

# Evolutionary Psychology: A Paradigm Whose Time May Come: A Response to J. Raymond Zimmer

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*Evolutionary Psychology (EP) is a controversial modern psychological theory. An offshoot of sociobiology, EP proposes that humans have developed psychological mechanisms which reflect their evolutionary past, but which may not currently maximize fitness for survival. Proponents contend that EP offers a meta-model which can unify and transform modern psychology - which they point out is now fragmented by many micro-theories and detached empirical findings, and further divided by the emergence of hermeneutical approaches. Zimmer, an EP enthusiast, proposes (PSCF 50, no. 3: 176-84) that EP offers a paradigm which is compatible with Christian beliefs. We agree that EP offers some unique integrative features, but - along with other critics - doubt that it will soon become a dominant psychological theory. Also, while EP provides some opportunities for integration with Christian beliefs, major EP proponents are hostile toward religion - except as an evolutionary social phenomenon - and their anti-Christian views are likely to be thoroughly interwoven into EP. Thus EP must be approached with care to identify the ways it is in tension with Christian beliefs as well as the ways it is compatible with them.*

Zimmer enthusiastically recommends Evolutionary Psychology (EP) on the premises that (a) EP is a paradigm that "promises to irrevocably change the traditional social sciences" in the coming years,<sup>1</sup> and (b) it is a paradigm that is compatible with Christian beliefs and "establishes religious activity as biologically, as well as intellectually and emotionally, motivated."<sup>2</sup> He illustrates this compatibility by proposing an evolutionary-flavored hypothesis of religion that, Zimmer declares, indicates human awareness of something beyond nature and offers unique starting points for integrating EP theories and Christian views.

While Zimmer is not alone in his support for EP - and many are similarly impressed by this paradigm - the overall reviews of EP are decidedly mixed, as others have offered significant questions and criticisms of this emerging perspective. We tentatively agree that EP does have unique areas of compatibility with Christian beliefs, but we also

acknowledge particular areas of existing and potential conflict. The specific hypothesis that Zimmer offers has been addressed in the literature, and indirectly dismissed; but other concepts may prove to be fruitful starting points for dialogue between Christianity and EP.

### **Evolutionary Psychology: Playing to Mixed Reviews**

EP proposes that there is variation in hereditary traits, that some traits are more conducive to survival and some less so, and that those traits that are more conducive to survival at any given time tend to become prevalent within the population. Many have proposed that this evolutionary history provides the framework through which human psychology can be understood.<sup>3</sup>

Proponents of sociobiology, a forerunner of EP, postulated that traits (or mechanisms) evolved in a way that predisposed humans toward "inclusive fitness," or the goal of maximizing their gene representation in future generations.<sup>4</sup> Evolutionary psychologists differed by declaring that these traits or mechanisms, rather than having a nature or purpose of their own, merely represented the psychological grid that was crafted in the past by evolution and through which information from our current environments is filtered.<sup>5</sup> Mechanisms, therefore, could be activated in ways that were not necessarily fitness maximizing. Evolutionary psychologists have proposed that by understanding the environments in which these mechanisms evolved we come to know our inherited psychological grid and can better understand our interaction with present stimuli.<sup>6</sup>

Dispassionate discourse on the proposals of EP seems to be the exception rather than the rule. For its enthusiasts, EP is often characterized as the coming paradigm that will vanquish lesser pretenders: a meta-theory that will restore the scientific underpinnings to a foundationless community of social scientists. To its detractors, it is sometimes portrayed as a field in which research designs and methods are suspect, conclusions are vulnerable to unscrupulous political use, and more parsimonious explanations of behavior are ignored.

#### **Support for EP**

Zimmer is not alone in his belief that EP "will usher in a new science of human behavior based on the Darwinian paradigm."<sup>7</sup> Key apologist David M. Buss declared that EP was a paradigm "whose time had come," and that only those in the "backwaters of academia" could fail to understand the basics of its various theories.<sup>8</sup> Others have suggested that EP is a theory around which psychology can organize itself.<sup>9</sup>

The current state of the social sciences has been described by EP proponents as conceptual confusion in which there are mixtures of mini-theories and empirical findings that proliferate but do not connect or complement.<sup>10</sup> Psychology, with its embrace of postmodernistic relativism, has been characterized as becoming increasingly distant from the natural sciences. EP advocates suggest this is a precarious position in an age when advances in the biological study of the human mind are influencing both scientific and

political communities.<sup>11</sup> Tooby and Cosmides observed that the growing separation from the rest of science has greatly hampered progress for psychology and the social sciences.<sup>12</sup>

