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IMPLICIT THEISM

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Religion is one of the great human universals and a uniquely difficult phenomenon to explain. Today, as during most (if not all) of human history, just about everyone is a theist who believes in supernatural agents such as gods and souls (Greeley, 1991; Gallup & Linday, 1999; Norris & Inglehart, 2004). Human communities isolated for thousands of years each developed a religious worldview with common elements (Atran, 2002; Tremlin, 2006). Evidence that prehistoric peoples buried flowers and other symbolic items alongside departed group members further testifies to the deep roots of belief in an afterlife (Schwartz, 1998; Hayden, 1993). Yet current accounts of theism, while often compelling, remain largely speculative (for reviews, see Atran, 2002; Wilson, 2002a; Bloom, 2005; Bering, 2006; Dennett, 2006; Tremlin, 2006). This question of ultimate origins (e.g., whether religiosity evolved to address a specific adaptive problem or emerged as a side effect of other evolved human characteristics) is unlikely to be resolved in the foreseeable future.

Rather than to attempt a comprehensive theory of the ultimate origins of religious faith, the present chapter discusses evidence for two classes of empirically supported psychological contributors: *cognitive defaults* and *existential needs*. Cognitive defaults evident in young children predispose children and adults alike to believe in supernatural agents. And religion addresses deep existential issues, for example, the fear of death, that are endemic to the human condition but which materialist philosophies (i.e., belief systems that deny the existence of supernatural forces) have difficulty addressing. Both of these sets of variables exert a profound yet largely implicit (i.e., intuitive, unconscious) influence on the development, content, transmission, and maintenance of religious faith. Theistic

cognition is so deeply ingrained that even atheists, agnostics, and less religious people display implicit responses consistent with religious beliefs.

The implicit roots of theistic cognition help account for its universality. Cultures separated by great distances and natural barriers nevertheless developed shared religious beliefs such as the tendency to attribute to human beings souls that survive physical death. As we will argue in greater depth later, because people intuitively distinguish between intentional agents and physical bodies (Bloom, 2004), and have difficulty mentally simulating their own nonexistence (Bering, 2006), religions across the world include the concept of an immortal soul. Belief systems that essentially characterize humans as machines made of meat violate common intuitions and face difficulties gaining adherents (Bloom, 2004). Universal aspects of how the mind works therefore contribute to certain shared aspects of religious faiths across the world.

Indeed, there are fascinating historical examples of parallel religious beliefs in different cultures that are potentially attributable to basic human cognitive and emotional tendencies. Historians and anthropologists have marveled at the similarities between the cultures of the ancient Mayans and Egyptians, who on separate continents evolved similar rituals aimed at dealing with the existential fear of death endemic to the human condition. Indeed, the vast majority of the world's major religions incorporate beliefs addressing such universal existential needs (Becker, 1973; Bering, 2002a; Greenberg et al., in press).

While properties of mind place limiting conditions on what sorts of moral beliefs may characterize a successful religion, the latitude of potential acceptance is obviously large enough to encompass both the Catholic aversion to material gain and the Protestant conviction that the accumulation of wealth through hard work is a spiritual calling (Weber, 1904/1958; Sanchez-Burks, 2002, 2005). In human populations developing based on complex and interacting geographic, ecological, economic, and historical factors, cultural beliefs will ultimately reach different "equilibriums" (Cohen, 2001). In other words, human communities will reach different shared understandings about what to think, how to behave, and expectations about how others will behave and react to one's own actions. Once reached, a cultural equilibrium is perpetuated by the mutually contingent judgments and actions of the individual members of that culture. For example, in historically Protestant cultures characterized by an enhanced commitment to the merit principle, both employers and job applicants know that engaging in nepotistic hiring practices can result in costs to one's social reputation. As a result, decision makers in such cultures are comparatively reluctant to hire incompetent friends and relatives, which helps maintain negative cultural associations with nepotism (Zurcher et al., 1965; Trompenaars & Hampden-Turner, 1993).

This process of cultural persistence is aided and abetted by the readiness with which people act based on simple associations learned from the surrounding cultural context (Greenwald & Banaji, 1995; Banaji, 2001; Rudman, 2004). People tend to act based on common cultural associations whether or not they consciously endorse them. For example, even well-intentioned White Americans

accidentally shoot unarmed Black civilians in police simulations in which they are obliged to respond quickly, consistent with the cultural stereotype linking Black Americans and crime (Correll et al., 2002; Greenwald et al., 2003). As we will discuss in more depth later, culturally specific theistic beliefs such as the Protestant link between work and divine salvation can also operate in this way. For example, even less religious and non-Protestant Americans respond to the implicit activation of concepts related to divine salvation by working harder (Uhlmann et al., 2007). Thus, another aspect of implicit cognition – the tendency to act based on shared mental associations – can help explain the persistence of more idiosyncratic theistic beliefs *within* a culture.

The relationship between religious and cultural values is of course both complex and bidirectional. Culture shapes religion, such as when Buddhist beliefs and practices were fused with local values as they spread through Asia. And religion shapes culture, such as with the effects of early Protestant immigration on contemporary American attitudes toward work. And – in our primary thesis – both religion and culture are profoundly shaped by fundamental aspects of human psychology: cognitive defaults and existential needs that propel human beings toward belief in supernatural agents and shape our conceptions of what such agents may be like.

