMH) is preferred to the idea of the mind as a general-purpose problem solver, as a modular brain may be faster and is perhaps easier to explain within an evolutionary framework. However, more recently, Tooby and Cosmides (2005) have retreated from the position somewhat and speculated that emotions might also be an important part of human nature and aid in information processing.
2. *All aspects of human nature are adaptations produced through natural selection.* EP takes a Darwinian fundamentalist position, arguing that everything in the body has evolved to perform a function through natural selection, although they acknowledge that all behavior is not necessarily functional. In particular, they

dismiss the idea that culture is a source for functional behavior (Buss, 2001). These adaptations form a common human nature that took shape during the EEA of the Pleistocene period (about 1.8 million years ago to about 10,000 BC) when we lived in small groups and followed a hunter-gatherer lifestyle (Cosmides, Tooby, & Barkow, 1992). The adaptations form a developmental program or possibility for development of mental structures that is inherited and which might or might not be realized in everyone (Buller, 2005).

3. *EP can produce a general framework for both explanation and prediction of behavior.* Grantham and Nichols (1999) have noted that there are two general approaches within EP: explanatory and predictive projects. In explanatory projects, one works from an observed function and speculates about its adaptive source. For instance, Boyer argues that the degree of grief we feel about a loss is related to their reproductive potential, so that we feel less loss over the death of an infant or an aged parent than a young child or particularly a teenager, and that a loss of a group member engenders grief because of the loss of information and cooperation (Boyer, 2001, p. 25). In the predictive project, the researcher thinks about problems that our ancestors must have confronted and what solutions must have been necessary to solve them, and then reasons forward about what our minds should be like today.

6.2.2.1 Critical Views

Evolutionary theory certainly offers possible benefits to psychology, and evolutionary theorists have trumpeted its superiority over other models and its ability to put forward a progressive research program (e.g., Buss & Reeve, 2003; Ketelaar & Ellis, 2000; Ellis & Ketelaar, 2000, 2002). It is attractive when it advances our understanding of human nature and aids clinical practice (Hinde, 1991). However, the particular ideas about the mind and evolution embraced by EP have been heavily criticized (cf. Caporael & Brewer, 2000). Some of the key concerns are as follows:

1. *The EP view of the mind based on the massive modularity hypothesis is flawed.* EP calls for hundreds or thousands of modules, but evidence has only been found for the existence of a few. Some of these appear to be the product of both genetic and environmental factors, questioning the EP view that the modules are universal and invariant (Hughes & Plomin, 2000). The MMH also seems inconsistent with what we know about the brain, for instance, its developmental flexibility (Samuels, 2000; Badcock 2000, p. 23; Buller, 2005, pp. 130–137) and the fact that important parts of the brain appear to be multipurpose. Certainly the EP assumption that flexible, general-purpose mechanisms could not have been favored by selection is questionable (Buller, 1999, 2005, pp. 140–160). The computer model of the brain that lies behind the MMH also seems problematic; many things act like computers or have a computational character but are not computers—just because something can be used as a chair or acts like one does not mean it is one (Searle, 1993)!

2. *The fundamentalist view of adaptation taken by EP is flawed.* Extreme or "naive" views of adaptationism are no longer held in evolutionary biology (Freyd & Johnson, 1992; Lloyd & Feldman, 2002), and critics argue that they are certainly not an appropriate basis for an evolutionary psychology. Reducing everything to selection and adaptation is questionable as a scientific theory, because many behaviors cannot be interpreted in this way; instead, it is likely that there are several mechanisms shaping things besides natural selection, and evolution may involve multiple responses to problems. For instance, scholars like Mithen (2000) argue the archaeological evidence suggests that the creation of cultural artifacts, rather than the adaptation process, has stimulated much of recent mental evolution and development. This means that many human abilities are best conceptualized as exaptations or spandrels and that the idea of a single monolithic human nature is questionable (Teo, 2002; cf. Goldsmith, 1994, p. 34; Archer, 2001; Buller, 2005, pp. 14–15; cf. Gould & Lewontin, 1979).
3. *The explanatory and predictive projects as outlined by EP are flawed or overly ambitious.* While the concept of an explanatory project has not been criticized, in practice it has proved difficult, because it is hard to tell whether or not something is an adaptation and thus can become the proper object of an evolutionary explanation (Simpson & Campbell, 2005). The predictive project has met with much broader criticism. Grantham and Nichols (1999) argue that EP underestimates our ability to study psychology outside of the evolutionary framework and overstates the accuracy with which we can make predictions from the past. Many authors including paleontologists (e.g., Mithen, 2000; Cela-Conde, 1998; Cela-Conde & Marty, 1998) argue that our limited knowledge of the EEA reduces the specificity with which evolutionary problems, tasks, and possible adaptations can be ascribed to statements like "get a good mate" or "find food" which are so general as to be of little value. The lack of specificity means that EP explanations can be vague, speculative, and difficult to test. They are theoretical possibilities, not empirical realities (Buller, 2005, pp. 95–110; Thornhill & Thornhill, 1992; Shapiro, 1999; Bering, 2004; Teo, 2002; Batson, 1998). The dilemma for EP is that to the extent the EEA and current environment are different, it is difficult to establish meaningful comparisons, but if they are the same an evolutionary explanation adds nothing to hypotheses we can gather by traditional social science research (cf. Davies, 1999).
4. *EP theories do not meet traditional scientific standards for verification or falsifiability.* Since the evolutionary situation cannot be directly observed, many have accused EP theories of being unfalsifiable and have dismissed them as fairy tales (e.g., Girard, 1987, p. 89). Some EP scholars deny this (e.g., Buss, 1995; Kirkpatrick, 2005, pp. 180–182) and argue that it is possible to generate specific falsifiable hypotheses within the evolutionary paradigm, although it is impossible to test the paradigm as a whole. This is a questionable strategy, as it admits that it is impossible to test evolutionary explanations against competing views such as cultural ones. Other EP scholars (e.g., Ketelaar & Ellis, 2000) admit that evolutionary explanations are not falsifiable but say that this is not a problem, because EP operates within a Lakatosian model of science

(see Section 2.4.2), where the criteria of success for a given hypothesis are compatibility with the core beliefs and the progressive, heuristic nature of the program. In this view, demonstrating that an explanation is "speculative but plausible" (e.g., Murphy & Stich, 2000, pp. 70–71) or offering examples of where it might be true (e.g., Buss, 2001) are considered adequate verification. This is a misreading of Lakatos (Caporael & Brewer, 2000) and has raised many concerns, even within the EP community, that there are lots of theories but little testing against the data (e.g., Wynn, 2000; Hurlbut & Kalanithi, 2001). Richardson (2000) has commented that without such testing, there is no way of knowing whether EP theories are any better than Ptolemy's theory of epicycles. The strategy of claiming that EP methods do not need falsification is also risky, as EP dismisses other theories such as creation science because they are not falsifiable (Buss, 1995).

