

# evolutionary psychology: new science or the same old storytelling?

*While skeptics dismiss Darwinian approaches to behavior, some social scientists hail evolutionary psychology as a "new science" that will revolutionize how we understand behavior and society. What is the promise and pretense in this new phase in the evolution of sociobiology?*



Photo by Dong Lin, courtesy of the California Academy of Sciences

Evolution exhibit describing the physical and cultural implications of the upright posture.

Since the 1975 publication of Edward O. Wilson's *Sociobiology*, scholars have offered evolutionary explanations for many social phenomena, including ethnic violence, gender differences, poverty, deviance and family dynamics. More recently, evolutionary psychology has emerged as a self-described "new science" addressing many of these same topics. Even so, evolutionary explanations still meet strong skepticism from most social scientists. Some criticize evolutionary claims for too simplistically tying behavior to genes. Others charge that evolutionary arguments legitimate invidious distinctions among social groups. More fundamentally, many believe that the arguments rest on after-the-fact conjectures about early humans—conjectures that are too often untestable and are even sometimes contradictory.

Evolutionary psychologists differ on details, but they share the starting premise that human behavior can be better understood by giving greater consideration to the selection pressures that were faced by our Pleistocene-era ancestors. They contend that our evolutionary past shaped our brains in specific ways that have important effects on how individuals behave and how societies are organized today. As one example, Martin Daly and Margo Wilson argue that natural selection favors parents with built-in restraints against harming their biological children, but that this evolutionary incentive for nurturing and restrained behavior does not extend to other children. This disposition is proposed to partially explain why stepchildren are more often victims of abuse than biological children.

Such ideas illustrate the promise many see in the new evolutionary thinking. They raise the hackles of others, who consider such arguments little more than “just-so” stories, which are much easier to devise than they are to substantiate as claims about how our evolutionary history actually happened. Evolutionary psychologists draw their theories from images of an ancestral past about which solid knowledge is extremely scarce, and they sometimes make daring predictions about present-day behavior. The empirical research has produced decidedly mixed results on many fronts. Even so, if we accept Darwinian theory as a correct account of human origins, the notion that evolutionary thinking should have something to offer is formidable: As the prominent biologist George Williams asks, “Is it not reasonable to anticipate that our understanding of the human mind would be aided greatly by knowing the purpose for which it was designed?”

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### what is evolutionary psychology?

What exactly evolutionary psychology is, and how it is distinct from what has been called sociobiology, is an issue of ongoing debate. Some apply the label to a particular theoretical position developed primarily by the husband-wife team of psychologist Leda Cosmides and anthropologist John Tooby, while others maintain that Cosmides and Tooby provide only one way of thinking about evolutionary psychology. Because sociobiology has been strongly criticized over the past 25 years, a newly minted term like evolutionary psychology provides a fresh start, regardless of any scientist’s stance on specific issues. However, the new label also reflects real developments in Darwinian approaches to behavior since *Sociobiology* was published, even if sharp distinctions between the old and new cannot always be drawn.

Evolutionary psychologists recognize more explicitly than sociobiologists that any attempt to link social patterns to genetic evolution has to include a theory of how evolution shapes human psychology. The antithesis of the Darwinian view of the

human mind is the “blank slate” commonly attributed to Locke: a mind without instincts and dispositions until it is inscribed by experience. Instead, evolutionary psychology implies an innate psychology that is rife with dispositions, biases in learning and tastes, and structures that are activated by experience rather than acquired through it. Contrary to common belief, evolutionary psychologists do not deny that culture shapes human behavior in important ways, but they do emphasize that how culture shapes behavior is mediated by our evolved psychology.

The Swiss Army knife, with its many specialized tools, is a favorite metaphor for the mind among evolutionary psychologists. They envision a psychology consisting of many highly specialized mechanisms. Each deals with a particular domain of behavior such as language, mate selection, parenting, detection of cheaters, decisions about whether to help others, and even (according to some) homicide. All of these mechanisms are asserted to have acquired their particular form primarily as a result of natural selection. Critics accuse evolutionary psychologists of being too quick to add to their ever-expanding catalogue of selected predispositions, feeding accusations that evolutionary psychology is sometimes no more than post-hoc storytelling.

