

# Sex, Sex Differences, and Social Behavior

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**ABSTRACT:** Sex differences in social behavior are center stage in recent formulations of evolutionary psychology. Evolutionary psychology, with its emphasis on the long-term consequences of early adaptations, offers itself as an alternative meta-theory to mainstream social psychology, which emphasizes the importance of social structures in determining the existence and extent of social and cognitive sex differences. Using a range of examples, we argue that evolutionary psychology is open to criticism on several fronts: It does not (a) include a role for mediating and moderating variables or test predictions rigorously; (b) appreciate the importance of the difference between first- and second-order effects; (c) offer a truly interactionist theory; or (d) seriously consider the social implications of sex-based inequities. We also argue that social psychology has, in its turn, failed to appreciate the nonintuitive richness of some evolutionary hypotheses or that there is a role for evolutionary psychology in a genuinely interactionist theory. This paper restates the need for that perspective, and suggests how it may be achieved.

Evolutionary psychology has set its sights on the mind, challenging classical psychological explanations of everything from mate selection to cognition. The "new" theoretical perspective offers evolutionarily sophisticated adaptationist alternatives to current situational, sociocultural, and developmental explanations. Some of the affected subfields seem not to know what has hit them, while other subfields have easily absorbed and reconstructed models of evolution that best suit their subject matter, and still others have warily resisted the most seemingly relevant aspects of evolutionary psychology.

Perhaps nowhere is the resistance more evident than in social psychology, the broad subfield of psychology most explicitly dedicated to understanding social behavior and social differences. The stakes are high in this clash of perspectives, because what hangs in the balance are prospects for reinventing phenomena as diverse as developmental trajectories, personalities, interpersonal relationships, and social policies and institutions. If ancient adaptations are the foundations of contemporary personal dispositions and societal structures, then the likelihood of significantly changing the fortunes of social groups appears diminished. If, on the other hand, contextual and cultural conditions are the crucial causal forces, then efforts at reform seem more likely to succeed.

Our own position, as sketched in this commentary, is that evolutionary psychology and social psychology make separate and distinct contributions to the understanding of the complexities of social interaction. Each has something to offer and each leaves some ground uncovered. Evolutionary explanations of behavior are not inherently incompatible with sociocultural ones even though they have often been cast

and read that way. Social and evolutionary approaches would profit from engaging some of the other's theoretical, empirical, and societal concerns.

An important recent (1999) paper by Eagly and Wood<sup>1</sup> exemplifies some of the issues in the current debate. These authors reanalyzed the data of David Buss's 1989 study<sup>2</sup> in 37 cultures of the characteristics people desire in mates. Buss had found strong support for near-universal sex differences in the desire for physically attractive mates, for mates with high earning potential, and for age preferences. The major differences were in the direction predicted by the evolutionary theory of sexual selection, and were used to support the notion of sex-specific evolved psychological mechanisms (see Buss, this volume, p. 39).

Eagly and Wood confirmed Buss's basic findings, but also analyzed previously unreported data on the value placed on domestic work and correlated them with measures of gender equality in order to demonstrate the importance of social roles. They found that women's desire for older mates with high earning capacity and men's desire for younger mates (with good domestic skills) are moderately to strongly correlated with indices of gender equality in a society. Males' preference for physical attractiveness in mates, however, was unrelated to gender equality. While granting that their findings are not inconsistent with evolutionary psychology's program, Eagly and Wood argue that they are best explained by social-role theory, which states that the division of labor by sex within a society drives mate preferences. For example, in more equal societies, women don't need rich, older men to take care of them. Thus, some aspects of mate preference seem best explained by reference to social factors.

Via a comparative or between-groups approach, collapsing *across* cultures, Buss's 1989 data provided strong support for the evolutionary perspective; via a correlational approach that looked at relationships among variables *within* cultures, the same data set yielded strong support for a social-role perspective. There is indeed something here for everyone, which allows for endless debate. Only by examining a wide range of variables and measures will we be able to understand exactly *what* there is for everyone.