In answer to this purported disarray and lack of progress in the social sciences, evolutionary psychologists have promoted EP as a strong, organizing meta-theory. Buss declared that psychology "must be anchored or informed by evolutionary principles,"<sup>13</sup> and Tooby and Cosmides have presented their Integrated Causal Model as an evolution-based bridge between the social sciences and the rest of science.<sup>14</sup>

LaCerra and Kurzban asserted that a renaissance in the sciences has been achieved as evolutionary psychologists working in various fields have provided bridges among disciplines - a synthesis "long awaited by scholars and scientists."<sup>16</sup> They attributed this accomplishment to the evolutionary psychologist's acknowledgment of the human species as a part of the natural universe and, as such, subject to natural laws. The reemphasis on natural laws and "hard" science is a theme with evolutionary writers. Tooby and Cosmides sharply criticized what they have called the Standard Social Science Model (SSSM) for encouraging "intellectual isolationism" in abandoning causal analysis in favor of approaching social phenomena as "texts to be interpreted ... as one might interpret literature."<sup>17</sup>

Embracing EP has been proposed as the antidote to such "soft science." Harris and Pashler proposed that an understanding of Darwinian principles could help psychologists become more disciplined in advocating functional explanations for behavior within the conceptual framework of evolution.<sup>18</sup> Knight argued that focusing on functionalism, in the context of EP, could foster a return to a hypothetico-deductive theoretical base.<sup>19</sup> Holcomb - who is not necessarily an EP advocate - declared that research in EP had a firm basis in evolutionary biology.<sup>20</sup>

### **Criticisms of EP**

Others are less convinced of the scientific integrity and validity of EP research. They point to research design flaws, dubious scientific methods, and controversial applications of EP conclusions as areas of concern. Additionally, critics charge that more parsimonious explanations for behavior are ignored or inadequately dealt with by EP researchers.

It is ironic that EP, which is billed by its supporters as the paradigm by which psychology can return to an emphasis on the scientific method, is harshly criticized as a theory which emphasizes "just so" stories consisting of post hoc explanations for common behaviors. Some conclusions from EP research, such as "findings" that men like pretty, young, healthy women, hardly seem noteworthy - and invite derision when combined with evolutionary post hoc analysis of such "mechanisms." Holcomb noted that such post hoc explanations preclude falsifiability and must be regarded as pseudoscientific reasoning.<sup>21</sup>

Holcomb also noted the dearth of EP research that involved testing novel predictions as opposed to predictions that have already been demonstrated in alternative theories. Resolving this problem would require EP hypotheses that would predict behavior which rival models, such as strict cultural explanations, would not predict. Merely predicting the familiar, he concluded, keeps EP from being completely scientific.<sup>22</sup> Said differently, there is little reason to adopt a new theory which merely explains old data which is already adequately explained by existing theories.

Others have criticized the methodology of EP as consisting of non-experimental - sometimes non-quantitative - approaches that rely on poorly defined attitudes and concepts, measured by surveys and questionnaires of equally dubious reliability. Similarly, EP findings have been challenged as capricious and weak due to poor research designs and methods. Schlinger complained that evolutionary theorists don't conduct experiments or cite experimental data but rely on questionable anecdotal and statistical evidence to support their theories.<sup>23</sup>

EP theorists, additionally, are faulted for depending on cross-species analysis in formulating theories about environmental challenges and adaptations.<sup>24</sup> The appropriateness of such methods has been challenged on the basis that seemingly identical behaviors in separate species may indicate superficial, as opposed to functional, similarities. EP has not proposed an objective way of resolving this issue, Schlinger noted.<sup>25</sup>

In addition to criticisms of theory as inadequately developed, concern has been raised about the political nature and potential misuse of EP conclusions. Caporael and Brewer asserted that evolutionary positions are sometimes linked to social agendas, based on the worldview belief that what is, should be - or will be.<sup>26</sup> In other words, if mechanisms exist within us as a result of evolution, there is a tendency to believe that these mechanisms are inevitable.<sup>27</sup> The fear exists that this perspective may be used to justify a passive social response to violent, racist, or sexist behavior because it merely expresses our true natures.<sup>28</sup>