5. *EP theories contain many unrecognized and unsupported metaphysical positions.* Given the strong presence of positivist metaphysics within psychology (see Section 2.4.3), it is not surprising that the EP takes a view of evolutionary theory that best fits within the positivist framework. EP explanations are marked by atomism, simplistic reduction of phenomena to a basic cause (such as adaptation) and rejection of holism. While these stances are defensible in certain situations, we have seen that their broad use has many disadvantages. A second metaphysical position implicit in EP is that the purpose of life is reproductive fitness. However, many would argue that quality of life and human flourishing are important goals that are not reducible to reproductive fitness. This is a particularly important issue if evolutionary psychology is to be applied to religion, where spiritual advancement is considered a central goal. Finally, some express concerns about the metaphysical and ethical implications of EP. For instance, the evolutionary theorist Hagen, after providing a spirited defense of EP against moral objections, closes an article on the following note:

> "More worrisome, EP challenges the foundations of crucial enlightenment values, values we undermine at our peril. Perhaps the mix of secular and religious values on which the priceless institutions of democracy rest are like a tablecloth that can be quickly yanked out, leaving everything standing on some solid, though as yet unknown, base. But I wouldn't bet on it. We are at a crossroads. A vibrant science of human thought and behavior must always be able to question its own premises and is thus utterly unsuited to be that solid base. Yet, if we discard the secular, quasiscientific notion of the blank slate, or even subject it to genuine scientific scrutiny, we may threaten institutions far more valuable than a science of human nature. The vital question is not, as most critics seem to think, whether EP is correct, but whether any real science of the brain is prudent" (Hagen, 2005, p. 171).

6.2.3 Evolutionary Psychology of Religion

Evolutionary psychologists conceptualize religion as a solution to adaptive problems (Buss, 2002). This can be done in a couple of ways. First, religion can be considered as an adaptation, an ability or strategy that conveyed some advantage and

so enhanced reproductive fitness. This is a sociobiological conception of religion (e.g., Wilson, 1975; Broom, 2003), which has been rejected by most writers, since there is little or no evidence that specific behavior like religious ones can function as adaptations and be inherited (e.g., Hinde, 2002). Second, religion can be seen as related to human cognitive capacities and other abilities that are produced by evolution, so it is the abilities and not religion itself that is the evolutionary product (e.g., Clement, 2003). This is the stance taken by most contemporary investigators in the psychology of religion, as well as by anthropologists and cognitive scientists working to develop a cognitive science of religion.

6.2.3.1 Psychology of Religion and Evolutionary Thought

In psychology, the leading advocate for an evolutionary approach to the psychology of religion is Lee Kirkpatrick (1999, 2005). Kirkpatrick begins from the standard EP model and argues that religion is not an adaptation but built on other evolved mechanisms and that it acts along with the rest of our evolved nature (cf. Bering, 2004). Kirkpatrick believes that evolutionary theory will provide an overall paradigm for psychology of religion research that will help us understand the universality that lies under "superficial" variability (2005, p. 184). While Kirkpatrick does not offer a comprehensive evolutionary theory of religion, he points out a number of places where an evolutionary perspective may help us understand factors that are related to religion such as interpersonal attachment (see Section 8.2), the role of status, dominance or power figures, and our understanding of altruism, cooperation, and outgroup behavior. Many of Kirkpatrick's suggestions are interesting, although his broad adoption of the EP model brings with it the many problems we have discussed above. It is also unclear how much will be gained by the use of EP. Kirkpatrick notes that bringing an evolutionary perspective into his attachment research "does not fundamentally change my theory of attachment and religion in any way" (2005, p. 189) and that it is difficult to empirically test evolutionary explanations against standard attachment ones.

6.2.3.2 Cognitive Science of Religion and Evolutionary Thought

In the **cognitive science of religion** (CSR), scholars take insights from anthropology, evolutionary theory, or cognitive science and apply them to the understanding of religious thinking. The general thesis of CSR is that human thought processes have a certain character that leads us to make meaning or think religiously and to do so in certain ways (Klinger, 1998). While there are many parallels between CSR and EP, in practice CSR scholars vary in terms of their allegiance to specifics of the EP model and the amount they utilize evolutionary thinking in their theories. The hope of many CSR scholars is to "free religion from the realm of metaphysical speculation and to anchor it instead in the empirical" while respecting it and avoiding unnecessary reductionism (Andresen, 2001, p. 1), although some writers embrace reductionist explanations more than others.

In CSR theory, religion is considered to be a spandrel or exaptation based on the standard set of evolved cognitive capacities shared by all humans. It rejects the position of Otto (see Section 4.3.3) that religion is a phenomenon that is *sui generis* with unique characteristics (Pyysiainen, 2002; cf. Murphy, 1998b). Rather, CSR scholars generally believe that religious thinking is built on the tendency of our minds to detect the presence of persons and agents. When inexplicable events occur, it is cognitively easy and natural to attribute them to agents because it allows us to use our normal thinking about the category "person" to understand what happened (Boyer, 2001). However, these agents must have abilities that violate our expectations of the laws of nature so that the agent has additional supernatural qualities. Ideas that have both natural and supernatural aspects are referred to as **minimally counterintuitive ideas**, and CSR scholars argue that our minds find them attractive because they provide the opportunity for imaginative stories with many different kinds of inferences. Since they are attractive they tend to be transmitted from person to person. Explanations based on supernatural agents and minimally counterintuitive ideas constitute a **cognitive optimum position** that is a natural way of thought and is described in theories like those of Pascal Boyer and Harvey Whitehouse (Day, 2005; see e.g., Whitehouse, 2004a, 2004b). The cognitive optimum position is personalistic and utilizes the representational and attributional functions of the mind. This is in contrast to science, which offers mechanistic views of the world that are also counter-intuitive but non-personalistic (Pyysiainen, 2001a, pp. 197–228).

