

Evolutionary Psychology Challenges the Current Social Sciences

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Evolutionary psychology is a new multidisciplinary field which promises to irrevocably change the traditional social sciences. This article introduces evolutionary psychology, explains how it challenges current social science, then discusses the opportunities it presents for Christian apologetics. To show that evolutionary psychology theories may be complementary, rather than antagonistic, to Christian views, a hypothesis within the Darwinian paradigm is proposed to explain the evolution of human awareness of supernature. Human awareness of supernature may be founded on the logical relationship between evolutionarily recent psychological adaptations in response to novel hominid social arrangements and more ancient mammalian psychologies. The hypothesis, though based on naturalism, paradoxically eclipses atheistic natural philosophy. Awareness of something beyond nature may be integral to human survival.

Once again, there is much ado about Darwinism in the popular press.¹ Darwinism is poised to deliver a serious blow to the social sciences of the past century. The Standard Social Science Model focused on culture as the underlying cause of human behavior. Evolutionary psychology promises to usher in a new science of human behavior based on the Darwinian paradigm. Just as our taste guides us to nutritious foods (for the environment of evolutionary adaptation), our psychological adaptations guide us to seek certain types of information in the social environment. Culture is one resource that provides such information. Culture is both a product and director of individual striving, but it is not the "cause" of our striving. Our striving is the product of our evolved psychological architecture. Or perhaps we can say, our human nature.

The purpose of this article is to describe evolutionary psychology and the challenge it poses to traditional social science, then to discuss opportunities evolutionary psychology opens for Christian apologetics.

What is Evolutionary Psychology?

Evolutionary psychology is a multidisciplinary approach within the Darwinian paradigm that seeks to apply theories of evolutionary biology in order to understand human psychology.² This sounds similar to the goal of sociobiology, a controversial field that

emerged about twenty years ago. However, evolutionary psychology is not sociobiology. Sociobiology attempted to explain social structures strictly in terms of evolutionary selection pressures, particularly in terms of maximizing reproductive fitness.³ Such an approach advanced evolutionary biological theories, such as kin selection⁴

by linking relatedness and social structure.⁵ However, sociobiology desired to go directly from genes to society, ignoring the individual and the way the individual thinks. This led to a mistaken implication that individuals acted to maximize fitness. Evolutionary psychology avoids this misinterpretation by emphasizing the product of adaptations—the individual's mind/brain.

Evolutionary psychology claims that natural selection in the "environment of evolutionary adaptation" led to inherited psychological mechanisms which are modular, specific, and numerous. One objective of evolutionary psychology is to identify psychological mechanisms. They are as varied as our ability to pick a face out of a crowd, our romantic desires, our ability to hear spoken words over background noise, and our joy of speaking to each other. These mechanisms are best described in terms of cognitive psychology rather than behavior or neurological structure. They "unfold" and develop in response to the social and natural environment. According to John Tooby and Leda Cosmides, editors of *The Adapted Mind*, humans are executors of adaptive psychological mechanisms, rather than fitness maximizers.⁶

Another objective of evolutionary psychology is to propose hypotheses on the adaptive functions underlying each universal psychological phenomenon. These adaptations were generated in the "environment of evolutionary adaptation," consisting of the social and natural environment of the Pleistocene, rather than of the present day. Data used to evaluate hypotheses in evolutionary psychology are potentially limitless—from physiological stimulus-response to character portrayal in literature to anecdotal observations of human activities in the unplanned experiments of modern society. Currently, the most compelling tests of evolutionary psychology hypotheses are cross-cultural surveys designed to elucidate psychological universals.⁷

Not surprisingly, recent books have publicized the racy application of evolutionary psychology to human perceptions of sexual attractiveness.⁸ For example, men prefer nubile women with a waist-to-hip ratio of 0.7 (whether fat or thin). Men have different "mate" criteria for marriage and flings. Women seek men with status who are willing to commit resources. According to cross-cultural surveys, these sexual preferences are universal. They indicate psychological adaptations addressing mate choice, a specific dilemma experienced in the environment of evolutionary adaptation. Consistent environmental clues allowed individuals to recognize and prefer certain features in a mate. Over generations, individuals with certain preferences experienced greater reproductive success. Therefore, through natural selection, such preferences became psychological adaptations among all individuals of the species.