Some of the harshest criticism of EP, however, involves the complaint that theorists ignore or underestimate alternative explanations of behavior. Harris and Pashler rejected the domain specific adaptations proposed by EP to explain mate choice.<sup>29</sup> They proposed a more parsimonious explanation in terms of domain general faculties of rational choice and cognition. Cultural evolution and the transfer of information across generations may also resolve certain adaptive problems in more economical ways than domain specific mechanisms.<sup>30</sup> Buss, particularly, has been criticized for dismissing culture merely as dependent on evolved mechanisms for its existence.<sup>31</sup>

Many also charge that EP theorists' perspectives of behavior have neglected group variables and social context.<sup>32</sup> For example, proponents of feminist theory have claimed that membership in dominant versus subordinate groups offers a more parsimonious assessment of gender differences than does EP.<sup>33</sup>

## **EP Responses to Criticisms**

The criticisms of EP have been addressed, to one degree or another, in the literature. Wright responded to the charge of post hoc storytelling by admitting that coming up with plausible stories is, in a way, what evolutionary theorists do.<sup>34</sup> He quickly added, however, that some "just so stories" are clearly better than others and are helpful in conceptualizing the nature of past adaptive information processing problems and solutions. Others have pointed out that once this initial "story-telling part" of conceptualization has occurred, specific, empirical hypotheses can then be formulated and tested.<sup>35</sup>

Buss addressed additional criticisms by declaring that, while certain levels of evolutionary theory were not subject to falsification, derivatives of larger concepts were indeed subject to being disproved.<sup>36</sup> He further stated that the empirical methods used by EP psychologists - such as experimental methods, questionnaire methods, analysis of public documents, observational methods, and psychophysiological techniques - are the same as the ones used by psychologists from other perspectives. Additionally, EP was presented as a paradigm that did not imply genetic determinism or ignore social context and environment.<sup>37</sup>

## **EP's Current Status**

Zimmer's statement that EP may "irrevocably change the traditional sciences" seems premature in view of the concerns presented by its critics.<sup>38</sup> EP appears to be an adolescent paradigm at present - enthusiastic, speculative, and pushing boundaries. Holcomb described and endorsed it as a protoscience;<sup>39</sup> Zimmer concurs. In Holcomb's view, EP has some qualities of a mature science and lacks others; it is more than mere speculation, but not ready to be measured as a mature scientific entity.

Many critics seem to endorse EP as a useful paradigm - but one that is not likely to take over the scientific community.<sup>40</sup> Evolutionary perspectives are declared likely to have an impact on psychological theory, some training in EP is advocated as a part of the education of every psychologist, and evolutionary psychologists are commended for proposing interesting hypotheses for examination and debate.<sup>41</sup> Nevertheless, the proposals that EP theorists have offered are characterized as far from conclusive. While the impact of EP on the social sciences may be less than its advocates propose, the evolutionary perspective does seem to offer intriguing possibilities for dialogue with religion and, ironically, with an old foe - Christianity.

## **Evolutionary Psychology and Christianity**

Zimmer declares that EP theories may be complementary, and not antagonistic, to Christian views.<sup>42</sup> We agree that there are definite areas in which EP perspectives appear to be compatible with Christianity, and certain areas of interaction may prove interesting starting points for dialogue between these two fields. There are also elements which

suggest potential and actual conflict and which suggest needed cautions as integration with Christian views is considered.

### **Particular Compatibilities: EP and Christian Theology**

Human nature is flawed. Buss described what he termed an anti-naturalistic fallacy - the tendency for people to have grandiose visions of what it is to be human. According to Buss, humans want to see themselves as one with nature and each other; war and aggression are seen as aberrations, as corruptions of the grand human nature by cultural inadequacies.<sup>43</sup> This view is sharply at odds with the EP position that, through evolution, aggressive and selfish traits have become inherent qualities.<sup>44</sup>

Proponents of what Tooby and Cosmides have labeled the Standard Social Science Model (SSSM) staunchly resist attempts to declare that humans have anything resembling inherent qualities. For SSSM theorists, human nature is essentially viewed as an empty container waiting to be filled by socialization. Accordingly, psychology's role in the SSSM is reduced to the study of the process of socialization and how this process influences domain general capacities. In the SSSM, these capacities must be conceptualized as content free and content independent; the strong emphasis is on human malleability. The moral appeal of the SSSM, Tooby and Cosmides claim, comes from this malleability and the hope that social interventions can prevent or alleviate the sufferings and problems of humanity.<sup>45</sup>