Stewart Guthrie and anthropomorphism. Guthrie (1993, 2001) has argued that the cognitive optimum position for humans is one of *anthropomorphism*, the attribution of personhood and agency to non-agentic phenomena. Barrett (1998, 1999; Barrett & Keil, 1996) argues that this is because it provides a quick and easy way for us to think about certain topics. He draws on cognitive research to note that the brain processes information in two ways: a fast mode that is intuitive and narrative in form, and a slower mode that is less intuitive, more complex and theological. In research with Hindu subjects, Barrett found that anthropomorphism was much more common in narrative than in theological descriptions, suggesting that one reason for anthropomorphism is that categories like "agent" are a quick and efficient way to understand God and conceptualize religious ideas. However, he notes that Guthrie's thesis that anthropomorphism is a general cognitive bias still needs empirical support.

Pascal Boyer and naturalized religion. While some CSR theorists have tried to pursue non-reductionistic strategies, others like Boyer (1994, 2001, 2005) have used the cognitive optimum position as a tool to produce reductive naturalist accounts of religion. For Boyer, an explanation of religion need not be of any humanistic or practical interest, but the focus should be on reducing diversity to develop a parsimonious account of general mechanisms; his final account of "The Full History of All Religion (Ever)" occupies only 2–1/2 pages (2001, pp. 326–328)! His focus is on the question of why anyone would hold religious ideas, which he sees as illogical, of no straightforward adaptive value, and often costly to the people who hold them and to others. Given his reductive naturalist position his answer is not

surprising: he finds them to be a natural function of the general operations of the human mind rather than some special ideas and practices developed by religious people, and they are transmitted because they follow the cognitive optimum position (cf. Boyer & Ramble, 2001). This naturalness explains "the dogged pursuit of the paranormal and the miraculous" (Boyer, 2001, p. 76), rather than supposing that the explanations and rituals of religion have any actual value as in providing meaning, purpose, or deliverance from mortality.

Boyer's work has met with increasing criticism from other CSR scholars. Many object to his reductionistic labeling of many things as counterintuitive or supernatural and his implicit scientism that discounts other approaches to the study of religion (Pyysiainen, 2002). Hinde (2005) has challenged a number of specific features of the theory, including its focus on a narrowly defined set of cognitive characteristics and standards of rationality and its exclusion of emotion and religious experience. Bering (2004) also notes that while Boyer may not see a connection between religion and issues of immortality and meaning, many others find the connection extremely important and thus a vital part of any understanding of religion. Some scholars find aspects of his theory highly speculative (Pyysiainen, 2001a, p. 233) and question the testability of the theory or the extent to which it is congruent with available evidence (Whitehouse, 2004a, p. 79).

Harvey Whitehouse and modes of religiosity. Whitehouse has worked to extend the work of Boyer by trying to create a testable theory of religious transmission that goes beyond the narrow range of phenomena considered in Boyer's theory (Day, 2005; Whitehouse, 2004a, 2005). Like Boyer, Whitehouse defines religion in terms of beliefs and actions that relate to a supernatural agency, and his primary interest is in how religious beliefs are transmitted. However, he also rejects Boyer's view of religion as an unconscious process, which he sees as limiting the explanatory power of a theory. Instead, Whitehouse argues for a broader layered approach that takes seriously the explicit statements people make about their beliefs, because they have real motivational salience and thus cannot be ignored. He also widens the focus of his model and is interested in the context that constrains religious concepts and practices and acts as a filter or motivator for religious transmission.

Whitehouse is best known for his **modes theory** of religious transmission. He believes that methods of religious transmission tend to cluster in combinations called *attractor positions*, rather than follow a rigid set of lawlike rules. The cognitive optimal position is one attractor position. However, many religious things that are valued are not cognitively optimum. They are more conceptually dense and may be transmitted by methods that cluster around different attractor positions or *modes.* Like the cognitive optimal position, these modes provide ways for people to remember and motivations for passing on teaching.

Whitehouse has identified two modes of religious transmission. The *doctrinal mode* is found in complex thought as is typically present in large religious communities. Transmission in the doctrinal mode involves calm, ritualized, routine, and automatic repetition. This need for repetition makes the doctrinal mode very labor intensive, and it must balance problems of tedium in repetition against the needs of the priestly hierarchy to transmit doctrine. In the more ancient *imagistic mode*,

which involves simple thoughts and small groups, transmission is oriented around emotionally intense, seldom-performed practices. In the Christian tradition, weekly worship services might be examples of the doctrinal religious mode, while ceremonies structured around baptism or conversion could be more imagistic. Transmission can trigger an extended search for the meaning of the experience that requires conscious thought and sometimes the help of experienced elders. The two modes of Whitehouse invite comparison with the fast/implicit and slow/complex processing modes of Barrett, suggesting a dual process mode of religious cognition (Mailey, 2004; Tremlin, 2005).

Almost all aspects of the modes theory have been challenged, including its focus on only certain aspects of religion, and problems with testability and measurement. A key criticism revolves around whether one can categorize religions as doctrinal or imagistic, as all religions seem to have elements of both (Laidlaw, 2004a, 2004b; Bloch, 2004; Whitehouse, 2004b; Pyysiainen, 2005). Some religious groups do not seem to fit well within the model. For instance, in American evangelicalism, repetition is designed to increase relevance more than to remind, and the movement as a whole gets energy from individual emotional experiences rather than small groups (Malley, 2004). Boyer (2005) has criticized the theory for its descriptive quality and lack of causal explanation.

6.2.4 Positives, Problems, and Prospects

There is no question that evolutionary theory is a powerful tool that has advanced our knowledge of the living world. It also seems likely that despite the history of failed attempts such as eugenics and sociobiology, further efforts will be made to apply evolutionary thought in psychology. We will probably learn valuable things from this, particularly as it is applied to areas of psychology closely related to reproductive fitness.

However, there are problems. We have already seen that general evolutionary theory contains metaphysical assumptions about the nature of human life that are quite limiting and that there are significant methodological and metaphysical limitations inherent in the current EP model. Some of the same problems may apply to CSR. While the goal of CSR is to bring religion out of the realm of metaphysical speculation, CSR like any other approach in science, has metaphysical presuppositions that need to be examined, understood, and critiqued. In particular, it is important to see how reductionism and naturalism influence this work.

6.2.4.1 Reductionism

As we noted earlier (see Section 2.1.2), reductionism is a natural part of science and of our daily way of looking at the world. However, EP and CSR often pursue it in ways that are unwarranted or unhelpful, particularly with regard to the study of religion.