BRIEF NOTE ON TERMINOLOGY

The term *implicit* generally refers to cognitions that are intuitive, spontaneous, effortless, unintentional, uncontrollable, and/or inaccessible to conscious awareness. Each of these characteristics has been identified as a key aspect of implicit mental processes (Nisbett & Wilson, 1977; Bargh, 1994; Greenwald & Banaji, 1995; Wegner & Bargh, 1998; Banaji, 2001; Wilson, 2002b). However, it is relatively rare for any mental process to be purely explicit or purely implicit (Bargh, 1994; Wegner & Bargh, 1998). Therefore, we often use the term implicit in reference to cognitions that are "intuitive, spontaneous, effortless, and which do not *require* a conscious intention on the part of the social perceiver in order to occur" (Uhlmann et al., in press, p. 3). We assume that in many cases, the person in question does have some awareness of the outputs of her implicit cognitions (e.g., perceiving a face in the clouds, viewing the natural world as designed, disgust at heretical arguments), though lacking awareness of their origins.

The terms "theistic" and "theism" are used to refer to belief in supernatural agents, including both gods and souls. While theism is generally used in reference to belief in God or gods, in practice virtually all religions combine belief in gods and souls. (Although some forms of Buddhism lacks official, immortal gods, in practice the Buddha is often treated as a quasi-deity; Slone, 2004). In many traditional religions, disembodied souls are a type of deity (e.g., as in ancestor worship). Due to this reality, and because highly similar psychological

processes contribute to belief in nonmaterial yet agentic deities and nonmaterial yet agentic souls, we consider both as examples of implicit theism.

We now turn to the first category of recently identified contributors to the cultural universality of theistic cognition: cognitive defaults evident among young children and infants.

COGNITIVE DEFAULTS

A number of cognitive defaults present early in life implicitly shape theistic cognition. The cognitive science of religion has identified a number of such biases, among them implicit dualism (which separates a person's mind from her body), hypersensitive agency detection (which encourages belief in bodiless deities), simulation constraints (which contribute to belief in an immortal soul), promiscuous teleology (which creates a predisposition toward creationist explanations of how the natural world came to be), and the "curse of knowledge" (which lays the groundwork for belief in an omniscient deity).

Implicit Dualism

As Bloom (2004, p. 191) has observed, "We do not feel as if we *are* bodies; we feel as if we *occupy* them." Even children and infants intuitively distinguish between the physical and psychological. Implicit dualism is the ultimate basis of judgments of intentionality, morality, as well as religious beliefs (Bloom, 2004, 2006; Kuhlmeier et al., 2004).

An established indirect means of assessing infant cognition is the expectancy violation paradigm. This approach uses the length of time that infants look at something to assess whether they find it surprising. The more that an infant looks at something, the more it presumably violates their expectations (Spelke et al., 1992; Wynn, 1992). Woodward (1998) found that infants expected a human hand to pursue an intentional goal. Infants watched either a hand or a rod consistently move toward either a teddy bear or multi-colored ball. When the locations of the two toys were switched, infants were unsurprised that the human hand reached for the same toy as before. But they *were* surprised when the hand went to the same location as before even though the toys had switched places. This pattern of results was not observed for the rod. This suggests that infants expect humans, but not inanimate objects, to act intentionally or purposefully.

Other work suggests that infants are capable of rudimentary judgments of blame. In one study, when an adult began to hand them a toy and then accidentally dropped it, 9-, 12-, and 18-month-old infants reacted less impatiently than when the adult offered it and then intentionally pulled it away (Behne et al., 2005; for a similar finding with chimpanzees, see Call et al., 2004). The ability to attribute intentions to others enables judgments of blame and praise, since individuals are considered most responsible for actions that they intended.

Hypersensitive Agency Detection

In addition to implicitly distinguishing between bodies and souls, humans are predisposed to perceive agency not only in ourselves (Wegner & Wheatley, 1999; Wegner, 2002; Aarts et al., 2004, 2006) but also in the world around us (Guthrie, 1993; Barrett, 2000). Because the costs of failing to perceive a predator are much higher than perceiving a predator when none is there, humans have a hypersensitive agency detection device (Barrett, 2000) that leads us to perceive lurking danger in the woods and faces in the clouds (not to mention the Virgin Mary in a potato chip and Mother Teresa's face in a cinnamon roll; Guthrie, 1993).

Both adults and infants automatically attribute intentions to objects that move as if self-propelled (Heider & Simmel, 1944; Mandler & McDonough, 1993; Gergely et al., 1995; Johnson et al., 1998; Bloom & Veres, 1999; Kuhlmeier et al., 2003). In one classic study of agency detection, adult participants watched a movie in which geometric shapes interacted (Heider & Simmel, 1944). When asked to describe what they saw, virtually all of the participants described the geometric shapes as having intentions and goals. For example, a small triangle and large triangle were described as fighting for the love of a circle, with the small triangle eventually beating out the large triangle. Even though the geometric shapes did not look like any known agent, participants nonetheless perceived them as having intentions. In a remarkable study of infant cognition, 12-month olds watched a yellow circle jump a barrier to get to a red circle. Later, when the barrier was removed, the infants were surprised when the yellow circle did not go directly toward the red circle (Gergely et al., 1995). This suggests that humans are automatically disposed to attribute agency, even in cases in which the purported agent bears no resemblance to existing animal species.