Evolutionary psychology differs not only from earlier sociobiology but also from behavior genetics. Behavioral geneticists search for the genetic bases of differences among individuals or groups. In contrast, evolutionary psychologists typically focus on common traits among humans—the “psychic unity of humankind”—that developed over evolutionary time. For this reason, associating evolutionary psychology with the race-and-IQ arguments of *The Bell Curve* or J. Philippe Rushton is unfair, although it is often done. Indeed, a conservative critic has dubbed evolutionary psychology “politically correct Darwinism” because it so strongly emphasizes human similarities instead of genetic differences. (This emphasis on psychic unity does not, as I shall explain, extend to sex.)

The orienting ideas of evolutionary psychology resonate with social theories that are strongly individualistic, such as theories of rational choice. Evolutionary psychology may help explain, for example, why people have particular preferences or why they sometimes seem to act irrationally. One of the projects of a network of researchers recently assembled by anthropologist Robert Boyd and economist Herbert Gintis has taken an evolutionary approach to reciprocity and trust. They are trying to understand the apparent human inclination toward both cooperating with others in our group and punishing those who do not respond in kind, even when the punishment is irrationally costly to ourselves.



American studies scholar inspecting a human evolution display case.

### stone-agers in the fast lane

Because our mental hardware is tuned to past environments, evolutionary psychologists assert, it does not necessarily produce optimal behavior today. Modern environments have not persisted long enough to have significantly affected the mind's design. A popular slogan is that we are "stone-agers in the fast lane," whose responses to present environments are often maladaptive.

Indeed, familiar oppositions like "nature versus nurture" and "biological versus social" collapse once we think of behavior as always resulting from the combination of psychological mechanisms and the external environment. Evolutionary psychologists suggest various ways that psychological mechanisms respond to aspects of the environment, for example, to specific characteristics of other people: parents treat their biological children and stepchildren differently, and sexual arousal varies according to specific characteristics of the opposite sex.

Evolutionary psychologists also propose that evolved mental mechanisms can be sensitive to one's position in the social hierarchy. For example, Daly and Wilson suggest that low-status males may engage in riskier behavior than high-status males because in our ancestral past, low-status males had

more difficulty obtaining mates and therefore took greater risks (such as stealing or fighting) to gain status. Likewise, Jay Belsky and others propose that unstable childhood environments evoke among girls a "short-term" mating strategy characterized by earlier first intercourse, more partners and shorter pair-bonds over the life course, while stable childhood environments evoke a "long-term" strategy for other girls. These examples resonate with the familiar social science view that early childhood experience and social position affect behavior. The combination of psychological universality and environmental sensitivity may be one reason that evolutionary psychology has been more successful than sociobiology was in attracting attention from scholars.