1. EP engages in *methodological reductionism* by attempting to explain everything in terms of behaviors or thoughts that enhance reproductive fitness (cf. Kirkpatrick, 2005, pp. 161–163). This means that things like emotion, religious experience, or consciousness are ignored as are the broad effects of these things beyond fitness enhancement. It gives the theories something of a passive and atomistic quality that ignores holistic processes and the effects of human agency (Hinde, 2005; Pyysiainen, 2001b).
2. EP follows a strict *causal reductionism* by assuming that cognitive and evolutionary processes affect religion but not the reverse. This neglects a basic principle of evolutionary biology that context and environment—including cultural and religious environment—can affect the development of human characteristics and abilities (Jensen, 2002; Day, 2005).
3. Some EP and CSR authors seem to engage in *ontological reductionism* by assuming that if religious capacities have evolved and make use of common cognitive abilities, then religion is not unique and is nothing but a product of evolution. These are assumptions, as it is perfectly possible for religion to make use of common cognitive abilities but still be unique and have truth value (Watts, 2002b; Elkind, 1970).

6.2.4.2 Naturalism and Scientism

Reductive forms of naturalism and scientism also show up in EP and some versions of CSR. *Reductive naturalism* appears as **abstractionism**, an assumption that the general and abstract is of greater worth or more real than the particular and that science or nonscience approaches that embrace the particular are worthless. This is problematic for the study of religion because (a) examination of particular, exceptional religious persons offers valuable information about religion that cannot be gained by studying group averages, and (b) religion cannot be understood apart from transcendence, which typically manifests itself in the different rather than the uniform. *Positivistic scientism* follows in part from reductive naturalism when science or non-science approaches that give attention to the particular are deemed worthless or harmful. It appears in the assumption that anyone who criticizes details of evolutionary and EP approaches must be unscientific and resistant to change (Day, 2005). It also is apparent in the tendency of EP and some CSR authors to overstate findings and understate possibilities for other models, a problem which is compounded by a worrying lack of empirical data (Watts, 2003). These positivistic attitudes serve to shield EP and CSR from dialogue, criticism, and verification, thus hindering their ability to achieve true knowledge of their subject.

All of these forms of reductionism and naturalism involve metaphysical assumptions that are almost always left unstated and unsupported. The extent to which they affect various theories in CSR (or EP) varies. Whitehouse, for instance, seems to make an effort to avoid unnecessary reductionism, while writers like Boyer embrace it with its attendant problems. The extent to which EP and CSR can make genuine contributions to the study of religion and spirituality will depend on their ability

to make appropriate use of reductionistic strategies and to understand the limitations an evolutionary metaphysical position places on their ability to understand religion. It seems likely that complex behaviors like altruism or religion cannot be understood simply within an evolutionary framework but require insights from other models and disciplines as well (Schloss, 2002a).

Above all, the presence of biological and evolutionary explanations of religion should not be taken as a criticism of either the truth or social value of religious traditions. As the evolutionary theorist Broom (2003, p. 29) notes:

> The existence of a biological explanation does not devalue spirituality. It may well encourage people to be a part of a religion because they understand it and its benefits better. Writers who criticize and denigrate religion generally pick on what are actually rather peripheral structures and rituals, apparently without appreciating the central tenants. Some general statements by evolutionary biologists, see for example Dawkins (1993), such as 'religion is just like a computer virus' are bad science and indicate a failure to understand either evolutionary mechanisms or the complexities of organisation of societies.

6.3 Postmodern Perspectives, Psychology, and Religion

One of the most significant intellectual and cultural changes of the later 20th century was a move away from what is known as **modernism**. This is a worldview that formed as a result of the developments from the Renaissance (late 15th and 16th century), and the Protestant Reformation (16th century), as well as the rise of science and the Enlightenment (late 17th to 18th century). The modernist worldview emphasizes the universality of truth and the centrality of the individual who stands apart from the world and others; it forms that basis of much scientific philosophy, including positivism, and helps to drive the increasing technification of our culture. In recent years, this worldview has come under criticism, and some scholars have abandoned all or part of it in favor of what is called a late modern or **postmodern** worldview. In this section, we will consider details of these paradigms and possible applications of postmodernism to the psychology and religion dialogue.

6.3.1 Modernism and Postmodern Critique

6.3.1.1 Basic Issues

Ideas of Truth. The classical modernist position on truth is that it is universal and can be discovered not through tradition but by procedures of inquiry, leading to a general theory or **metanarrative** of the world and existence. This idea of truth and knowledge is very congruent with positivism but is rejected by postmodernists in a couple of ways. First, postmodernists reject the possibility of metanarratives (Lyotard, 1984), because they believe all truth exists within a particular cultural or historical context and for a particular purpose. In this view, what is true for people

in one culture may not be true for those from a different tradition or cultural background (MacIntyre, 1988; Ratner, 1989). Since truth is dependent on social and communal context, knowledge can be viewed as a product of **social construction** (cf. Berger & Luckmann, 1966; Gergen, 1999). In extreme statements of this position, postmodernists seem to argue that there is no fixed truth at all (e.g., Gergen, 1994, p. 79), a position at odds with that traditionally taken by religious traditions (Rizzuto, 2005). Second, postmodernists reject the idea that more knowledge will necessarily result in human progress. Rather, since knowledge is socially constructed, it is subject to political and economic processes and may be used as a tool for power and oppression. Picking apart this darker underside of human inquiry is a primary goal of **deconstructionist** critiques of knowledge. For instance, writers like Foucault (1965) and Cushman (1995) argue that economics and the need for social control have been primary factors in the medicalization of mental illness and deviant behavior (cf. Section 10.3.1). This analysis of hidden structures of power or oppression is a key agenda item for much postmodernist work, although sometimes this has been taken to excess. Deconstructionism in the hands of a writer like Foucault is primarily destructive, pointing out flaws in the current system, while other writers like Alasdair Macintyre also offer constructive alternatives (Carrette, 2000; Doniger, 2000).