While implicit dualism leads us to anticipate disembodied souls, hypersensitive agency detection disposes us to see agency all around us. Human beings may be implicit animists predisposed to perceive supernatural agents intervening in our lives and environments.

Simulation Constraints

A belief in a soul that outlives the physical body is among the most widely endorsed religious concepts around the world. A full 96% of Americans believe that human beings have souls. Even in the relatively secular nations of Western Europe, most people believe in souls (e.g., 75% of the population of the Netherlands, 73% of Austrians, 60% of Belgians, 70% of Britons, 55% of the French, and 81% of Swedes; Germans are a notable exception with only 37% believing in souls; Norris & Inglehart, 2004). Is this notion mostly culturally learned, or are humans predisposed to believe they and others possess a soul? One means of addressing this issue is to compare young children's beliefs about souls to those of older children and adults. To the extent that the notion of a soul is culturally learned, adults and older children should be more likely than younger children to evidence a belief in souls.

Bering and Bjorklund (2004) presented kindergartners, elementary school children, and adults with a puppet show during which an alligator ate a mouse. Kindergartners believed that the dead mouse no longer needed food or water and that its brain had stopped functioning. But they thought that the mouse still possessed emotions, desires, and epistemic states such as thinking and knowing. Kindergartners were significantly more likely than elementary school children and adults to believe that the mouse still had certain psychological states. For example, kindergartners were twice as likely as elementary school children to believe that the mouse retained epistemic states. Thus, a belief in the afterlife appears a psychological default rather than a culturally acquired notion – if the latter were true, elementary school children and adults should have been more likely than kindergartners to attribute psychological states to a dead being. Kindergartners rarely made any explicit religious references but nonetheless implicitly evidenced afterlife beliefs.

Similarly, Gimenez-Dasi et al. (2005) found that 3-year-old children believed that both God and their best friend would never die, whereas 5-year-olds thought that while their best friend was mortal God was immortal. Again, the cognitive default among young children is that agents are not mortal. As Tremlin (2006) has argued, in some cases "we do not project human-like qualities onto gods but god-like qualities onto humans."

Such responses are partly based on young children's lack of knowledge and experience. However, they also reflect constraints on the ability of children (and to a lesser degree adults) to mentally simulate the experience of not existing (Bering, 2002b, 2006; Bering & Bjorklund, 2004). While virtually everyone has experienced not needing to urinate or eat food, it is impossible to experience not existing. As a result, when people attempt to mentally simulate what it would be like to be dead, they have great difficulty doing so, and often end up attributing states such as thinking and knowing to dead agents. This difficulty in imagining not being alive lays the foundation for explicit afterlife beliefs that develop later in life.

Promiscuous Teleology

Other work suggests an implicit predisposition toward creationism. Young children display promiscuous teleology (Kelemen, 1999, 2004; Kelemen & DiYanni, 2005). That is, they automatically make attributions regarding intentionality when it comes to natural objects. Children believe that natural objects were made by agents for a reason. Kelemen (1999) found that when children and adults were asked what features of fictional prehistoric animals (e.g., a "cryptoclidus") and natural objects (e.g., a pointy rock) were for, only children attributed a function to the natural objects. For example, they believed that the rock was pointy so that people would not sit on it. Only 13% of adults thought that nonliving natural objects (i.e., a pointy rock, still pond, sand dune, and green stone) were made for a purpose, but 78% of first graders did. Evans (2001) asked the children of creationists and noncreationists whether humans, God, or evolution had created

animals and the natural world. Children were significantly more likely to make theistic attributions than their parents. Notably, even the children of *noncreationist* parents believed that God had made animals and the natural world. Kelemen (1999) argued that children readily give purpose-based explanations because the human mind is designed for reading intentions (see also Tomasello et al., 2005).

Additional work indicates that even infants are implicitly predisposed to see order as created by intentional agents (Newman et al., 2006). As in the studies on agency detection discussed earlier, the amount of time that infants spent looking at something was used to assess the extent to which it violated their expectations. Either a ball or ball-like agent arranged blocks in either an ordered or disordered configuration. Infants looked longer (i.e., were more surprised) when a ball created order than when it created disorder. This suggests an implicit tendency to perceive ordered patterns as designed by an intentional agent. This helps explain the continuing popularity of William Paley's (1802/2006) argument from design, which contends that the natural world is too complex and ordered to have occurred by chance. Paley's famous example is that when you find a watch on the ground, the complexity of the watch indicates that someone must have made it. While evolutionary theory can account for complex systems arising without intentional intervention (Dawkins, 1986, 2006), natural selection simply lacks the intuitive appeal of theistic explanations. Perceiving the natural world as intentionally made is an additional example of the human tendency to over-attribute intentions (Bloom, 2007).

The Curse of Knowledge

A number of the world's leading religions require the faithful to accept the existence of an all-knowing, all-perceiving deity. While some adults may struggle to accept the existence of this supernatural agent, the concept of an omniscient God capitalizes on cognitive defaults evidenced by young children. An omniscient God is easy for children to comprehend because such a being is consistent with their intuitions about other agents. Children under the age of four are profoundly egocentric and have a difficult time taking the perspective of other agents. As a result, they expect others to know anything that they themselves know (the "curse of knowledge"; Birch, 2005). They further expect Person B to know anything that Person A knows. In other words, their default assumption is that beliefs are universal and infallible.