Evolutionary psychology does not claim that individuals must seek certain features in a mate or that seeking certain features maximizes a particular individual's fitness. This is

the erroneous implication of sociobiology. Donald Symons claims that a science of human behavior cannot be directly based on analysis of the reproductive consequences of human action.⁹ Fitness maximization is a general result of striving for specific goals, such as finding food or a suitable mate. Symons warns that it is a logical error to say that specific goals are consequent upon a general goal. Unfortunately, books popularizing the Darwinian approach to understanding human action may confound the evolutionary psychology and sociobiological perspectives. For example, Robert Wright's *The Moral Animal*, properly relates how an individual's behavior may be seen as exemplifying specific psychological mechanisms proposed by evolutionary psychology (with the general consequence of reproductive success).¹⁰ Other popularizers erroneously link individual or group behavior directly to fitness maximization.¹¹

In sum, evolutionary psychology postulates that the mind/brain mechanisms that collectively constitute human nature were designed by natural selection in the environment of evolutionary adaptation and must be described as solutions to specific cognitive problems in that environment. Evolutionary psychology conceptually integrates psychology and evolutionary biology by tying together psychological phenomena and theories of adaptive function. Conceptual integration between disciplines has been one distinguishing feature of the natural sciences. Consequently, evolutionary psychology is on the "natural science" side of the fence in human studies. The Standard Social Science Model consciously rejects integration with the natural sciences and is vulnerable to criticism on that basis.¹²

The Logic of the Standard Social Science Model

The Standard Social Science Model's rejection of conceptual integration with the natural sciences is sustained by a false dichotomy of nature versus nurture.¹³

(This dichotomy follows from its moral assumptions, which will be discussed later.) First, the Standard Social Science Model claims that only genetically determined human behavior is "natural" or biological. Certain infant reflexes and adult facial expressions fall in this category. Next, the Standard Social Science Model asserts that all human infants have the same design and potential. So "nurture" must account for the profound differences in behavior and mental organization among human societies. The content of "nurture" comes from "culture" and is "learned" by the individual. Since the causal arrow points from society to the individual, social structure, rather than the individual, generates culture. The sociocultural level of human interaction is distinct, autonomous, and self-caused. Within the Standard Social Science Model, the idea of human nature (or, for evolutionary psychology, evolved psychological architecture) is eliminated as a useful concept. The individual can "learn" any "culture."

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The structure of the social sciences flow from its internal logic. A particularistic, content-specific anthropology examines cultures with an eye to emphasizing variability. A content-independent psychology designs experiments to elucidate how the brain is a general information processor. In this regard, Skinnerian behaviorism may be seen as an experimental protocol designed to exclude evolutionarily organized responses by eliminating biologically significant stimuli.

Ironically, the field of cognitive psychology developed in frustration with behaviorism.¹⁴ Cognitive psychology studied behavioral and neurological responses to sensory stimuli and found that the brains of all animals, including humans, had numerous and specific responses to stimuli and that these were associated with neurological structure.¹⁵ In this way, cognitive psychology began to undermine the concept of the brain as a general information processor and established a vocabulary for evolutionary psychology to propose mind/brain adaptations. Evolutionary psychology now directly challenges the scientific integrity of the Standard Social Science Model by claiming that culture is the manufactured product of evolved psychological mechanisms situated in individuals living in groups.¹⁶ The rich variability of culture has been generated by the intricate and contingent set of functional programs used by human beings to process information from an environment provided by other human beings.