Centrality of the individual. A second critical component of the modernist paradigm is its view of the human person as an isolated, autonomous individual—what Taylor (1989) has called a "punctual self." This can be seen in positivist views of the human person, and also surprisingly in some humanistic and transpersonal accounts like that of Maslow (1970, pp. 194–199). Since postmodernists believe that the individual cannot be understood apart from the social and historical context within which they live, they often take a relational approach to understanding the person (e.g., Balswick, King, & Reimer, 2005; Evans, 2004). This relational view is part of a broader "relational turn" found in contemporary Christian theology, as well as social science and humanities disciplines. In a **relational ontology** or approach, since each person has a unique history and stands in the center of multiple and perhaps contradictory relationships and contexts (de Certeau, 1984, p. xi), each person is *unique* and any understanding of the human person must encompass that uniqueness. In the traditional modernist view, the *typical* is what is important and the focus of attention (Taylor, 1989, p. 209), while uniqueness presents a problem for the model to be overcome by a better model with more variables, improved measurement techniques, or at last resort by simply calling it "error" and dismissing it.

Spectator vs. Actor. Modernist views of persons tend to treat them as detached observers controlled by the forces of natural law, lacking free will and agency. Postmodernists, on the other hand, see people and societies as agents who are active in constructing themselves and their world. This view of the person as active agent fits well with traditional Christian views of the soul as the center of action; it also implies that a view of human behavior will contain within itself an ethical perspective on how action may be evaluated (Happel, 2002; Thomas, 1998, I q 76 a3, q77 a1; Talbot, 1997).

Critical stance toward science. Many postmodernists are ambivalent about aspects of scientific approaches to knowledge and problem solving. They point out:

1. While science portrays itself as the means to find unshakable and objective truth, in fact current scientific theories frequently make contradictory claims, and truth is established only to find out later that it is either partial or false. Total objectivity in science is also impossible, for experiments and interpretation of data are determined by theory, which is partly imaginative opinion that can overwhelm facts. Also, interest groups and the profit motive can affect the conduct and application of scientific studies (Hauke, 2000, pp. 237–239).
2. Science promotes technological solutions that can have positive effects, but they also carry with them threats like weapons of mass destruction or global warming. It also promotes a view in which nature is attacked, and things are stripped of meaning and value, becoming just resources and products for consumption (Polkinghorne, 2004, pp. 25–26, 40–41).
3. Science promotes the values of efficiency and control and with them the idea that decisions should be made by expert managers, who are morally neutral authorities on their subject and able to effectively solve problems. However, the values of efficiency and control are not morally neutral, and the knowledge needed for effective control of problems often does not exist, so that the decisions made by experts frequently are just an exercise of personal will or preference (MacIntyre, 1984, pp. 74–77).

Critical stance toward universalism in religious studies. Postmodernists have challenged early 20th-century perennialist thought that tended to see all religions as similar to each other. They argue that such as position pays insufficient attention to differences and the context of belief and practice, and that such views are strongly influenced not by the facts but by the modernist presumptions of the scholars doing the work (Holdrege, 2000; cf. e.g., Tyler, 1986; Rabinow, 1986; Ray, 2000). In this view, religions need to be understood on their own terms, rather than as imperfect examples of some kind of universal phenomenon. Postmodernists have also pointed out the effects of culture on the psychology of the individual (e.g., Stigler, Shweder, & Hendt, 1990), suggesting that relationships between psychology and religion are not universal but are specific to a particular cultural setting. This critique has been quite influential, so many researchers are now including cultural considerations in their theory and research (Vande Kemp, 1999; cf. Section 4.4).

Importance of culture and relationality. Since postmodernists believe that reality is constructed by the individual, their explanations of human behavior focus on systems that make construction possible. While Kant believed that universal thought structures lay behind the formation of knowledge (see Section 2.2.3), postmodernists argue that culture is a primary tool in this process. The beliefs and practices that are part of a given culture are thought to influence us in many ways, for instance, in how mental illness is defined and conceptualized (e.g., Foucault, 1976, pp. 60–88).

6.3.1.2 Effects of Postmodernism

Levels of adoption. Although the dominance of positivism in psychology has made it resistant to ideas that question the modernist paradigm, postmodern influence in the discipline has been increasing. It is particularly noticeable in the fields of psychotherapy and family therapy (e.g., Michael White), psychoanalysis (e.g., Steven Mitchell), cognitive psychology (e.g., Jerome Bruner), developmental psychology (e.g., Richard Shweder), personality (e.g., Dan McAdams), and social psychology. It also has influenced later versions of feminist theory and theology (Chopp, 1997; Keller, 1997). Psychologists influenced by postmodernism do not necessarily reject every aspect of modernism and adopt all the postmodern alternatives. In fact, mixtures of ideas are common, which make it inappropriate to issue blanket assessments of postmodern influence; some scholars even refuse to use the term postmodern, preferring late modern or some variation as an alternative. An example of this in psychology would be the work of Gergen, who has adopted constructionist views of truth but retained much of modernist individualism. The result is a radical position of individualistic relativism, where each person develops fragmented or "saturated" selves and is free to have multiple identities and constructions of reality to suit the needs of different situations (Gergen, 1991). This view has been rejected by other postmodernists with a more relational stance (e.g., Balswick et al., 2005) as espousing **relativism**, the idea that there is no truth that can be discovered. Such a view makes it difficult to develop a coherent concept of moral action (Baumeister, 1998). A more moderate position is that of **postfoundationalism** (e.g., Godfrey, 2006), which argues that one can move toward increasingly better views of the world but that dialogue between traditions provides a crucial critical perspective on one's beliefs which assists in the process. This view fits well with **critical realist** views of science (see Section 2.5.4).

Development of postmodern alternatives. Postmodern thought not only offers a critique of modernist presuppositions but also an alternative strategy for inquiry and a different understanding of the human person. This is developed in three ways: (1) a hermeneutic approach to knowledge, (2) a narrative understanding of how we look at the world and construct ourselves, and (3) a consideration of everyday practices and practical reasoning.

6.3.2 Hermeneutics and the Postmodern Approach to Knowledge

H**ermeneutics** is a theory about how we interpret meaning in discourse and actions (Ricoeur, 1981, p. 43). In a hermeneutic psychology, what is important about life is not a series of factual events but the meaning that is attached to those events. In this view, it is believed that statements and events can be seen in multiple ways and so must be interpreted (Crowe, 2005; Bruner, 1991). Unlike the traditional positivist approach, hermeneutics acknowledges that interpretation cannot occur in a vacuum. Any statement or action, even in the physical sciences, is made with

reference to an observational frame that forms a **pre-understanding** or context from which interpretation proceeds (Ellis & Stoeger, 1996; Gadamer, 1989). In the human realm, the context for understanding statements or actions includes (1) the personal worlds and history of the actor/speaker and the interpreter, and (2) any larger context within which the action took place or the thought was expressed, including the beliefs, current situation, and history of larger groups to which the actor/speaker and interpreter belong. The interpretive process occurs when the discourse or action we seek to interpret interacts with our personal and global contexts to from a new insight or understanding, which in turn alters the beliefs that form the context for interpretation. This dialectical or back-and-forth process where the speaker/actor and interpreter affect each other and their interpretive frameworks is sometimes called the **hermeneutic circle** (Ricoeur, 1974, p. 87, 1976, 1981, p. 93, 1984, pp. 46–77, 1995, p. 240). This dialogical process can be used as a model for understanding human behavior and action. It can also be used as a framework for conversation between disciplines, such as between religion and science (Browning, 2002) (Fig. 6.1).