In one relevant investigation, 4-, 5-, and 6-year-old children watched the experimenter put rocks in a box (Barrett et al., 2001). Children under the age of four thought that their mother would know that the box had rocks in it, and that God would know this too. Five and six-year-olds accurately predicted that their mother would not know what was in the box but still thought that God would know. In an additional experiment, children were shown that there was a wooden block inside a dark box. Three-year-olds believe that both God and a human puppet could see the wooden block, whereas 5-year-olds thought that God but *not* the human puppet could see the block.

The belief that God is all-knowing capitalizes on cognitive defaults evident among young children.[1] Instead of expanding their notion of agents to include an omniscient being, children gradually learn to *reduce* the amount of knowledge they attribute to humans. Rather than requiring an enormous leap of faith, the concept of an omniscient God is something that comes naturally.

Summary

Given these cognitive defaults, it is little wonder that religious beliefs are so widespread. Implicit dualism, hypersensitive agency detection, simulation constraints, promiscuous teleology, and the curse of knowledge are the cognitive foundation on which faith in supernatural agents is built.

EXISTENTIAL NEEDS

In addition to cognitive defaults present in infants and young children, existential needs most clearly present later in life also contribute to religious faith. (The studies reviewed in the upcoming sections used adult participants unless otherwise specified.) Successful religions generally provide an emotionally satisfying framework for understanding the world that is in little danger of disproof. Successful religions mitigate the existential terror of death, serve the implicit motive to justify the existing social order, and fulfill the desire to share a meaningful understanding of the world with other members of one's social group.

The Search for Meaning

While some moral intuitions vary dramatically across cultures, others are quasi-universal (Wilson, 1993; Haidt, 2001; Haidt & Joseph, 2004). People around the world view killing an innocent infant, robbing an elderly grandmother, and other commonly censured acts as absolutely wrong. Belief systems that fail to ascribe moral meaning to human behavior consistent with such intuitions are at a distinct disadvantage to those who do (Bering, 2002a).

One of the major hurdles faced by a materialist worldview is the distinction between what *is* and what *should* be. Materialists are reasonably successful at explaining how things are (e.g., men are nine times as likely to commit violent crimes as women), but have a difficult time justifying what *should* be (e.g., why men should stop committing so many violent acts). In a materialist world there are no deep moral truths, rather social conventions that result from evolved characteristics of mind. Materialism thus leads to relativist moral conclusions that everyday people find intuitively unsatisfying and even grotesque.

Empirical evidence suggests that materialism fails to provide life with the same sense of deep moral significance that successful religions provide (Bering,

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[1] At the same time, there are aspects of the Jewish, Christian, and Islamic God that are counterintuitive. For example, both children and adults find it difficult to imagine a supernatural agent who acts outside of time and is present everywhere at once (Barrett, 2004; Barrett & Keil, 1996).

2002a). Religiosity correlates positively with a sense of meaning in life, and negatively with anxiety and depression (Chamberlain & Zika, 1992; Steger & Frazier, 2005; Vilchinsky & Kravetz, 2005; Wulff, 2006). Moreover, the association between religion and well-being is mediated by an enhanced sense of meaning in life (Chamberlain & Zika, 1992; Steger & Frazier, 2005). Religious faith provides psychological benefits that materialist worldviews are unable to replicate.

Another advantage of theistic beliefs over materialist beliefs is that the former are extremely difficult to falsify (Barrett, 2004). Consider the case of Christian prayer, for example. If a believer prays for something that actually comes to pass, she experiences a tremendous validation of her faith. But if the prayer is not immediately answered, it could still be answered later on. And it could also be that either the prayer or the person who made it were not worthy of a divine response. While an answered prayer validates one's faith, an unanswered prayer fails to weaken it to the same degree. While some would-be prophets have made the mistake of giving a precise date for the end of the world and making other falsifiable claims, the theistic claims that tend to last are those invulnerable to disproof. Successful religions provide people with a meaningful framework to understand the world which guarantees their beliefs will never be proven completely false. As such, they provide a degree of existential security that no scientific theory can fully match, because scientific theories must be falsifiable.

Existential Terror of Death

A number of scholars have argued that religion satisfies the powerful (yet often unconscious) need for psychological immortality (Freud, 1946; Becker, 1973). However, empirical evidence that fear of death implicitly contributes to religiosity has only become available relatively recently.

Multiple waves of the World Values Survey indicate that people from underdeveloped countries are considerably more religious than people from industrialized countries (Norris & Inglehart, 2004). The constant existential threat posed by an environment rife with poverty, disease, violence, and political instability leads people to turn to religion for solace (Norris & Inglehart, 2004). As Barrett (2004, p.118) has observed, "if religion is the opiate of the masses, atheism is a luxury of the elite." Only elites have the existential comfort necessary to reject theistic concepts and other aspects of traditional authority; for the poor, the belief in a just world requires an afterlife to balance the equation.