We opened with this example in part because it is the latest salvo in the gender difference wars, and in part because it reveals the general shape of debates about how to explain social behavior. Evolutionary theories look to the causal role of biological sex, whereas social theories look either to variables such as learning and cognitive processes that intervene between sex and behavior, or to the effects of other variables—new independent variables that may interact with sex. In doing so, the theories highlight different parts of a larger explanatory model and explain somewhat different phenomena.

Consider, for example, research on sex differences in jealousy. There are replicable sex differences in the triggers of sexual jealousy: women are more likely than men to report distress at emotional infidelity; men are more likely than women to be upset about sexual infidelity.<sup>3</sup> That difference follows from certain assumptions in evolutionary psychology. Finer-grained analyses, however, have measured the influence of other variables, especially the perception that one kind of infidelity implies the existence of the other (the "double shot" hypothesis of DeSteno and Salovey<sup>4</sup>). Sex covaries with the extent to which one kind of infidelity implies the other: for men more than women, a partner's sexual infidelity implies emotional commitment, whereas for women more than men, a partner's emotional infidelity means that sex

is in the air. Most people choose as most distressing the type of infidelity that more implies the existence of the other. Thus, inference patterns that vary with sex appear to influence infidelity choice.<sup>4,5</sup> And, counter to what we might expect from the theory of parental investment and sexual selection, men are no more likely to be upset by sexual than emotional infidelity; instead, both are highly distressing to men.

The two types of explanations highlight different causal paths, and in so doing, illuminate different phenomena. One theory predicts sex differences in attitudes toward infidelity as a result of sexual selection pressures. Another theory predicts sex differences in the meaning attached to infidelity as a result of current sociocultural mores. What the two perspectives on sex differences in jealousy show us is just how much more there is to learn about it than either perspective alone would suggest.

In this paper, we offer an integrative explanatory model of sex differences that takes evolutionary and social factors into account and suggests how to conceptualize and study the many confounding variables that have plagued research in these programs. For illustrative purposes, we focus on the site regarded as evolutionary psychology's greatest success story,<sup>6</sup> and the one in which evolutionary theory has hit social perspectives with most force: the theory of parental investment and sexual selection as an explanation of sex differences in social behavior.<sup>7,a</sup> We first discuss the theoretical and methodological problems to be addressed by this model, arguing that lack of clarity on these issues has needlessly divided social and evolutionary perspectives, and frustrated evolutionary psychology's attempts to broaden and deepen its impact on the field. We then note the implications of the model for the distinction between historical and current causes, and for a truly interactionist perspective. Finally, we discuss the social policy implications of evolutionary and social explanations.

## TOWARD AN EXPLANATORY MODEL OF SEX DIFFERENCES

The presence of myriad uncontrolled variables in the programs of evolutionary and social psychology has deeply compromised causal inference. A time-honored way of probing more deeply into the nature of biological and social processes and integrating seemingly irreconcilable theoretical positions is to classify those variables as *mediators* or *moderators*.<sup>8</sup> A mediator variable is an intervening process that accounts for or explains a relationship between an independent variable like sex and a dependent variable like jealousy. The path diagram in FIGURE 1 illustrates a three-variable system with three causal paths, *a*, *b*, and *c*, in which the independent variable operates directly (path *c*) and indirectly (paths *b* and *c*). Mediators explain how or why events occur, for example, how or why biological sex predicts reactions to infidelity (through different inferences men and women make about infidelity types).

<sup>a</sup>It is important to note, however, that evolutionary psychologists in this area as in many others are hardly monolithic in their views. Whereas most researchers probing the theory of sexual selection focus on sexual dimorphisms—sex differences in courtship—some, like Miller,<sup>6</sup> point out that sexual dimorphism is a common but not necessary outcome of sexual selection, and that important factors like the mutuality of mate choice and genetic linkage between the sexes constrain the nature and extent of sexual dimorphism. Thus, we are not discussing all evolutionary theories, but characterizing some representative views.