Hermeneutics questions traditional psychological explanations of action that emphasize rationality and logical rules (e.g., Piaget and Kohlberg, see Section 7.4) or empirical explanations that aim at prediction and control through formulation of universal causal laws. These are thought to oversimplify and assume that human systems can be described in the same way as physical ones. Instead, hermeneutics offers a framework that escapes this kind of reductive naturalism (Richardson, 2006). In the hermeneutic view, action always has a holistic character and can only be understood by understanding the meaning it has in the specific context and situation

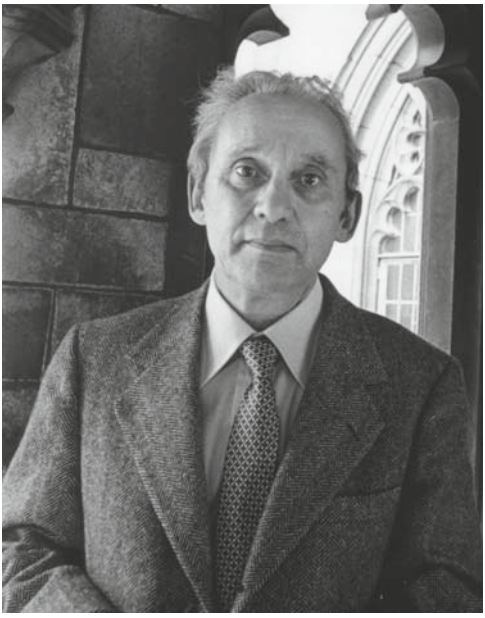

Fig. 6.1 *Paul Ricoeur.* One of the most important French philosophers of the 20th century, he brought a sophisticated and sympathetic understanding of psychology and theology to his work on hermeneutics and narrative. Photo courtesy of University of Chicago

where it occurs. Since this is constantly changing and always somewhat unique, timeless ahistorical laws cannot adequately describe human action, and other formats such as narrative may be required (Packer, 1985, 1988; Polkinghorne, 2004, pp. 77–79). Thus the hermeneutic or interpretive approaches to religion within psychology are often seen as at odds with traditional empirical methods (Luyten & Corveleyn, 2007), although they also can be seen as complementary to each other. Hermeneutic approaches have become increasingly popular in recent years, particularly in the field of pastoral care (Schweitzer & Mette, 1999).

6.3.3 Narrative Aspects of Knowledge and Self

As we remarked before, postmodernists are interested in the lived experience of the human person and feel that accounts—scientific or otherwise—that leave this out are incomplete. This means that explanations must deal with *time*, because the temporal character of life is one of its most important attributes. Postmodern theorists view narrative as the best way for us to understand this aspect of existence (Ricoeur, 1984, p. 3; Bruner, 1991, p. 4). They accept the thesis (e.g., Arendt, 1998) that a characteristic of the human person is that their life comprises events and actions that have enduring effects and are put into story form. By dealing with action and the intensions of actors in the story, narrative provides explanations for why things happen.

The nature of narrative. Narrative is both a kind of discourse and a way of thinking (Bruner, 1991). Narrative begins with action—isolated episodes of practical action or more deliberative acts—and through the creative work of **emplotment** that weaves actions and characters together into a coherent story or **narrative**. Narratives thus include **mimesis** or representations and schemas of action that establish concordance among a collection of conflicting themes and events. This struggle to establish coherence is at the core of authentic experience. Emplotment in narrative accomplishes this task by (1) showing the relation between individual events and story as a whole; (2) bringing together heterogeneous elements like circumstances, agents, or goals; and (3) providing a temporal unity that overcomes discordance. This unity gives meaning to the story, helping us to understand past events and allowing us to picture ways we might pursue future goals; narrative thus can lead to action (Polkinghorne, 1988; de Certeau, 1984, pp. 70–79). Narrative also includes an ethical component, revealing character by connecting individuals to actions and their consequences. The specific emplotment we develop depends on several things: the events that happen, their temporal quality or relationship, and our interpretation of actions by others and ourselves. It also depends on the kinds of plots or patterns that we expect to see in events. These expected patterns form a set of beliefs that is a pre-understanding to our construction of narrative, giving the process of emplotment a hermeneutic character (Ricoeur, 1984, pp. 56–66; Bruner, 1991). Narrative manages to find patterns, but leaves room for the uniqueness of the individual human story.

Narrative and the self. Ricoeur (1992) believes that we construct our personal identity by building narratives about ourselves through a dialectical interchange between self and others. This **narrative identity** has three aspects. First is the experience of physical sameness based on our body. Second is character or lasting dispositions found in habits or identifications such as values or ideals that we gain from others. Third is self-constancy, the keeping of one's word to act in particular ways and is an ethical component of identity. The loss of any of these threatens identity; fragmentation may result, as when we form multiple self-narratives for presentation to different audiences (Downing, 1998; Day, 1993).

Narratives help us understand or form our identity in several ways. Because they present material in a temporal framework, they help convey that aspect of our experience (cf. Ricoeur, 1995, p. 114). The emplotment of action helps link discordant events into a common framework. Stories draw connections between intentions, roles, actions, and outcome that help us reflect upon and understand ourselves and our values or goals. The story helps us to see and pull together different fragmented and conflicting parts of our lives, bringing them to a conclusion that combines diversity, discontinuity, and instability with permanence. It thus provides a unifying force to our identity (Ricoeur, 1995, pp. 140–166; MacIntyre, 1984, pp. 217–219). It can also highlight specific aspects of identity, showing for instance how self-constancy can be maintained in the face of challenges to one's character and values. Finally, narrative allows us to not only consolidate our sense of self but also to try out innovative and imaginative possibilities through "what-if" kinds of stories. However, narrative does not always succeed in bringing harmony, as in the case of suffering, when a story may be tellable only as a "tragic" narrative that articulates an insoluble conflict (Ricoeur, 1992, p. 243).