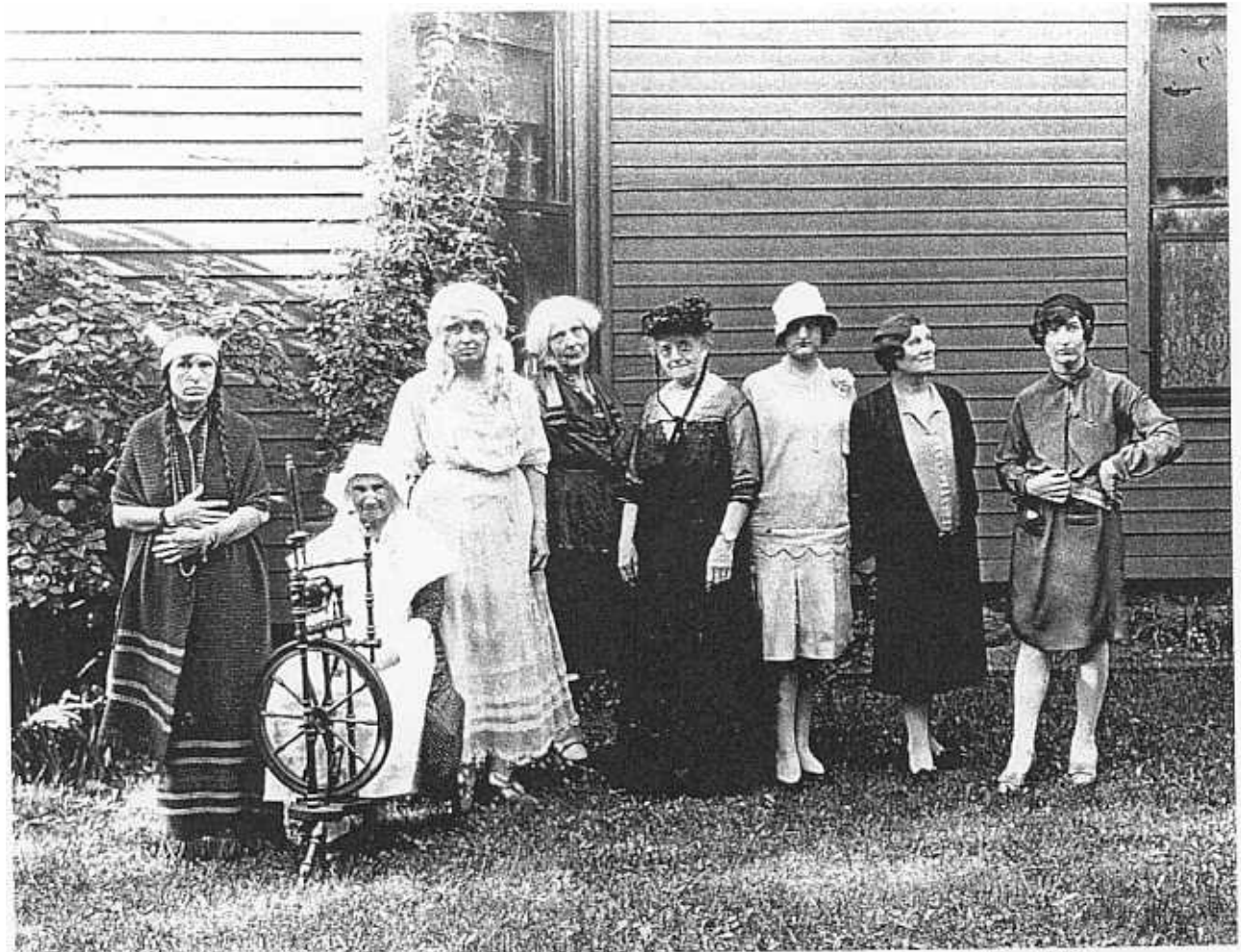
At the same time, and despite an expressed sensitivity to the importance of culture, many evolutionary psychologists have nonetheless tended to focus on phenomena that they believe are relatively constant across environments and cultures, such as women's preference for men with resources or men's preference for women with a low waist-to-hip ratio. Consequently, much of evolutionary psychology still implies a cross-cultural homogeneity that is not easily reconciled with sociology's emphasis on context.

## male and female minds

Where the most enmity remains regarding evolutionary psychology is in the study of gender. Evolutionary psychology proposes that many fundamental and innate psychological differences exist between men and women, and so it is not surprising that sociobiology-cum-evolutionary psychology has had a history of considerable mutual antipathy with some feminist scholarship. Evolutionary psychology addresses far more than just sex differences, and undoubtedly its proponents would agree that the sexes are psychologically more similar than they are different. But when one looks at the actual work done, theories and studies of sex differences predominate. In the substantive chapters of David Buss's *Evolutionary Psychology* textbook, 202 out of 297 pages contain at least some discussion of differences between men and women, differences from spatial abilities to friendship styles.

Why the overwhelming attention to sex differences? For one thing, it is relatively easy to churn out studies that statistically compare men and women. In addition, evolutionary psychology's theories of sex differences neatly fit the classic scientific model, in which a few premises generate many testable implications. Start with the premise that men and women make different investments to bring a child into the world (ejaculation vs. gestation). Females therefore have more of their reproductive potential tied up in any one child, which implies that they should invest more in the care of offspring than men. Women are also more limited in the number of children they can potentially produce, which implies that mating competition should be keener for men and that short-term mating decisions are more risky for women (each ovulation being so precious).

