

Comment

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Beyond "Competing," Beyond "Compatible"

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A form of partisan politics often characterizes discussions on the origins of sex differences in human social behavior. In one conceptual camp, researchers vigorously claim that sex differences have their origins in evolutionary selection pressures that operated on our human and prehuman ancestors. An opposing camp offers the spirited retort that these differences are easily explained by the forces of culture—that there exist different cultural norms and expectations for men and women, who are then socialized to behave differently.

It is within this context that one must consider the impact of Archer's (September 1996) recent article. Archer considered whether observed patterns of sex differences in human social behavior are best explained by social role theory (Eagly, 1987) or by the evolutionary principles of Darwinian theory. He showed that the evolutionary perspective accounts for a wider range of findings, and therefore he concluded that Darwinian theory offers a more successful account of the origins of sex differences. Finally, in the last substantive section of the article, he concluded further that the two ostensibly "competing" explanations are actually compatible.

This final point is important, and it offers a signal of integrative thought amid

the partisan noise. But I worry that this valuable conclusion is likely to be drowned out by the sheer volume of his preceding discussion concerning which theory is better. Moreover, I worry that the appeal of the evolutionary perspective and the compatibility conclusion will be undermined by the epistemologically unsound nature of those preceding arguments.

If the objective is to convince the skeptical reader of the necessity of an evolutionary explanation, then Archer (1996) erred by choosing the range of results as his focal criterion and by focusing exclusively on social role theory as the putative alternative explanation to Darwinian theory. The two theories differ fundamentally in scope. Darwinian theory is not merely a theory about the origins of sex differences nor a theory about the origins of human nature but a theory about the origins of organic nature of all sorts. Social role theory is a theory that is specific to the origins of human sex differences—a theory that focuses exclusively on one subset of cultural norms (sex-related labor roles) that can explain a subset of sex differences (differences in agentic and communal behaviors). It cannot be understood to predict an exhaustive catalog of all forms of sex-based socialization nor as a logically sufficient proxy for the broader cultural norm perspective that is typically offered as the alternative explanation to evolutionary psychology. Readers who are hostile to an evolutionary perspective (and there are still plenty of them) will be quick to claim the objections noted above and to note that Archer's (1996) review is not a fair fight. They will point out that the ability of cultural norm theory to predict human sex differences is not at all undermined by the failure of social role theory to account for age-related differences in aggression or sex differences found in nonhuman species (Archer, 1996, p. 914). They will note that although social role theory may not predict all observed sex differences in human behavior, a broader cultural norm perspective can.

Would a "which theory is better?" approach be appropriate if one did focus on a broader cultural norm theory. No. And Archer (1996) erred in implying that it is even

logically sensible to weigh Darwinian and cultural theories of human sex differences against each other. The two theoretical approaches specify causal mechanisms that occupy very different locations on the implicit timeline of causal influence. Cultural norm theory focuses on causal agents (i.e., roles, ideologies, expectations, and other cultural norms) that are temporally proximate to individual behavior. Darwinian theory focuses on a causal agent (differential selection pressure) that operated on our prehuman ancestors well before the existence of even rudimentary ideologies and cultural structures. When Archer concluded that "What we observe at the present time is more likely to have originated from selection pressures during human and prehuman evolution than as a consequence of the human division of labor" (p. 915), the conclusion makes no more sense than the conclusion that these words I am typing are more likely to be caused by my desire to type them than by the actions of my fingers on the keyboard.

Nor would the opposite conclusion be any more meaningful. Suppose that one judged the two theoretical approaches against a different standard of explanatory merit—variance accounted for. Imagine a study that somehow allowed separate estimates of the variance accounted for by selection pressures and by cultural norms. If such a study were possible, it is likely that cultural norms would account for a higher proportion of variance on most human behaviors. Would this result logically require us to abandon the evolutionary explanation for sex differences? Of course not. This comparison, like Archer's (1996), implies a false dichotomy between the causal mechanisms specified by each theoretical approach. Rather than comparing these approaches against each other, a comprehensive understanding of human sex differences requires us to think more integratively about the multiple causal influences on our contemporary behavior.