Direct evidence that a fear of death contributes to religiosity is provided by research on Terror Management Theory (TMT; Greenberg et al., in press; Pyszczynski et al., 1997, 1999). Scores of studies demonstrate that asking people to think about their own death leads them to seek symbolic immortality by defending the worldview of their culture (e.g., Rosenblatt et al., 1989; McGregor et al., 1998). Goldenberg et al. (2001) found that asking people to think about their own death led them to deny a connection between human beings and animals – in other words, to cling to the idea that there is something "special" about human

beings. Also, priming death increased the extent to which participants believed that God exists and plays an active role in human affairs (Norenzayan & Hansen, 2006). Mortality salience further made people more biased in favor of individuals who shared their religion (Greenberg et al., 1990), and less willing to use a religious symbol in a disrespectful manner (i.e., banging in a nail using a cross; Greenberg et al., 1995). Notably, church attendance and Bible sales rose after the terrorist attacks of September 11, 2001 (Pyszczynski et al., 2003). Consistent with the idea that religious faith addresses existential fears, deeply religious people report less fear of death (Minton & Spilka, 1976; Bolt, 1977; Spilka et al., 1977; Donahue, 1985) and are less likely to respond to mortality salience by defending the cultural worldview (Jonas & Fischer, 2006; see also Dechesne et al., 2003, for evidence that afterlife beliefs mitigate the existential terror of death).

Existential needs are not fully sufficient to explain theism because some religions do not provide much existential comfort (Boyer, 2001). A few even present an existentially terrifying worldview in which malevolent supernatural agents intervene regularly in human affairs. While speculative, it seems possible that religious ideas that do provide existential comfort (e.g., heavenly rewards in the afterlife) are more "contagious" and likely to spread (Sperber, 1985, 1994; Nichols, 2004). This would help explain why certain existentially comforting religions count hundreds of millions of members while existentially terrifying religions are relatively parochial. As discussed in upcoming sections, socially oriented motives also make a major contribution to theistic beliefs.

System Justification

A number of scholars have argued that humans possess an implicit motive to justify the prevailing social order (Jost & Banaji, 1994; Sidanius & Pratto, 1999; Jost et al., 2004). Many people believe the world is a just place, which leads them to blame the victims of tragedies for their misfortune (Lerner & Miller, 1978; Olson et al., 2006). Classic work by Piaget (1932/1965/1978) found that the belief in a just world – as evidenced by a conviction in "immanent justice" – developed early in life. Children were told a story about a child who committed the moral transgression of stealing, and later died when a bridge collapsed. Eighty-six percent of the youngest children thought that it was the moral transgression that caused the bridge to collapse.

Even the victims of social misfortune implicitly justify the social hierarchy (Sidanius & Pratto, 1999; Jost et al., 2004). Low income Americans are significantly *more* likely than high income Americans to believe that economic inequality is legitimate and differences in pay are needed to get people to work hard (Jost et al., 2003). Similarly, Black Americans are more likely than European Americans to explicitly endorse stereotypes of Black people as lazy and irresponsible (Sniderman & Piazza, 1993).

Religious beliefs are among the most effective rationalizations used by both high and low status individuals to rationalize inequality (Sidanius & Pratto,

1999). Obvious cases include the Hindu caste system, the concept of divine right of kings, and the Calvinist principle of earthly rewards. When no natural justification for status differences exists, religion is used to provide supernatural justifications (e.g., moral behavior in a past life, being chosen by God to lead, having the grace of God). Empirical studies confirm that religiosity is positively correlated with authoritarian, anti-egalitarian, and otherwise pro-system beliefs (Altemeyer & Hunsberger, 1992; Altemeyer, 2003). This suggests that the need to justify enormous differences in socioeconomic status is one reason for the pervasiveness and content of theistic beliefs.

Social Intuitionism

The need to belong and affiliate is a fundamental human motive that helps account for why communities generally share the same religious values (Baumeister & Leary, 1995; Tremlin, 2006). Human beings are deeply social creatures who implicitly conform to the values of those around them (Hardin & Higgins, 1996; Haidt, 2001; Sinclair et al., 2005).

Cultural influences on moral beliefs are especially strong at an automatic, implicit level (Schweder, 1991; Banaji, 2001; Haidt, 2001). In ingenious research by Haidt and his colleagues, participants were "morally dumbfounded" when asked to logically justify their opposition to physically harmless yet socially disapproved acts (e.g., using an American flag to clean the toilet; Haidt et al., 1993). Yet such intuitions are easy enough to predict, so long as one is familiar with the person's culture (Schweder, 1991; Haidt, 2001).

Research using implicit measures of attitude (Fazio et al., 1995; Dovidio et al., 1997; Greenwald et al., 1998) indicates that automatic evaluations are highly sensitive to the cultural context (Greenwald & Banaji, 1995; Banaji, 2001; Rudman, 2004), and unconsciously shift to become more like those of other people one likes and respects (Hardin & Higgins, 1996; Sinclair et al., 2005). For example, Sinclair et al. (2005) found that automatic racial attitudes, as assessed by a subliminal priming task, changed to become more like those of a polite research confederate but not a rude research confederate.

Recent work by Epley and his colleagues further underscores the contribution of social affiliation motives to theistic cognition (for a review, see Epley et al., in press). Individuals who self-reported feelings of loneliness were significantly more likely to evidence a belief in God and anthropomorphize inanimate objects (e.g., an alarm clock named "Clocky") and pets (Epley, Akalis, Waytz, & Cacioppo, in press; Epley, Waytz, Akalis, & Cacioppo, in press). And individuals (falsely) told their personality predicted they would be alone later in life became significantly more likely to report a belief in supernatural agents, including God (Epley et al., in press). This converges with earlier studies indicating that single individuals, as well as individuals with insecure personal relationships, are more likely to strongly believe in a personal God (Kirkpatrick & Shaver, 1990; Granquist and Hagekkull, 2000).