Wright presented the opposing EP perspective - that accepting the idea of a human nature is the first part of becoming an evolutionary psychologist. He further added that the picture of human nature, understood in EP terms, is not flattering. Wright wrote of the tendencies of this inherent nature: "We are addicted to status ... we are self promoters and social climbers ... our generosity and affection have a narrow underlying purpose ... we value the affection of high status people ..."<sup>46</sup>

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As competing paradigms collide, an ideological and moral conflict ensues. Tooby and Cosmides described this conflict as a morality play in which those who view humans as having a nature - and a nature that is selfish - are accused of adopting ideological perspectives that constrain and limit.<sup>47</sup> Buss acknowledged that evolutionary psychologists are often accused of being ideologically driven; in response, he pointed out that many that make this criticism are themselves ideologically driven by the idea - despite the evidence - of human malleability and improvability.<sup>48</sup>

The traditional Christian view of humanity closely resembles what EP theorists have proposed: that human nature is inherently self-centered. All forms of what Christians call sin have been attributed, at least by some theologians, to selfishness.<sup>49</sup> This view of human nature, too, has been criticized by some social scientists as constraining - and also as limiting the potential malleability of human nature. Traditional Christianity has even been attacked as one of the cultural inadequacies that has had a corrupting influence on humans.

The compatibility between the Christian and EP views of human nature is obvious. It is ironic, in view of the past conflicts between these two perspectives, that Christianity and EP - at least on the issue of human nature - are ideologically compatible and similarly criticized by many in the social sciences as morally deficient in "constraining" human potential.

### **Relativism and Subjectivism Rejected**

Tooby and Cosmides said that the social sciences have abandoned the scientific enterprise, and they criticized this turning away from natural sciences toward explanations of social behavior based on relativistic frames of reference. The growing popularity of this perspective, they somewhat cynically suggested, has less to do with illumination than with an aversion on the part of scholars for the difficult task of producing scientifically valid knowledge which is consistent with other knowledge and which can withstand critical examination. They concluded with a damning indictment:

Those who jettison the epistemological standards of science are no longer in a position to use their intellectual product to make any claims about what is true of the world or to dispute the others' claims about what is true.<sup>50</sup>

Agreement with this statement is evident in the writing of David Snoke, who declared that inductive epistemology was not only the basis for science, but that it provided the foundation for universal ethics from the Christian context. The position of many in modern philosophy that inductive epistemology is dead rests on the premise that there is no absolute certainty which can be used as a starting point. Snoke suggested that science and modern religion had "painted themselves in a corner" in declaring that "anyone can choose to believe anything, and there is nothing we can do about it."<sup>51</sup>

Snoke noted that philosophers and theologians seemed to struggle with ideas of probability and uncertainty in ways that working scientists did not - and that while absolute certainty was philosophically unattainable, working certainty (through the laws of evidence and experience) was imminently feasible - and has served as the basis for most of the scientific advances that have occurred. He also argued that we become certain of religious propositions in Christianity in much the same way. Rather than an emphasis on a large "leap of faith," Snoke contended that the Bible portrays faith as a smaller jump subsequent to a person being convinced through experience and evidence obtained through examining Scripture, witnesses, testimony, and signs.<sup>52</sup> Our view is that faith is an essential element of all scientific - and even nonscientific - views: faith that what has happened in the past will continue to happen in the future, and that we know with

sufficient certainty so that we can base our lives on our understanding of the world around us.

Finally, EP and traditional Christianity may be thought of as sharing concerns about the encroachment of relativism into areas that have heretofore been informed by inductive epistemology. Tooby and Cosmides viewed the anti-scientific sentiment as "leaving a hole in the fabric of our organized knowledge of the world where the human sciences should be."<sup>53</sup> Snoke, who acknowledged that some have sought to protect the faith by constructing epistemologies that prevent any experiences from conflicting with Christianity, viewed such efforts as leading to a relativism that ultimately renders Christian belief incoherent and irrelevant.<sup>54</sup>

### **Peaceful Coexistence: EP and Genesis**

At first glance, the area that has traditionally been the battleground between evolutionists and Christians - how we interpret Genesis - now seems to be the epitome of peaceful coexistence for EP. A common Christian perspective in recent scientific literature seems to be that literary consistency in Genesis is achieved only through a poetic interpretation of the first few chapters of the Bible. There are, however, some interesting evolution-friendly variations on this theme - and some questioning perspectives that echo concerns raised by evolutionary theorists themselves.