A Christian View of Evolutionary Psychology versus the Standard Social Science Model

The Standard Social Science Model is founded on a moral rejection of biological views of human nature. It claims that (1) humankind shares a psychic unity, (2) all human infants have similar potential, and (3) the only thing that separates us is culture, not biology.¹⁷ Since culture is relative and constructs perceived reality, cultures cannot judge one another. The Standard Social Science Model promises that humans may be ideologically trained. Since there is no human nature, we are programmable. Such a view appeals to moral elitists who intend to help the (culturally) deprived through government action. Social scientists present their values as "scientific" judgments and support an impersonal agenda of cultural reform (i.e., by changing social structures).¹⁸

While the moral claims of the Standard Social Science Model sound familiar to Christians, we differ in justifying these values. The ideas of the psychic unity of humankind, the importance of developing human potential, and the imprudence of judging one another flow from a contemplation of divine revelation, rather than human knowledge, and support an agenda of cultural reform through personal conversion. Because the Standard Social Science Model has founding moral values that appear to agree with Christian morals, but actually support a relativistic and totalitarian agenda, an assault on its scientific validity by evolutionary psychology provides relief from this stagnant and dangerous worldview.

In the short run, social scientists will respond to evolutionary psychology in the same manner as they responded to sociobiology, with moral outrage. Those who question the scientific validity of the Standard Social Science Model will be labeled as contradicting its moral claims. Questioners will be classified as the moral equivalents of the past demagogues who relied on biological claims of human nature to justify inhuman action. The tactics of this defense applies to other fields of modern thought, such as law.¹⁹

But will evolutionary psychology be any better? Because it derives from Darwinism, evolutionary psychology harbors naturalistic assumptions potentially dangerous to the Christian perspective.²⁰ However, we must remember that Darwinism is the best natural explanation of human origins yet proposed, and, in modified form, is likely to remain so.²¹ In the long run, the benefits and risks of evolutionary psychology will be tied to its scientific progress. Evolutionary psychology will eventually construct a description of human nature within the Darwinian paradigm. And here is where the challenge for the Christian may be seen.

Christianity already has a description of human nature. It comes from a long tradition of debating the nature of God and humans while contemplating the experience of divine revelation. It is intimately tied to Genesis. The opportunity for Christian apologetics comes with the question: Will descriptions of human nature by evolutionary psychology and by Christianity be complementary?

This question sounds straightforward, but one must keep in mind that both evolutionary psychology and Christianity seek a deeper understanding of the truth. They are both "moving targets." The relationship between Christianity and science has been a peculiar one. Since the Christian culture successfully gave birth to science, science appears to have undermined the Christian worldview.²² The Copernican, Newtonian, and Darwinian revolutions forced Christianity to make choices and self-discoveries that have tended to demythologize and naturalize its revelation. Here, the term "demythologize" means "to connect a story with actual or historical events" and "naturalize" means "to rationalize reports of miracles in terms of natural processes."

As Dick Fischer pointed out in *The Origins Solution*, demythologization reinforces the sense that biblical events (especially miraculous ones) were real.²³ Today, compared with other world religions, Christianity is the most historically-oriented and free from myth. Naturalization, on the other hand, rejects the reality of biblical events. Attempts to completely naturalize Judeo-Christian revelation are necessarily speculative and may be challenged on epistemological grounds.²⁴ However, a weak form of naturalism prefers to isolate sections of the Bible and label them as myth.²⁵ In doing so, reality is denied on one plane (the physical) and not on another (the moral). This attempt has been successful, particularly regarding the early chapters of Genesis.²⁶

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The mirror process, the mythification of (or the finding of ultimate purpose or beauty in) the natural and evolutionary sciences, has been the focus of Christian resistance.²⁷ We all know the price paid when "what is" has been elevated to "what ought to be." Since nearly everyone today agrees that the mythification of science violates the founding assumptions of naturalism, expressions of purpose in nature border on nihilism.²⁸ Richard Dawkins states that life has no higher purpose than to perpetuate the survival of DNA²⁹ Steven J. Gould emphasizes contingency "pure luck" in the evolution of humans.³⁰ As in the past, Christians will demand that these views be either rejected or reinterpreted critically from the perspective of revelation.