Once adopted, such core theistic beliefs are passionately defended (Lord et al., 1979; Kunda, 1990; Tetlock et al., 2000; Pronin et al., 2004). In fact,

people find it aversive to even *think* about alternatives to their theistic beliefs. Tetlock et al. (2000) asked participants to read passages containing "heretical counterfactuals." One passage speculated that if Joseph had left Mary in response to her pregnancy, Jesus would have grown up in a single-parent household and his personality would have been different. Fundamentalist Christians reported feeling angered, disgusted, and even violated by such ideas. They also engaged in "moral cleansing," reporting intentions to get more involved in church activities as a way to purify themselves of such thoughts (see also Zhong & Liljenquist, 2006). No such effect was observed for nonreligious counterfactuals. The toxicity of heretical ideas is testament to the emotional commitment created by the shared reality of religion.

Summary

Religious faith capitalizes not only on cognitive defaults evident in children, but also on existential needs most clearly identifiable in adults. These include the desire for meaning, existential terror of death, the implicit need to rationalize the social order, and the desire to share an understanding of the world with other members of one's social group. Empirical evidence further indicates that system justification and social intuitionism address existential terror: people are more likely to defend the current social system and ideologies they share with ingroups when they have recently thought of their own death (Pyszczynski et al., 1997, 1999).

While work with infants and young children indicates that certain aspects of theistic cognition are present early in life, research with adults suggests how universal properties of mind combine with existential and social experiences to produce and maintain religious beliefs. We now turn to the tension that atheist, agnostic, and less religious people experience between their explicit beliefs and implicit theism.

Explicit Versus Implicit Theism

While international surveys indicate that the overwhelming majority of people around the world are theists (Norris & Inglehart, 2004), there are individuals who consistently claim that they do not believe in supernatural agents or immortal souls. Is it as simple as that, or do atheists, agnostics, and less religious people nonetheless experience theistic intuitions? That theistic cognition is based in basic properties of mind shared by all humans (e.g., agency detection, simulation constraints, social intuitionism) predicts that even nonbelievers should at an implicit level experience some theistic cognitions (Bloom, 2007). Just such a dissociation is observed with regards to racial prejudice – even explicitly egalitarian individuals exhibit implicit responses consistent with cultural prejudices (e.g., shooting unarmed black civilians in a police simulation; Correll et al., 2002; Greenwald et al., 2003). Dual process models stipulate that while explicit attitudes determine deliberative, abstract judgments (e.g., judgments of guilt in a criminal case), implicit attitudes influence relatively more spontaneous, spur

of-the-moment reactions (e.g., nonverbal behaviors such as how close one chooses to sit to a Black student; Fazio, 1990; Fazio et al., 1995; Dovidio et al., 1997; Wilson et al., 2000; Gawronski & Bodenhausen, 2006). Without drawing any moral comparison between religion and racism, this leads us to expect an uneasy coexistence of explicitly atheist and implicitly theist cognitions in individuals who claim to be nonbelievers.

A number of empirical findings are consistent with just such an implicit–explicit tension. In a structured interview about afterlife beliefs, Bering (2002b) explicitly asked participants whether they thought that "what we think of as the 'soul,' or conscious personality of a person, ceases permanently when the body dies." He classified participants as "extinctivists" if they explicitly rejected the notion that the soul survives physical death. Participants were next presented with vignettes about fictional characters who met abrupt, accidental deaths. For instance, one vignette described a history teacher who, while trying to get to his class on time, crashed his car into a utility pole and died. Participants were asked what faculties the man still possessed. Remarkably, many extinctivists agreed that the dead man "knew that he was dead." One extinctivist responded "Yeah, he'd know, because I don't believe in the afterlife. It is nonexistent; he sees that now." Providing further evidence that belief in souls is strongest at an implicit level, extinctivists took twice as much time to indicate that epistemic states cease upon death as it took them to indicate that biological processes cease upon death. Taken together, these results suggest that many extinctivists nonetheless implicitly believe in a soul that survives physical death.

In another relevant investigation, participants were offered a contract selling their soul to the experimenter for the sum of 2 dollars (Haidt et al., 2000). The contract prominently stated that the offer was a joke and the contract was not valid. Despite this, four out of five participants refused to sign. Notably, even nonreligious participants overwhelmingly declined the offer, in some cases laughingly admitting that they had no rational reason for doing so. It appears that religious and less religious people share the implicit belief that they have a soul to be sold.

Data reported by Nosek (2002, 2005) provides the most direct evidence for an implicit–explicit tension regarding religion. Participants completed both a questionnaire measure of their attitudes toward evolutionary theory versus creationism and an Implicit Association Test (IAT; Greenwald et al., 1998) of their automatic attitudes toward evolutionary theory and creationism. Strikingly, while a majority of participants explicitly preferred evolutionary theory over creationism, automatic attitudes toward creationism were more positive than those toward evolutionary theory. This dissociation suggests that even when explicit attitudes tend toward materialist explanations of how the world came to exist, implicit cognitions remain consistent with the culture's dominant religion.