Countless evolutionary hypotheses begin with this logic. Consider: if mating decisions are more risky for women, then



Members of the Federation of Women's Clubs showing the evolution of women's costumes from aboriginal time (1927).

Photo by Lee Brothers, courtesy of Minnesota Historical Society

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it follows that men should be more indiscriminate than women in their choice of sexual partners. Studies show that men, on average, desire a greater variety of sexual partners, seek to have sex earlier in a relationship, and generally have lower standards for casual sex partners than do women, and that these patterns exist across cultures.

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Critics charge evolutionary psychologists with employing an outmoded view of gender relations and with advancing a male-centered view of evolutionary history. Critics also accuse evolutionary psychologists of failing to sufficiently acknowledge the massive variation in behavior that exists among men and women. Yet the way evolutionists analyze women has also changed since *Sociobiology* was published: today's Darwinian woman is a more complex and central character than 20 years ago—she is also more strongly motivated by sexual desire and less dependent on men. Even so, many still charge that evolutionary psychologists exaggerate both the breadth and magnitude of intrinsic psychological differences between the sexes. Social psychologist Alice Eagly has said, "I wouldn't argue that there are no differences between men and women, but there remains a big question whether things as specific as a preference for money are built in genetically." Such debates will not be resolved anytime soon, and it is even an open question how much common ground can be achieved by recent efforts to foster dialogue between evolutionary psychology and feminism.

An unfortunate trend in some evolutionary psychology is to interpret male-female differences in worldly success as transparent manifestations of psychological differences. One hypothesis is that, compared to women, men have a stronger drive for status because social standing has tended over evolutionary history to make a bigger difference in the number of offspring men have. In *Divided Labours*, Kingsley Browne writes, "If high-status roles are found exclusively in the extra-domestic sphere—a sphere in which men's temperament gives them an advantage—then women will be forever consigned to lower status." What he and some others fail to recognize is that even if some differences in temperament are innate, we cannot understand how they affect differences in accomplishments between the genders without considering the

wider society. Why men are more likely to be bosses and women to be secretaries is far more complicated than any gender difference in the drive to succeed. For example, we must consider such things as how boys and girls come to see different careers as "men's work" or "women's work" and how workplaces can be more or less accommodating to women's advancement. A more general point—but one that applies especially to work on gender—is that evolutionary psychologists often combine their psychological focus with a vaulting ambition to make larger claims about societies. This emphasis leads to a chronic underappreciation of how groups and institutions affect social outcomes.

of what use?

Does the increasing interest in the biology of behavior represent a temporary fad or an intellectual movement that will continue to strengthen? The collective accomplishments of neuroscience, genetics, psychopharmacology and other fields have likely (and rightly) ensured permanent support for research that pursues the biological bases of social behavior. But Darwinian approaches like evolutionary psychology are less secure. Proponents of evolutionary psychology maintain that theirs is a new science whose fruits will become increasingly apparent as it matures. Critics predict that interest will diminish when people realize that they have been, in the words of biologist Jerry Coyne, "waiting in vain for evolutionary psychology to deliver goods that it doesn't possess."

The ultimate question is how much evolutionary psychology adds to our ability to explain behavior. Does it generate new and testable predictions or mostly just post-hoc explanations? Does evolutionary psychology offer more than what could be obtained by closer attention to the research findings of psychologists, neuroscientists and behavior geneticists, without speculation about the lives of our Pleistocene ancestors? Even if evolutionary psychology helps us understand the origins of some basic features of human thinking, will such insight into origins really help us understand how humans interact today and why contemporary human societies are organized as they are? The future of evolutionary psychology depends on convincing social scientists who are not otherwise interested in our Pleistocene forebears that a Darwinian framework is essential for answering their own research questions.