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attempting to recognize a complementarity between Christian thought and the evolutionary sciences. For myself, I hold that this recognition may be achieved by aesthetically demythologizing the early chapters of Genesis, a process that may be possible despite its literary construction.³¹ Finally, I believe that the process begins by connecting the early chapters of Genesis artfully with discoveries in the evolutionary sciences.

Already, Christian writers have expressed a sense of this complementarity while keeping in mind the limitations of previous

approaches.³² The creation of humans in Genesis 1:27 has been pondered in relation to the earliest appearance of anatomically modern humans³³ The stories of Adam and Eve have been correlated to the earliest organized irrigation in Mesopotamia.³⁴ My own work artistically rendered a resemblance between the first chapter of Genesis and the evolutionary record,³⁵ including the origin of humans (Gen. 1:26-30).³⁶ Mechanisms for divine intervention within the evolutionary paradigm have been proposed.³⁷ These creative reflections recommend novel and aesthetic approaches to express this recognition. At the same time, these approaches recommend that Christians understand and participate in the formulation of natural theories within the evolutionary sciences. This is where evolutionary psychology comes in.

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If the creation of humans in the first chapter of Genesis may be aesthetically correlated with the earliest appearance of anatomically modern humans, then how might the discoveries of the evolutionary sciences, particularly evolutionary psychology, resonate with the phrase "created in the image of God"? While Christians cannot propose evolutionary psychology hypotheses

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that humankind was created in the image of God or that humankind evolved to believe in Jesus, Christians can propose evolutionary psychology theories explaining why the religious impulse is a species-specific trait.³⁸ The existence of a universal human impulse toward God is a crucial starting point for Christian apologetics.³⁹

In the remainder of this article, I will propose a hypothesis in evolutionary psychology concerning the evolution of human awareness of something beyond nature. The hypothesis will discuss adaptive functions that may explain the psychological mechanisms behind our widely expressed awareness of something beyond nature. If this type of theory succeeds, then the discovery could imply that atheistic natural philosophy alone is insufficient for human survival. Paradoxically, humans may need God to perpetuate their DNA.

The Limitations of this Proposal

The essential task of evolutionary psychology is to explain human psychological mechanisms in terms of adaptive functions in the environment of evolutionary adaptation.⁴⁰ The human religious impulse appears to be one set of these species-specific psychological traits.⁴¹ Evolutionary psychology offers an opportunity for scientists to propose adaptive functions explaining the religious impulse. I believe such proposals will reveal a striking complementarity between natural and Christian descriptions of human psychology.

Because evolutionary psychology is a protoscience, a field which has some but not all the qualities of a mature science, the following proposal will necessarily be speculative.⁴² However, the hypothesis must be expressed before others can explore the evidence for and against its acceptability. The hypothesis does not address underlying social and philosophical problems associated with Darwinism.⁴³ However, it does elucidate a line of thought which could dramatically impact the social sciences and natural philosophy.

Why Are Humans Aware of Something Beyond Nature?

Ancestral Social Adaptations

During hominid evolution, species ancestral to humans adopted novel social arrangements. One social arrangement was monogamy.⁴⁴ Neither gorillas nor

chimpanzees, human's closest relatives, practice this social arrangement. The gibbon does. One explanation for gibbon monogamy is that an adult male will slaughter the infants of a new female mate (most likely, infants sired by other males).⁴⁵ A male who remains with his cohort will experience greater reproductive success than one who does not, because such behavior protects his infants. Under these circumstances, monogamy increases the reproductive fitness of the male.

Human monogamy probably solved a different adaptive function. C. Owen Lovejoy, in "The Origin of Man," proposed that monogamy arose to solve problems associated with the combination of long childhood (characteristic of all great apes) and the economy of a resource-poor environment which favored walking over tree dwelling.⁴⁶ Although C. Owen Lovejoy's claim that monogamy and walking coevolved has been criticized on the basis that the *australopithecines* were sexually dimorphic,⁴⁷ the selection pressures he delineates may have played a role in speciation toward the *Homo* genus.⁴⁸ *Australopithecine* males were much larger than females. Male and female *Homo erectus* were of similar stature. Survival of *Homo* (and possibly, *australopithecine*) children may have depended on both parents providing resources. The female provided them from short distances and the male from longer.