Narrative and religion. Ricoeur has also written about narrative and hermeneutics from a theological perspective. Since narrative allows us to think about lived experience, it can also help to articulate religious experience and meaning (Ricoeur, 1995; Polkinghorne, 2004, p. 135). A key aspect of religious experience in narrative is when our story is disrupted by **limit situations**, either positive or negative (see Section 1.2.1). Narratives have *expressive power*, allowing us to voice our deep struggles and feelings in such situations. They also have *transformational power* in that they move a person from a beginning to an end. In the Christian view, religious narratives also tell stories about a God who is an actor in history, an ethical god who keeps faith, and whose divine narrative intertwines with human ones. These narratives provide ways of expressing or understanding religious meaning as it unfolds in the experience of the individual (Crowe, 2005). In some cases, these narratives may have a powerful role for the Other (e.g., God) who has a "face" or presence that makes special demands upon us (Levinas, 1998).

Religious narratives can provide a foundational identity for a people or a community attempting to maintain a religious life (Ricoeur, 1995; Hopewell, 1987), and an analysis of these narratives can advance our understanding of religious individuals and groups (e.g., Bartkowski, 2007). Smart (1996, pp. 133–134) argues that narratives provide a history that helps define both the group and the sacred entities of the religion. These narratives also provide scripts for ritual or

explanations of key doctrines, and links the individual to their past. In Christianity and other religious traditions, the narrative serves to bring assurance from the past; it also connects the person to the future, to hope, and thus to freedom (Moltmann, 1980, pp. 3–12). Ammerman (2003) has analyzed and identified several types of these narratives: autobiographical tales, public stories of groups or institutions, and metanarratives or "paradigms for how stories go." These religious narratives have a special character because they include religious actors, beliefs or concepts, as well as experiences of the sacred. She believes that the decline in US liberal Protestant churches has been due to the abandonment of unique features of the Christian narrative, which erases the boundary between religious communities and the broad secular culture.

6.3.4 The Human Person as Actor

A final common feature of the modern paradigm is the view that human persons are spectators. As spectators, we construct representations of the world, and the part of the human person responsible for this—the mind—becomes our most important feature. We are pictured as passive observers who lack freedom and are at the mercy of nature or social forces that we must fight against and try to control, often unsuccessfully. The brain is viewed as an information-processing machine that constructs these representations (Slife, 1995). Postmodernists, on the other hand, typically have a more active view of the human person as embodied agent who engages in social practices. In their view, relationality—which lies at the heart of religion and spirituality—cannot be understood apart from action, and an analysis of action requires an examination of practices (Loder, 1999). Here the human person is viewed as a person of action rather than an information-processing device.

6.3.4.1 The Actor at Work in Practice

There are a number of definitions of **practices**, a good one for our purposes is that of Frohlich: "the free committed engagement of the human subject in morally significant action" (1993, p. 35). Practices thus involve action that affects others and that is done in service of goals in a particular situation. They are socially established (MacIntyre, 1984, p. 187) and may vary from culture to culture. Some authors see practices as overlearned, "common sense" activities and approaches to problems; they typically operate in the background out of awareness but occasionally need to be supplemented with reflective reasoning (Polkinghorne, 2004, p. 152). Practices also involve what Greek philosophers called **phronesis** or practical reasoning and wisdom, which are deliberations about how to act in the pursuit of good life in a particular situation. This type of reasoning forms an essential part of our religious and spiritual journey (Polkinghorne, 2004, pp. 111–115). Practical reasoning helps us

actively respond to specific and constantly changing real-life circumstances where there are multiple conflicting values.

Practice and practical reasoning are somewhat different from scientific reasoning, which makes them hard to study and appreciate from a scientific point of view. Because practice is focused on action in specific situations, practical reasoning goes beyond the simple, decontextualized application of general rules that science tries to apply (Polkinghorne, 2004; Bruner, 1991; MacIntyre, 1984, pp. 161–162). Furthermore, science tends to look at action as the product of past causes. In contrast, practical action is directed toward specific ends in particular situations, and so to understand it we must be able to capture its goal-directed quality (Howard, Youngs, & Siatczynski, 1989).

In postmodern thought, practical reasoning is seen as superior to scientific thinking when it comes to forming a basis for everyday action. It has a logic that is flexible according to situation and is attentive to individual variability and our relational interdependence with others and our surroundings (de Certeau, 1984, pp. 20–21; Varela, 2001). In this view, scientific descriptions that focus on process miss a full understanding of the thing they try to study. If we take a car apart and understand its pieces, and even if we put it together again and understand how the parts work together, we still do not know how to drive a car in London or understand the meaning of it for the people who do (Bourdieu, 1990, p. 18). Practical knowledge involves "ways of operating" or doing everyday things (de Certeau, 1984, p. xi), a non-propositional knowledge that to be evaluated must be translated into life practice and judged according to its outcome—a position taken many years ago by William James. Spiritual and religious activities can be thought of as these sorts of practices (Wuthnow, 2001; Hefner, 1998).

6.3.4.2 Theories of Practice

A number of writers conceptualize human activity primarily from a practice perspective. Hermeneutic theorists like Ricoeur often have a strong practice element to their theories (Whitehouse, 2000). Another important example of this approach can be found in the work of Pierre Bourdieu (1977, 1990).

The nature of practice. Bourdieu argues that there are three kinds of knowledge of the social world: (1) *phenomenological,* which too uncritically accepts lived experience; (2) *objectivist*, that looks for universal law but ignores issues of meaning, as well as the tremendous diversity and unpredictability in how practices really happen, eluding description by rules; and (3) *practical* knowledge which is found between subjectivism and objectivism. Practical knowledge does not obey a universal law and thus is not accurately studied by classical objective technique. In everyday life, rigid rules do not work because of constantly changing, ambiguous, and uncertain situations. Instead, real practices are based upon *strategies*, as these allow for constant vigilance and adjustment. The practice theorist de Certeau (1984, pp. 35–38) offers a helpful additional distinction between *strategies*, which work within an established system or space and everyday *tactics*, which are heterogeneous popular

practices of those without power that work on the margins and through the loopholes of the established system. In this view, practices can be a product of strategies or function as a tactic.