Many Christians in the scientific community interpret the early chapters of Genesis as a message filled with poetry and symbolism which was never intended to be a scientific, literal description of creation.<sup>55</sup> The text itself, Waltke asserted, argues against a sequential, historical narrative; the creation of light on the first day - and of the sun, moon, and stars on the fourth day - should serve as indicators that Genesis 1 has been constructed for theological rather than scientific reasons.<sup>56</sup> The conclusion reached by proponents of this view is that interpretations of this passage provide few constraints for scientific conceptualizations of origins.<sup>57</sup>

Other evolution-friendly theories are interesting though more speculative. Wilcox, arguing from evidence in paleoanthropology, suggested that changes in artifacts and behavior occurred around 150,000 years ago which indicated the sudden appearance of anatomically modern beings that bore the "image of God";<sup>58</sup> Zimmer used Genesis 1:26-31, to compare the six days of creation with six epochs of evolutionary development proposed by scientists;<sup>59</sup> and Fischer argued for the insertion of an historical Adam and Eve into an existing race of evolving humans.<sup>60</sup>

While evolution-friendly accounts of Genesis - in both standard and creative form - seem to predominate, other Christian scientists, who incorporate the fossil record and the questions of evolutionists themselves, raise concerns. Clark wrote of a traditional Darwinian view of a slow, continuous evolution as having become untenable for many scientists - many of whom have subscribed to a newer theory known as punctuated equilibrium.<sup>61</sup> Mills also wrote of this theory, proposed by Eldredge and Gould in 1972, which described evolution as progressing with sudden jumps punctuated by longer

periods of little change. He noted that this theory was formulated to account for fossil gaps in the geological record - but complained that the theorists provided no mechanism for the sudden appearance of new life forms at the macroevolutionary level. Mills, a professor of biochemistry, proposed that his idea of God as a provider of new genetic information at critical points did not alter but complemented this theory of punctuated equilibrium. This proposal of God as a provider of genetic information also addressed his concerns about the mathematical improbabilities of genetic information needed by complex organisms being supplied from simple one-celled organisms.<sup>62</sup> Newman stated similar concerns, which he declared invalidated evolutionary perspectives; he opted for old-earth creationism - a view which acknowledges the geological record - but advocated (as did Mills) the miraculous interventions of God.<sup>63</sup>

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Some Christians, however, continue to reject evolution entirely. Johnson, for example, contends that scientific creationism was inadequate on two grounds. First, he argued, evolution has been defined in such a way as to presume metaphysical naturalism - a view inherently in conflict with creationism. Second, he claimed that the data do not support the evolutionary hypothesis. For Johnson, evolution fails both as worldview and as science.<sup>64</sup>

Johnson's view notwithstanding, many Christians in the scientific community agree that evolutionary perspectives and Christianity are at least partly compatible. Despite this agreement among many Christians and EP advocates, an important area of potential conflict involves the question of whether the field of EP is as open to Christianity.

### **Potential Conflict: EP's View of Christianity**

Zimmer proposes that a universal impulse toward God represents a significant opportunity for Christian integration with EP. He contends that humans have evolved so that they are aware of something beyond nature-something transcendent, otherworldly, or supernatural - because such awareness was adaptive in fostering monogamy and long-term care of offspring. He postulates that religious activity is at least in part biologically motivated. As a result "humans psychologically require the divine in order to raise children productively and to maintain group (or societal) cohesion." He concludes that "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."<sup>65</sup>

While Zimmer and many other scientifically minded Christians have been fairly open to evolutionary perspectives, the writing of some EP proponents suggests that evolutionary

psychologists may not view Christianity-or religion in general - so charitably. Thus they will likely reject Zimmer's proposals. EP advocate Wright was particularly pointed in declaring that religion allowed the ancient sages to expand their power, keeping the masses satisfied with limited material goods by fostering a future-world orientation. Wright proposed that religious teachings were comparable to the act of injecting heroin to produce a feeling of harmony in the short-term - but with adverse long-term consequences.<sup>66</sup>

At other times EP advocates have been more appreciative of the practical aspects of religion. Wright declared religion to be useful in curbing appetites harmful to evolutionary self-interest, in serving as an intergenerational vehicle for conveying fitness maximizing maxims, and as a proponent of monogamy. He viewed these factors as a stabilizing force in society.<sup>67</sup> Gould theorized that the evolution of larger brains and consciousness forced humanity to deal with mortality. Gould believed that the development of religion was the human answer to this challenge.<sup>68</sup>