Monogamy could not evolve without assurances that the providing male was the father of the child. Otherwise, adaptations favoring a monogamy-based psychology could not be propagated. These assurances were not communicated in spoken language. Rather, they were expressed through "body language" by the mate and other members of the group, both intentionally and unintentionally.

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C. Owen Lovejoy's analysis allows the proposal of a rich variety of adaptive psychological mechanisms regarding mate selection and child rearing. Besides a reduction in sexual dimorphism, hominid brain size increased dramatically with speciation from the *Australopithecus* to *Homo* genus, suggesting that the neurological structures accommodating these adaptations were overlaid onto and integrated into an older mammalian neural architecture.⁴⁹

The larger brain of the *Homo* genus may be correlated by interspecies comparison with fairly large group sizes.⁵⁰ Whether *Homo habilis* and *erectus* traveled in large groups or in associations of small groups, each individual had to recognize members of the

group or association and behave appropriately. Appropriate behaviors took place within social arrangements characteristic of individuals pursuing their own reproductive interest among a group of related individuals. These social arrangements have been described by

Richard Alexander in *The Biology of Moral Systems*.⁵¹ They extend from direct reciprocity, to indirect reciprocity, to reciprocal altruism, to unreciprocated altruism. These social arrangements helped the individual in a variety of ways and maintained group cohesion in the face of group competition. Each individual's reproductive fitness was increasingly mediated by others within the group. Alexander sees competition between groups as a social selection pressure decoupled from environmental selection pressures. The result was an evolutionary "arms race" selecting for higher and higher levels of intragroup cohesion.

Richard Alexander must be read with care, since he approaches behavior from a sociobiological perspective.⁵² However, his analysis provides a basis for postulating a wide array of psychological mechanisms devoted to surviving and cooperating in a social environment where group cohesion is a matter of life or death.

Psychological Adaptations

Our purpose is not to speculate on the wealth of psychological mechanisms suggested by these two social adaptations. Rather, we will focus on the inherent "logical" relationship between psychological mechanisms adaptive to the novel social arrangements and previously evolved psychological mechanisms. Humans share a previously evolved psychology with other mammals. With few exceptions, mammals behave according to a psychology of pleasure-seeking and pain-avoidance. Exceptions include mating and raising the young, when other psychologies override pleasure-seeking and pain-avoidance to some degree. These psychological mechanisms increase reproductive success as parents "invest" or (perhaps better) "sacrifice" to protect and rear their own.

Mating, gestation, and rearing of young are brief and seasonal in lower mammals. Here, parental sacrifices are limited in duration. In higher mammals, more parental investment is required, which explains the long delay between births observed in species like the chimpanzee.⁵³ Ancestral monogamous hominids, like humans, would have a long, perhaps lifelong, investment due to overlapping periods of child rearing. Under these circumstances, nature would select, for the long-term, psychological mechanisms capable of overriding the standard mammalian psychologies based on pleasure-seeking and pain-avoidance. The "arms race" character of selection due to intergroup conflict favored evolution of similar psychological mechanisms devoted to eliciting intragroup cooperation and reducing intragroup conflict. The individual had to sacrifice for others in the group.

The social arrangements adopted by ancestral hominids favored the evolution of a novel psychology designed to control behaviors motivated by pleasure-seeking and pain-avoidance. The focus of the new psychology was to nurture, cooperate with, and protect relatives and other members of the group. On the other hand, the focus of the old psychology was to nurture and protect self without regard for others. The relational logic between the two psychologies is transcendent. Novel psychological adaptations served to "rise above" an older psychology common to all mammals. If animals think "naturally," then this novel transcendent psychology may be construed as rising above (Latin: super)

nature. Most likely, these psychological adaptations were originally manifest as emotional responses. However, once emotions were attributed to experiences or relationships,⁵⁴ cognition of something beyond nature would have also evolved in order to communicate this transcendent psychology.