Practices have a particular temporal character. Good practice cannot be determined ahead of time; it is a matter of the moment, and we only can make a positive judgment after the fact that we acted in the best way possible. One of the keys to practice is its mastery of time, its knowledge of the proper time and tempo for action. Science has trouble grasping practices because it tends to assume that actions are atemporal: an action can be done at any time or context and one done at one time is the same as that done at another. This ignores the fact that the meaning of events is dependent upon the response they elicit. Two acts at different times will typically have different responses and meanings; from this perspective, they are not identical actions even if the same behavior was involved (de Certeau, 1984, p. 54).

The habitus. One of Bourdieu's important contributions is the concept of the *habitus* or "systems of durable, transposable *dispositions*" that generate practices (1977, p 72). These systems are learned early in life and function mostly unconsciously. In Bourdieu's thought, specific practices are generated by a *habitus* in a way that is not rule bound but allows for the development of coherent strategies to help the agent deal with unforeseen circumstances. The *habitus* sets boundaries for what is impossible, possible or probable but allows flexibility so that the individual can accomplish diverse tasks in response to specific situations. Because they circumscribe action without limiting it to specific rules, practices produce statistical regularities but not strictly predictable behavior. They create both a commonsense world that is intelligible and practices of coordination and adjustment that are not necessarily logical but are coherent and economical (1977, pp. 72–88).

6.3.4.3 Critique

Bourdieu's theory has been criticized for containing metaphysical views that seem unnecessary to a theory of practice. For instance, he believes that the dispositions of the *habitus* are all-powerful so that any apparent free will or future orientation in our behavior is an illusion (1977, pp. 73–76). Also, since the *habitus* are really dispositions generated by social class, an individual history is just a specific example of the collective history of a group, or a deviant personal style (1990). Other practice theorists have criticized Bourdieu's concept of *habitus* as something that has not been observed but is needed in order for his theory to work. In addition, although Bourdieu argues against structure and objectivity, one wonders whether his tightly worked out system is able to break free of what he criticizes (de Certeau, 1984, pp. 58–69). A final problem is that Bourdieu seems to think that practices work independently of belief, while others (e.g., Taylor, 2007, pp. 212–214) argue that practices are inseparable from the mode of understanding and the worldview that underlies them.

6.3.5 Evaluation and Critique

In psychology, postmodernism has been more ignored or dismissed as a fad than critiqued due to the dominance of positivism (e.g., Teo & Febbraro, 2002). This is unfortunate, as it has much to offer in terms of identifying limitations in the positivist worldview and suggesting new approaches. Nevertheless, postmodernism has its problems. Many of the objections to postmodernism in the scientific community are due to its perceived antiscientific relativism (Lau, 2002). Extreme versions of postmodernism seem to reject all ideas of truth in favor of skepticism or **nihilism**, which has led scientific critics to call postmodernism a "skepticism that refutes itself," since a position that there is no truth also means that the postmodern position itself is not true (Locke, 2002, p. 458)! These criticisms of extreme postmodernism are well taken; as Terry Cooper notes, "Recognizing the sociohistorical limitations of one's thought does not mean that all thought is of equal value" (Cooper, 2006, p. 214; cf. MacIntyre, 1984, pp. 12–31). Relativism is particularly troubling for the application of psychology in counseling and mental health settings, which implicitly require some kind of authority for defining concepts like "health" and "adaptation" and are expected to talk in terms of goals and means with individuals in counseling (Lee, 2004).

In religious studies, postmodernism has been used to attack any attempt to compare or see common themes among various religious traditions. While this has been positive in that it has sensitized people to the importance of cultural context and differences between traditions, it has also been reductionistic, attempting to explain everything on the basis of culture or power, and has privileged difference over similarity, sometimes unnecessarily. This misses the point that comparisons can be done which increase our understanding of the topic. It also treats cultures and religious traditions as self-contained entities, which particularly in the contemporary world is simply untrue (Patton & Ray, 2000; Doniger, 2000; Eck, 2000; Patton, 2000; Paden, 2000).

Nonetheless, some criticisms seem to miss the point. Postmodernism offers a rich and diverse set of possibilities, some of which are aimed not at a rejection of truth claims but a questioning of crass materialism and a call for a positive attitude toward spirituality and human values (Allen, 2006). Charges that postmodern methods are subject to bias and unreliability (e.g., Haig, 2002) ignore the availability of high-quality qualitative approaches, as well as the bias and validity problems present in traditional methods. The complaint that postmodern emphases like relationality offer nothing new misses the point that while there is nothing new about relationality, current methods do not address it well. Postmodern emphases on plurality have been criticized for introducing too much complication (Kruger, 2002, p. 456), but this simply recognizes the fact that human behavior *is* complicated and psychology must attempt to describe it—a basic task of science (cf. e.g., McAdams, 1996). Nor does postmodern questioning of truth necessarily leave one in a moral vacuum with no possibility of rational discussion, as it opens the possibility for argument and comparison between different approaches to problems (Slife, 2000; Edwards, Ashmore, & Potter, 1995).

Each form of discourse has its own strengths and weaknesses. There is no need to choose, but there is a need to be explicit about our presuppositions and choices and to provide adequate justifications for the ones we make (Dueck & Parsons, 2004). The case of practices suggests that there is an important area of the psychology and religion dialogue that cannot be easily addressed from the modernist frame, positivist or otherwise. Likewise, the modernist frame offers certain advantages that should not be lightly cast aside. An approach that takes advantage of both perspectives will have the best chance to capture human experience.

6.4 Conclusion

Key issue: *The ability of current approaches to facilitate dialogue is dependent upon the theoretical and methodological assumptions of the investigators who employ them.*

Neurobiology, evolutionary psychology, and postmodernism all offer new perspectives that are influencing the psychology and religion dialogue. This influence plays out in different ways. Neurobiology has a long history in psychological studies of religion that is being revitalized by advances in technology and its increasing importance within the larger discipline of psychology. Evolutionary and postmodern influences are less important within psychology but have tremendous potential in the dialogue with religion, particularly because of the impact of postmodernism on other conversation partners in theology and religious studies. Time will tell whether these approaches broaden our perspective. Each of the new strategies can be used selectively, and history suggests that when this is done it has the potential to enrich the conversation between psychology and religion. On the other hand, reductionistic strategies that use a single model to explain everything tend to curtail discussion, a problem that has plagued the field for the past century. The work of Pascal Boyer and Harvey Whitehouse illustrates how two people working within a common framework can either stimulate or close off dialogue through different presuppositions and attitudes toward reductionism. This issue is also prominent in the psychology and religion conversation on development, our next topic.