EP proponents' reactions to religion may be characterized as cynical and pragmatic. It is the latter position which seems to give the most trouble to Zimmer's belief that a universal impulse toward God represents a significant opportunity for Christian integration with EP. For EP proponents the "God idea" can be easily invoked as an explanation without serious consideration of "the God who is there" (the ontological reality of God).<sup>69</sup> We concur with Zimmer that transcultural expression has been a mark of significance as evolutionary psychologists attempt to identify adaptive mechanisms. However, the ease with which alternative explanations have been constructed for this particular transcultural expression points simultaneously to two areas of concern: the capricious nature of EP's post hoc analysis, and the evidence that EP psychologists often reject the notion that religion points to anything beyond nature.

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The ease of incorporating Zimmer's hypothesis suggests that hypotheses that are congruent with EP - such as conceptualizing religious mechanisms which fit evolutionary paradigms - may prove less fruitful for integrative efforts than proposals which start from EP expectations and propose counterintuitive hypotheses. Wright touched on this issue when he expressed wonder at the longevity of a religion that proposed parameters that seemed to him counter to evolved appetites.<sup>70</sup> Might other religious practices which are counterintuitive to the EP paradigm prove interesting as beginning points of dialogue between the two fields as well?

## Summary and Conclusion

While in agreement with Zimmer that EP provides some unique opportunities for integrative efforts, we are neither so positive about the prospects of EP as a unifying psychological theory, nor so optimistic about its potential for integrative gains. In particular, we are concerned that many EP psychologists hold worldviews no less hostile toward Christianity than those of major proponents of other psychological theories. We are concerned that easy acceptance of EP may be an easy way which is less fruitful than an effort to examine the ways in which EP is in tension with widely held Christian views. Ultimately both agreements and tensions must be explored. But we are concerned that a too-casual endorsement of EP may lull us into eschewing the more difficult - but more important - task of discovering important tensions and disagreements. The worldview issues are both subtle and pervasive. They are also vitally important. In the words of Bevan and Kessel,

most often implicit, ideologies are complex, not easily broken into elements-they are like sand at a picnic: they get into everything. All of this means that to talk of scholarship and science as separate from the life experience, the intentions, the values, the worldview, and social life of the people who create it is to deny its fundamental character as a human activity.<sup>71</sup>

The challenge for us in dealing integratively with EP psychology is to distinguish sand and sandwich, to consume the one while not being choked by the other.

In short, EP remains a minor theory within psychology. Thus an enthusiastic embrace of EP seems premature. This is equally true for EP as a psychological theory per se and for EP as a theory for integration with Christian beliefs. We advocate that Christians proceed with caution rather than full speed ahead.

### Notes

<sup>1</sup>J.R. Zimmer, "Evolutionary Psychology Challenges the Current Social Sciences," *Perspectives on Science and Christian Faith* 49, no. 3 (September 1998): 176-84.

<sup>2</sup>Ibid., 176, abstract.

<sup>3</sup>D.M. Buss, "Evolutionary Psychology: A New Paradigm for Psychological Science," *Psychological Inquiry* 6, no. 1 (1995): 1-30; L. Cosmides, J. Tooby, and J.H. Barkow, "Introduction: Evolutionary Psychology and Conceptual Integration," in J. Barkow, L. Cosmides, and J. Tooby, (Eds.), *The Adapted Mind* (New York: Oxford University Press, 1992), 3-15; R. Wright, *The Moral Animal: Why We Are the Way We Are: The New Science of Evolutionary Psychology* (New York: Pantheon Books, 1994).

<sup>4</sup>D.M. Buss, "Evolutionary Social Psychology: Prospects and Pitfalls," *Motivation and Emotion* 14, no. 4 (1990): 265-86.

<sup>5</sup>J.H. Barkow, J. Tooby, and L. Cosmides, *The Adapted Mind*.

<sup>6</sup>R. Wright, *The Moral Animal*.