The Emotional and Cognitive Structure of Human Awareness of Something Beyond Nature

Evidence for human awareness of something beyond nature may be found in the visual arts, music, and ritual acts of every culture and historical period. Some of the earliest archaeological evidence is found in Upper Paleolithic art and burials.⁵⁵ These relics may be regarded as manifestations of mental capabilities dating from the earliest anatomically modern humans. These expressions of awareness did not involve rational or scientific modes of thought.⁵⁶

What information does religious expression convey? Evolutionary psychology understands nature and nurture to be inseparable. We learn religion from others and are transformed in the process. Among other things, religious acts "teach," both consciously and unconsciously, transcendent emotional and cognitive psychological mechanisms that serve to control "natural" responses motivated by pleasure-seeking and pain-avoidance. Every individual may be genetically predisposed to learn particular information from the social environment necessary for these transcendent psychological mechanisms to function. With that learning, the individual prepares for the trials and tribulations of raising a family and of adult compromise.

Religious rituals convey meaning in subtle and complex manners that can only be described as otherworldly. Anthropologists have long attempted to explain the multilevel communication of ritual acts.⁵⁷ If religious rituals "teach" transcendent psychological mechanisms, then the otherworldly aspect may be critical for effective communication. In particular, our mammalian heritage prepares us to analyze the world according to natural constants. It also disposes us to orient to gravity, to eat when hungry, to mate, to seek pleasure, to avoid pain, and so forth. Religious rituals may contest these "natural constant" forms of analysis in order to teach our transcendent psychological mechanisms that natural responses and modes of thought are insufficient for survival. This may explain why humans practice religious traditions in which natural laws are defied and rational explanations fail to adequately explain ritual practices and claims.

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Let me give two examples of how aspects of religious tradition may be appreciated by this hypothesis. First, the hypothesis suggests basic

historical period.

traits shared by all sustained religious traditions. For example, in the faith-oriented Victorian society, adults judged one another's behavior on criteria reminiscent of a transcendent psychology. Pleasure-seeking and pain-avoidance were condemned. Restraint and duty praised.⁵⁸ Second, the hypothesis points out the relevance of education in a religious tradition that defies "natural constant" forms of analysis. For example, the Victorians viewed the education of youth in a religious framework. The rationale for teaching pragmatic skills, such as reading, was stated in religious terms. Religious tradition was taught to youth through supernature-rich stories and rituals. Failure to successfully teach religion was viewed as a cause of family and moral decay.⁵⁹

Clearly, the hypothesis that our human awareness of something beyond nature is explained by the evolution of transcendent psychological mechanisms adapted to novel hominid social arrangements is speculative and warrants further investigation. But just as obvious is the conclusion that this type of hypothesis will impact all social science and provide the impetus for a wide range of academic work. It establishes religious activity as biologically, as well as intellectually and emotionally, motivated. Intellectual and emotional responses are mental and behavioral consequences of evolved psychological mechanisms. They vary in degree among individuals, but not in kind. The variety of religious expression derives from individuals in groups constructing methods to activate and use psychological programs within historical, social, and natural contingencies.

Mind-Boggling Implications

This hypothesis paradoxically eclipses the naturalist philosophy which inspired Darwinism. Humans psychologically require the divine in order to raise children productively and to maintain group (or societal) cohesion. The developing human innately anticipates the presence of a religious tradition within his or her social environment. Inherited psychological mechanisms "unfold" and "learn" in response to the challenge of religious rituals that evoke an awareness of something beyond nature. With that cognitive and emotive learning, the person integrates into family and community. Our recognition of something beyond nature, our search and our longing, may well be legacies of our evolutionary past. However, naturalism alone cannot provide that "something beyond nature" so crucial to our natural design.

Whether or not one subscribes to Darwinism, one has to be amazed at the turn of events occasioned by this hypothesis. We have achieved a perspective where the essence of the biblical creation of humans in the image of God is unexpectedly imaged by a proposal in evolutionary psychology on the adaptive function of human awareness of something beyond nature. In achieving this perspective, we recognize a "mythic" or "supernatural" implication to evolutionary science that complements Judeo-Christian tradition.

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