It is interesting to speculate about potential role of cognitive development in the tension observed between implicit and explicit theism. Some of the theistic biases observed in young children appear to dissipate substantially over time, for

example, the tendency to view natural objects like rocks as made for a purpose (Kelemen, 1999, 2004; Kelemen & DiYanni, 2005). Yet it is difficult to deny the intuitive, implicit appeal of Paley's (1802/2006) related argument from design, and the more logically imposed, deliberative nature of a belief in natural selection (Dawkins, 1986). While speculative, it seems possible that theistic cognitions most strongly evident in children may temporarily re-emerge among adults under conditions that promote implicit processing, such as when the individual's capacity to reason carefully is reduced by a concurrent cognitively demanding task (e.g., trying to remember an eight-digit number; Gilbert et al., 1988; Gilbert & Osborne, 1989). We leave empirical tests of this hypothesis to future research.

In sum, theistic cognition is intuitive, spontaneous, and implicitly shapes relevant judgments and behaviors. Indeed, universal properties of mind make it practically inevitable that theistic ideas will manifest themselves in the implicit cognitions of both explicit believers and explicit nonbelievers. Theistic cognition is near-universal at an explicit level and quite likely universal at an implicit level. We now turn to a culturally specific expression of implicit theism: the association between work and divine salvation in United States of America.

Implicit Puritanism in America

> Christ by a wonderful Providence hath dispossessed Satan, who reigned securely in these Ends of the Earth, for Ages the Lord knoweth how many, and here the Lord has caused as it were New Jerusalem to come down from Heaven.
>
> –Puritan minister Increase Mather

The United States is exceptional among developed nations in its extremely high level of explicit religiosity. International surveys indicate that wealth almost universally leads to secularization, such that in Western Europe and economically prosperous East Asian states, religion is gradually fading from public life (Inglehart, 1997; Norris & Inglehart, 2004; Inglehart & Welzel, 2005). Yet in America, the world's economic superpower, a full 94% of the population believes in God, and 65% are sure that Satan exists (Harris, 2004). The majority of Americans are creationists who believe that the universe was created 6,000 years ago (Dawkins, 2006; Harris, 2006). 44% of Americans believe that Jesus will return during the next 50 years, and three times as many Americans endorse intelligent design as endorse evolutionary theory (Greeley, 1991; Gallup & Linday, 1999; Harris, 2006). Based on economic development, 5% of Americans should regard religion as extremely important in their lives, yet the actual figure is 10 times that amount (Wald, 1987).

Indeed, America appears to be on a different developmental course than are other developed nations, in that Americans are virtually as religious today as they were over half a century ago. Contemporary Americans are just as likely as Americans from the 1940s and 1950s to attend church, believe in God and life after death, and rank God as extremely important in their lives as (Lipset, 1996; Norris & Inglehart, 2004; Baker, 2005). Between 1947 and 2001, the percentage of Americans who believe in life after death actually *increased* by 8% (Harris,

2006; Sheler, 2006). And spiritual and religious elements in American television shows have grown 400% since 1993 (Gazzaniga, 2005).

American theism has its roots in the nation's Puritan–Protestant heritage (Sanchez-Burks, 2002, 2005; Uhlmann et al., in press). In contrast to the over-whelmingly male Spanish immigrants to the New World, who sought to make their fortunes, these English colonists came as families and in some cases entire reli-gious congregations (Bellow, 2003). Considered religious fanatics in Europe and subjected to persecution, these Puritan–Protestants sought to create a religious utopia in the New World. They sought to save the world by founding a "city upon a hill" that would, by example, lead other nations to embrace the true faith (Merk, 1963; Gilbert, 1970). This self-selection process resulted in extremely religious communities that exerted a profound influence on the culture of the English colonies (Fisher, 1989). While eventually dwarfed in numbers by waves of immigrants seeking economic opportunities, the Puritan–Protestant settlers, by virtue of having arrived earlier, succeeded at imprinting their values on what eventually became the United States of America (Cohen, 2001). It is this unique cultural history that has allowed the United States to retain high levels of religi-osity in the face of enormous economic prosperity.

Protestant countries were the first to industrialize, due at least in part to Protestant values conducive to capitalism (Weber, 1904/1958; Landes, 1998; Norris & Inglehart, 2004). One ironic result is that Protestantism has become a victim of its own (economic) success. The Reformation ushered in explosive economic growth that has deeply eroded support for the Protestant religion in its birthplace of Western Europe. This leaves the United States as the only major Protestant nation that has yet to secularize. As a result, contemporary Americans may display unique implicit responses that reflect Puritan–Protestant values.

The values of contemporary Americans should differ not only from those of individuals from cultures that are not historically Protestant (e.g., Italy) but also historically Protestant cultures that have since secularized. As noted earlier, humans readily – and implicitly – pick up the associations predominant in their culture (Greenwald & Banaji, 1995; Haidt, 2001). For example, even consciously egalitarian White Americans implicitly associate Black Americans with crime (Correll et al., 2002; Greenwald et al., 2003). A less religious or non-Protestant American should therefore exhibit implicit cognitions consistent with cultur-ally predominant Protestant values. In contrast, contemporary Germans live in a society in which religion has largely faded from public life (Norris & Inglehart, 2004). As a result, they may have not been conditioned with implicit associations reflective of Protestant values.