- <sup>7</sup>J.R. Zimmer, "Evolutionary Psychology Challenges the Current Social Sciences," 1.
- <sup>8</sup>D.M. Buss, "The Future of Evolutionary Psychology," *Psychological Inquiry* 6, no. 1 (1995): 81.
- <sup>9</sup>M. Knight, "Darwinian Functionalism: A Cognitive Science Paradigm," *The Psychological Record* 44 (1994): 271-87.
- <sup>10</sup>D.M. Buss, "Evolutionary Psychology."
- <sup>11</sup>P. LaCerra and R. Kurzban, "The Structure of Scientific Revolutions and the Nature of the Adapted Mind," *Psychological Inquiry* 6, no. 1 (1995): 62-5.
- <sup>12</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture," in J.H. Barkow, J. Tooby, and L. Cosmides, (Eds.), *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. (New York: Oxford University Press, 1992), 19-36.
- <sup>13</sup>D.M. Buss, "The Future of Evolutionary Psychology," 81.
- <sup>14</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture." It may be noteworthy that Christian psychologists have proposed that a Christian worldview can unify psychology. G.R. Collins, *The Rebuilding of Psychology* (Wheaton, IL: Tyndale House, 1977); R.L. Koteskey, *Psychology from a Christian Perspective* (Nashville, TN: Abingdon, 1980); R.L. Koteskey, *Psychology from a Christian Perspective*, 2d ed. (Washington, DC: University Press of America, 1991).
- <sup>16</sup>P. LaCerra and R. Kurzban, "The Structure of Scientific Revolutions ," 62.
- <sup>17</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture," 22.
- <sup>18</sup>C.R. Harris and H.E. Pashler, "Evolution and Human Emotions," *Psychological Inquiry* 6, no. 1 (1995): 44-6.
- <sup>19</sup>M. Knight, "Darwinian Functionalism."
- <sup>20</sup>H.R. Holcomb, "Moving Beyond Just-So Stories: Evolutionary Psychology as Protoscience," *Skeptic* 4, no. 1 (1996): 60-6.
- <sup>21</sup>Ibid.
- <sup>22</sup>Ibid.
- <sup>23</sup>H.D. Schlinger, Jr., "How the Human Got Its Spots: A Critical Analysis of the Just So Stories of Evolutionary Psychology," *Skeptic* 4, no. 1 (1996): 68-76.

- <sup>24</sup>S.W. Gangestad, "The New Evolutionary Psychology: Prospects and Challenges," *Psychological Inquiry* 6, no. 1 (1995): 38-41.
- <sup>25</sup>H.D. Schlinger, Jr., "How the Human Got Its Spots."
- <sup>26</sup>L.R. Caporael and M.B. Brewer, "Reviving Evolutionary Psychology: Biology Meets Society," *Journal of Social Issues* 47, no. 3 (1991): 187-95.
- <sup>27</sup>N. Cantor, "Social Psychology and Sociobiology: What Can We Leave to Evolution" *Motivation and Emotion* 14, no. 4 (1990): 245-54.
- <sup>28</sup>S. Oyama, "Bodies and Minds: Dualism in Evolutionary Theory," *Journal of Social Issues* 47, no. 3 (1991): 27-42.
- <sup>29</sup>C.R. Harris and H.E. Pashler, "Evolution and Human Emotions," *Psychological Inquiry* 6, no. 1 (1995): 44-6.
- <sup>30</sup>J.A. Simpson, "A Paradigm Whose Time Has Come," *Psychological Inquiry* 6, no. 1 (1995): 71-5.
- <sup>31</sup>R.A. Hinde, "The Adaptionist Approach Has Limits," *Psychological Inquiry* 6, no. 1 (1995): 50-3.
- <sup>32</sup>Ibid.; C.B. Travis and C.P. Yeager, Sexual Selection, "Parental Investment, and Sexism," *Journal of Social Issues* 47, no. 3 (1991): 117-29; L.R. Caporael and M.B. Brewer, "Hierarchical Evolutionary Theory: There is an Alternative, and It's Not Creationism," *Psychological Inquiry* 6, no. 1 (1995): 31-4.
- <sup>33</sup>L.B. Silverstein, "Evolutionary Psychology and the Search For Sex Differences," *American Psychologist* 51, no. 2 (1996): 160-1.
- <sup>34</sup>R. Wright, *The Moral Animal*.
- <sup>35</sup>D.M. Buss, Evolutionary Psychology and L. Cosmides, J. Tooby, and J.H. Barkow, "Introduction: Evolutionary Psychology and Conceptual Integration."
- <sup>36</sup>D.M. Buss, "Evolutionary Social Psychology."
- <sup>37</sup>Ibid.
- <sup>38</sup>J.R. Zimmer, "Evolutionary Psychology," 176, abstract.
- <sup>39</sup>H.R. Holcomb, .Moving Beyond Just-So Stories..