Evolutionary psychology is ultimately constrained by what we can confidently know about Pleistocene life. Present-day hunter-gatherer societies are the closest analogue, but we can't know how close they are—or even which of the considerably diverse hunter-gatherer societies provides the closest match to the past. Evolutionary psychology's ability to win over its many

skeptics depends on how convincingly it can reduce the speculative character of many of its hypotheses in the face of this limitation. Success for the field also depends on what new insights it can provide into environmental influences on behavior today. The future may be brightest for those Darwinian programs that also incorporate other kinds of social scientific reasoning, rather than trying to dilute or dismiss their importance.

Sociologists are contributing empirical studies to the debate. For example, with Brian Powell and Lala Carr Steelman, I have examined some of the ideas about birth order that Frank Sulloway presented in his highly publicized book, *Born to Rebel*. Sulloway provides a Darwinian theory that birth order has important effects on personality, attitudes and behavior. In the simplest terms, he contends that firstborns occupy the alpha position among siblings and that this leads them to tend to be more conservative, ambitious and traditional than laterborns. He finds support for his theory in several studies focusing mainly on eminent scientists and historical figures, but his argument implies that birth order differences should also be observed in the population-at-large. Using a representative survey of American adults, we tested his claims that firstborns are more politically conservative, supportive of authority and tough-minded than their younger siblings. Looking at more than 200 different questionnaire items, we found no evidence that firstborns and laterborns systematically differed in any of these attitudes.

With Brian Powell, I also tested an older sociobiological theory called the Trivers-Willard hypothesis. It predicts that high-status parents will favor their sons over their daughters, and low-status parents will favor their daughters over their sons. The argument is that in humans and many other species, sons high in the pecking order tend to have more offspring (by mating with multiple partners) than do high-ranking daughters, while low-ranking daughters tend to outreproduce low-ranking sons. Using two nationally representative surveys of American adolescents, we did not find any evidence for the Trivers-Willard hypothesis. As sociological studies would lead us to expect, high-status parents invest more in their children, and parents may invest more money in their sons (although they invest more time in their daughters). But the prediction that high-status parents favor boys and low-status parents favor girls did not work out. (Another sociologist, Satoshi Kanazawa, has more recently published a study supporting the Trivers-Willard hypothesis in another survey of American children, but Powell and I have responded by re-examining these data and showing why this finding is dubious.)

Although my own research has largely challenged evolutionary psychology, the possible contributions of Darwinian thinking cannot be ignored. Instead we must distinguish what

is potentially worthwhile about evolutionary approaches from the moments of Paleolithic puffery. To me, the orienting insight that our minds were built for environments very different from today's suggests a potentially powerful route toward understanding the internal conflicts, frailties of will, susceptibilities to manipulation and other irrationalities so common in social life. We can also benefit from the continual reminder that humans are ultimately animals with an evolutionary past and a psychology that could have been otherwise. Serious evolutionary thinking requires us to reflect upon our own assumptions about human psychology and what these assumptions imply about the mind's structure, history and operation in society. Even though we may remain skeptical of how useful evolutionary psychology will ultimately be for understanding people and society today, we must acknowledge that every theory of human behavior implies some evolved psychology—one shaped by the conditions of our evolutionary past, the histories of the cultures in which we are raised and the specific course of our own lives. ■

### recommended resources

Barkow, Jerome, Leda Cosmides, and John Tooby, eds. *The Adapted Mind*. New York: Oxford University Press, 1992. Some of the foundational studies of evolutionary psychology are presented for a general audience.

Buss, David. *Evolutionary Psychology: The New Science of the Mind*. Boston: Allyn & Bacon, 1998. The most prominent textbook on evolutionary psychology.

Center for Evolutionary Psychology. Website. <http://www.psych.ucsb.edu/research/cep/>. Answers to basic questions and recommended readings from evolutionary psychologists.

Hardcastle, Valerie Gray, ed. *Where Biology Meets Psychology: Philosophical Essays*. Boston: MIT Press, 1999. Includes several critiques of evolutionary psychology by philosophers.

The Preferences Network. Website. <http://www.umass.edu/preferen/>. Information on the MacArthur research network led by Robert Boyd and Herbert Gintis that is studying reciprocity and other topics.

Rose, Hilary, and Steven Rose, eds. *Alas, Poor Darwin*. New York: Harmony Books, 2000. Criticisms of evolutionary psychology from scholars in various disciplines.