Perhaps the most exceptional aspect of Puritan–Protestant theology is the link made between work and divine salvation. In contrast to other religious tradi-tions that frown on excessive worldliness and the accumulation of wealth, the early Protestants viewed wealth as a sign that one was among God's chosen. Harvesting the fruits of one's hard work became a moral imperative rather than a practical necessity. While many East Asian cultures likewise emphasize hard

work, their ethos is typically a secular one. For example, the Japanese government actively promoted work as a way of fulfilling one's national and family responsibilities (Fukuyama, 1995; Landes, 1998). In contrast, Protestantism made work a religious imperative. As US President Calvin Coolidge once claimed, "The man who builds a factory builds a temple. And the man who works their worships there." (as cited in Davis, 1993, p. 322).

In a number of recent studies, we have examined whether contemporary Americans display implicit Puritanism, for example, by implicitly linking work and divine salvation (Poehlman et al., 2007; Uhlmann et al., 2007). In one investigation, participants unscrambled sentences (Srull & Wyer, 1979) including either concepts related to divine salvation (e.g., *saved, God, angelic*) or nonreligious concepts matched in valence (Uhlmann et al., 2007). Subsequently, all participants completed an anagram task. As expected, American participants in the salvation prime condition solved more anagrams, suggesting that they worked harder on their assigned task. Control groups of Canadian, Italian, and German participants did not evidence this implicit link between work and salvation. No participant believed that the salvation prime had influenced their anagram performance.

Notably, non-Protestant and less religious Americans were just as likely as devout Protestants to respond to the salvation prime by working harder. This suggests that it is exposure to American culture, rather than conviction in any particular faith, which engenders an implicit link between work and divine salvation. The implicit theistic cognition of Americans is therefore traceable to cultural history, different from that of members of other cultures, and rooted in basic properties of how the mind works. Thus, we identify a way in which the *content* of theistic cognition differs between cultures, even as it is rooted in psychological *processes* that are universal. And we again implicate implicit cognition in the maintenance and expression of theistic beliefs.

Of particular interest for future research are the intuitions of individuals from East Asia, known for a strong work ethic lacking in religious overtones (Fukuyama, 1995; Landes, 1998). How might their moral cognitions related to work converge and diverge from those of Americans? As noted, the famed Japanese work ethic is traditionally linked to secular concerns such as duty to country and family. This suggests that for Japanese individuals, implicitly priming stimuli associated with such concerns, such as the national flag or a family portrait, may cause them to work harder at an assigned task. However, Japanese individuals should not respond to implicit primes associated with religion by working harder.

Making a respectable empirical case that a belief is universal or unique to a specific culture is challenging. In some rare cases, one can argue scholars have yet to encounter a culture conspicuously lacking in some common belief, for example, that a human being is more than a machine made of meat. Some cross-national surveys of explicit values have included scores of countries (e.g., Hofstede, 1980), perhaps enough to justify strong claims. Norenzayan and Heine

(2005 p. 767) have proposed some less logistically daunting criteria for cultural universality, for example, replicating a psychological phenomenon in two cultures that are known to be extremely different from one another on relevant dimensions including "social practices, philosophical traditions, language, geography, socioeconomic status, literacy, and level of education". For example, children from both North America and the Baka people of Cameroon both develop an understanding that other people can believe in things that are incorrect (Avis & Harris, 1991). That both North Americans and illiterate pygmy hunter-gatherers share this critical belief suggests that it is a pan-cultural psychological phenomenon (Norenzayan & Heine, 2005).

Our research on the distinctive American link between work and divine salvation employs the approach championed by Seymour Martin Lipset (1996), among the foremost scholars on American values. Lipset has argued that claims of American exceptionalism are best tested by comparing the values of Americans and members of highly similar cultures, such as Canada. That Americans, but not Canadians, responded to a salvation prime by working harder suggests that American attitudes toward work are special and distinctive. Of course, however, much more research is necessary before drawing strong conclusions about American moral exceptionalism.

CONCLUSION

Religion is a human universal that capitalizes on (1) cognitive defaults observable in children and (2) existential needs endemic to the human condition. Human beings are implicit dualists who distinguish between bodies and minds, are biased toward detecting agency in the world around us, have difficulty imagining a future in which physical death brings psychological death, view the natural world as created for a purpose, and find it easy to imagine an omniscient deity. Successful religions provide frameworks for understanding the world which both imbue it with meaning and are immune to falsification. Successful religions further address the existential terror of death, the implicit need to justify the prevailing social order, and the desire to affiliate with members of one's social groups. These variables may not be sufficient to account for the pervasiveness of belief in the supernatural, but they do go a long way toward explaining why religion developed independently in geographically isolated cultures throughout the world. At the same time, they provide a more empirically grounded account of certain aspects of the human collective unconscious (Jung, 1921/1976).

Theistic cognition is so inherent to human psychology that even individuals who claim to be atheists or agnostics evidence implicit responses consistent with a belief in the supernatural. Of course, much of the specific content of religious beliefs varies widely from one culture to another (Cohen, 2001), as with, for example, the implicit Puritanism displayed by contemporary Americans (Poehlman et al., 2007; Uhlmann et al., 2007).

Psychological research, informed by an understanding of implicit cognition, can make a unique contribution to the science of religion. The development, spread, and maintenance of theistic beliefs are by necessity closely tied to basic psychological processes. As Tremlin (2006, p. 74) has argued, "we cannot understand *what* we think until we first understand *how* we think." The nearly universal belief in God and the afterlife appears an inevitable consequence of the natural grooves of human cognition and motivation.

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