- <sup>40</sup>Ibid.; W.G. Graziano, "Evolutionary Psychology: Old Music, But Now on CDs" *Psychological Inquiry* 6, no. 1 (1995): 41-4; and C.R. Harris and H.E. Pashler, "Evolution and Human Emotions."
- <sup>41</sup>C.R. Harris and H.E. Pashler, "Evolution and Human Emotions."
- <sup>42</sup>J.R. Zimmer, "Evolutionary Psychology."
- <sup>43</sup>D.M. Buss, *The Evolution of Desire: Strategies of Human Mating* (New York: Basic Books, 1994).
- <sup>44</sup>R. Wright, *The Moral Animal*.
- <sup>45</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture."
- <sup>46</sup>R. Wright, *The Moral Animal*, 313, 314.
- <sup>47</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture."
- <sup>48</sup>D.M. Buss, "The Future of Evolutionary Psychology."
- <sup>49</sup>H.C. Thiessen, *Lectures in Systematic Theology* (Grand Rapids, MI: Eerdmans, 1949).
- <sup>50</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture," 22.
- <sup>51</sup>D. Snoke, "The Problem of the Absolute in Evidential Epistemology," *Perspectives on Science and Christian Faith* 47, no. 1 (1995): 7.
- <sup>52</sup>Ibid.
- <sup>53</sup>J. Tooby and L. Cosmides, "The Psychological Foundations of Culture," 23.
- <sup>54</sup>D. Snoke, "The Problem of the Absolute in Evidential Epistemology."
- <sup>55</sup>B.K. Waltke, "The Literary Genre of Genesis, Chapter One," *Crux* 27, no. 4 (1991): 2-10; D.L. Migliore, *Faith Seeking Understanding: An Introduction to Christian Theology* (Grand Rapids, MI: Eerdmans, 1991); M.G. Kline, "Space and Time in Genesis Cosmogony," *Perspectives on Science and Christian Faith* 48, no. 1 (1996): 2-15.
- <sup>56</sup>B.K. Waltke, "The Literary Genre of Genesis, Chapter One."
- <sup>57</sup>M.G. Kline, "Space and Time in Genesis Cosmogony."
- <sup>58</sup>D.L. Wilcox, "Adam, Where Are You? Changing Paradigms in Paleoanthropology," *Perspectives on Science and Christian Faith* 48, no. 2 (1996): 88-96.

- <sup>59</sup>J.R. Zimmer, "The Creation of Man and the Evolutionary Record," *Perspectives on Science and Christian Faith* 43, no. 1 (1996): 16-27.
- <sup>60</sup>D.F. Fischer, "In Search of the Historical Adam: Part 1," *Perspectives on Science and Christian Faith* 45, no. 4 (1993): 241-51.
- <sup>61</sup>J.P. Clark, "Fact, Faith and Philosophy: One Step Toward Understanding the Conflict Between Science and Christianity," *Perspectives on Science and Christian Faith* 46, no. 4 (1994): 242-52.
- <sup>62</sup>G.C. Mills, "A Theory of Theistic Evolution as an Alternative to the Naturalistic Theory," *Perspectives on Science and Christian Faith* 47, no. 2 (1995): 112-22.
- <sup>63</sup>R.C. Newman, "Scientific and Religious Aspects of the Origins Debate," *Perspectives on Science and Christian Faith* 47, no. 3 (1995): 164-75.
- <sup>64</sup>P.E. Johnson, *Darwin on Trial* (Downer's Grove, IL: InterVarsity Press, 1991).
- <sup>65</sup>J.R. Zimmer, "Evolutionary Psychology," 183.
- <sup>66</sup>R. Wright, *The Moral Animal*.
- <sup>67</sup>Ibid.
- <sup>68</sup>S.J. Gould, "Exaptation: A Crucial Tool for an Evolutionary Psychology," *Journal of Social Issues* 47, no. 3 (1991): 43-65.
- <sup>69</sup>J.R. Zimmer, "Evolutionary Psychology."
- <sup>70</sup>R. Wright, *The Moral Animal*.
- <sup>71</sup>W. Bevan and F. Kessel, "Plain Truths and Home Cooking: Thoughts on the Making and Remaking of Psychology," *American Psychologist* 49 (1994): 505-9.
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