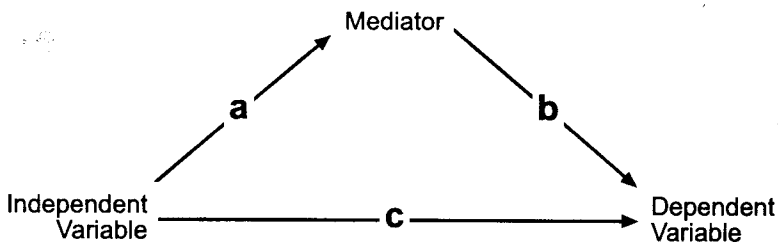


FIGURE 1. Mediator model. (Adapted from Baron and Kenney.<sup>8</sup>)

In some cases, the only effect of an independent variable is through the mediator variable. Many cognitive, learned, or biological processes can mediate a given effect.

A moderator variable is an independent variable that affects the direction and/or strength of the relationship between a focal independent variable and a dependent variable.<sup>8</sup> The path diagram in FIGURE 2 has three causal paths, *a*, *b*, and *c*. In analysis of variance terms, a moderator interacts with the focal independent variable to specify the appropriate conditions for its operation and the generality of its effects. In the Eagly and Wood study, gender equality suggested limits to the relationship between biological sex and mate preferences: At high levels of gender equality, preferences for age differences in partners diminished.

One key difference we see between social and evolutionary psychology is in the treatment of mediators and moderators. Social psychology focuses almost completely on such variables, but often without recognizing the important differences between the two types. For its part, evolutionary psychology leapfrogs from sex to social behavior, paying lip service to the role of situational and cultural moderators, and expressing interest in only one mediator—the underspecified hypothetical “evolved dispositions.” Only by explicitly attending to the models illustrated in FIGURES 1 and 2 will we have a genuinely explanatory theory of social behavior.

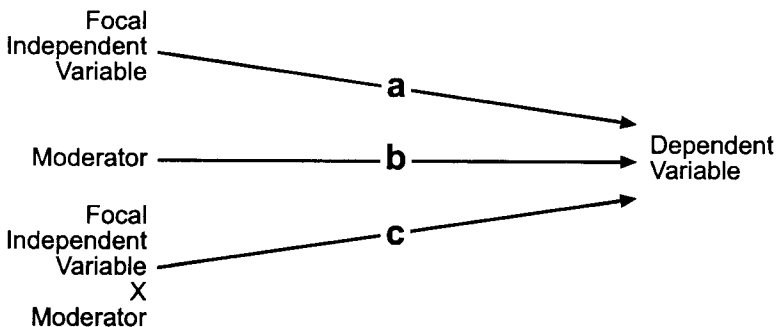


FIGURE 2. Moderator model. (Adapted from Baron and Kenney.<sup>8</sup>)

Despite its narrow focus, evolutionary psychology has launched or invigorated many research programs in social psychology. The theory of parental investment and sexual selection alone has spawned numerous testable, nonobvious, original hypotheses about the qualities that males and females find appealing in both short- and long-term relationships, and about the ways that people try to attract and retain mates, among other phenomena. In many cases, social-role, schema, and learning theories cannot make these predictions in advance, and, as in lines of research that suggest that women's preferences for men's smells or facial features change across the menstrual cycle,<sup>9</sup> can barely explain the findings after the fact.

Evolutionary psychology has been multi-method in its research program, using experimental or quasi-experimental survey methods along with naturalistic observation and content analysis of archival data. But we question (a) the extent to which experimental laboratory and survey data collected on humans in the present can shed light on adaptations that developed in the past,<sup>10</sup> (b) the validity of programs in which the data collectors are not blind to the hypotheses,<sup>11</sup> (c) the sheer number of assumptions and inferential leaps that characterize certain aspects of the program, and (d) the practices of comparing nonequivalent groups and making causal inferences from correlational and quasi-experimental studies.