At the very end of his article, Archer (1996) briefly did exactly that. It is this concise yet elegant discussion of coevolutionary processes that might easily be missed or dismissed by readers who are legitimately

critical of Archer's preceding rhetorical logic. This would be unfortunate. Despite the epistemological shakiness of much of his article, Archer's final conclusion is accurate and important. Evolutionary and cultural explanations (including social role theory) of human sex differences are compatible. I would make an even stronger point: The two approaches are not merely compatible but are necessarily interdependent. Any theory that explains human behavior as having its origins in roles, norms, or other cultural structures begs the question as to the origins of those roles, norms, and other structures. Archer and others (e.g., Smuts, 1995) are surely correct in suggesting that evolutionary selection pressures must have played an important role in the origins of culture—that many cultural norms arose as a means of "giving voice" to poorly understood but powerfully felt biological perspectives. Just as theories of culture require input from Darwinian theory, an evolutionary perspective on human behavior cannot ignore the mediating role of culture. For Darwinian theory to offer a compelling explanation of human social behavior, we must be able to articulate variables that link the selection pressures that operated in our prehuman ancestors to the behaviors we observe around us right now (Cosmides & Tooby, 1987; Kenrick, 1994). Social roles, emergent ideologies, and other cultural structures that translate unspoken selection pressures into mandates for specific action are necessary parts of the evolutionary explanation.

The conclusion needs to ring loud and clear: Darwinian and cultural perspectives on human sex differences are not opposing theories, nor are they merely compatible. They are necessarily interdependent. They need each other.

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Post Hoc Explanation Is Not Prediction

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Evolutionary psychologists such as Archer (September 1996) frequently claim to predict gender differences in social behavior when such claims are more properly regarded as post hoc explanations for long-recognized observations. Archer (1996) framed many of his evolutionary claims as explanations, but he repeatedly shifted into predictive language without acknowledging the distinction between explanation and prediction. A critical weakness of post hoc explanation is that various aspects of a theory may be used selectively to maximize the appearance of predictive validity. A sufficiently abstract and ambiguous theory might be molded to explain a wide range of phenomena, including gender differences that are antithetical to the ones observed.

To illustrate, consider a hypothetical society of humanoid creatures in which men are more timid than women, women are physically stronger than men, and women engage in more promiscuous sexual behavior than men. These hypothetical gender differences can be readily "predicted" by Darwinian principles—reproductive advantage through individual survival and preservation of offspring—often used to explain the opposite characteristics.

These hypothetical men evolved to be more timid than women because they lacked child-care responsibilities that required defense of their offspring in time of danger. Freed of the need to protect children, men are more likely to survive and reproduce if they flee from danger rather than stand and fight. These hypothetical women evolved to be stronger than men because their child-care responsibilities required them to carry children and, in times of danger, to lift them into trees. They also had to be physically strong to defend their children from predators.

Finally, these hypothetical women were more promiscuous than men because frequent sexual encounters permitted them to have intimate, evaluative contact with a

variety of men and therefore to make better informed choices of a suitable mate. If the probability of pregnancy from a single encounter is low, a woman can entertain multiple partners with relative safety from pregnancy. Moreover, when the woman eventually becomes pregnant, it is to her advantage to have had multiple partners, because any one of them might be convinced that he is the father and therefore induced to provide paternal support.

Archer (1996) claimed that "evolutionary theory best accounts for both the origins of most sex differences in social behavior and their observed pattern at the present time" (p. 916). However, theories cannot be tested or validated on the basis of their plausibility alone. Many plausible arguments are spurious, and the truth of a theory cannot be determined by the elegance of its formulation or the parsimony of its assumptions, however desirable such qualities may be. Disputes between rival theories must be resolved by (a) specifying circumstances or formulating tests under which the theories generate competing predictions and then (b) evaluating evidence from observation that supports one or the other prediction. Evolutionary psychology is a promising and intriguing area of inquiry and may yet prove to have great value in understanding gender-differentiated behavior, but its theories are not adequately tested by post hoc explanations couched in predictive language.

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Sex Differences in Social Behavior: Comparing Social Role Theory and Evolutionary Psychology

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John Archer (September 1996) compared two explanations of sex differences in hu-