We focus here only on the last point. Even in the most experimental parts of the program, where investigators manipulate variables under controlled laboratory conditions, there is a crucial variable that cannot be manipulated: the sex of research participants. Since men and women are never equivalent, group differences between men and women in key areas cannot be attributed to evolutionary factors without evidence about the causal agent or strict control of the myriad factors that are known to vary with biological sex. If, for example, women on average are poorer than men, that difference in economic status might be the causal factor in an experiment. Were economic status controlled or built into mediator and moderator models, sex differences might disappear.

Evolutionary theorists have argued that the cognitive and social variables that correlate with biological sex—which may also explain some of the variance in a given response—are just further evidence for the power of biological sex rather than causal variables in and of themselves. Perhaps, but no evidence backs up the claim. Because of the power and prestige of evolutionary theory in biology and biopsychology, evolved dispositions are given an unearned priority in explaining human behavior. In the evolutionary psychology project, “the tie goes to biology.” But as we have noted, the notion of evolved dispositions, variously called mechanisms and adaptations, is a mysterious and vague construct that straddles psychology and biology with no clear definition in either field.

Evolutionary psychology will remain less persuasive than it might be as long as simple group comparisons are made with potentially important covariates unmeasured and uncontrolled. In the case of jealousy research, for example, biological sex did not predict which kind of jealousy is more distressing as well as did individuals' beliefs concerning the covariation between sexual and emotional infidelity. At the same time, biological sex is correlated with type of belief and, evolutionary psychologists might add, it is important to understand why that is so. We agree. But, as the mediational model suggests, there is a difference between claiming that sex differences in jealousy are a first-order consequence of our evolutionary heritage and claiming they are a second-order consequence, derived from cognitive sex differences.

Another innovative and promising line of research in the evolutionary psychology program, fluctuating asymmetry, is similarly plagued by multicollinearity problems. Gangestad, Thornhill, and their colleagues have studied how fluctuating asymmetry—*asymmetry in bilateral traits due to random errors in the development of the two sides*—indicates underlying genetic fitness and may affect male success in having sex (at least in casual relationships). According to Gangestad,<sup>12</sup> symmetrical men—those with same size ears, elbows, wrists, ankles, feet, and fingers—are far more likely to have had sex at an early age, to have more sex partners, and to engage in more extra-pair copulations than males who are asymmetrical, even though asymmetry is presumed to be undetectable in normal social interaction. There is the suggestion, along with some evidence, that women can “smell” it.<sup>9</sup> Some research even suggests that symmetrical men are more attractive to women when women are particularly fertile, and are more likely to bring women to orgasm. Fascinating if true.

But at least to this date, the program has left unanswered the question of whether it is asymmetry (and the underlying developmental imprecision representing the “bad genes”) or the host of other unmeasured variables correlated with symmetry—like masculinity, overall handsomeness, social competence, self-confidence, intelligence, and warmth, to name a few—that drives the effect. Some of these variables are measured (and statistically controlled for) and some are not. Sometimes some of them correlate at least moderately with fluctuating asymmetry and sometimes they do not. There are many issues raised by this intriguing program, not the least of which has to do with the meaning of asymmetry and its relationship to developmental imprecision and “good genes,” and the utilitarian role of male physical attractiveness. But the problem of multicollinearity—the intercorrelation of variables—must be addressed if the preference for symmetry is to retain any real meaning beyond the observation that good looking guys get around more.

Given the problems involved in comparing nonequivalent groups, we question whether univariate analyses and null hypothesis testing can continue to serve as a major analytic tool for evolutionary psychology. For one thing, some sex differences are so small as to be of little theoretical and practical significance; many fluctuate in size across cultures. Throughout the past decade, mainstream social psychology has increasingly moved in the direction of measuring the size as well as the existence of effects, and of summarizing areas of research quantitatively via meta-analysis. Using effect sizes in sex-difference research, several investigators have found that, where they exist, most sex differences are small to moderate by social science standards, though a few are quite large, notably permissive attitudes toward casual sex and incidence of masturbation.<sup>13</sup> Sex differences are not static, with some sex differences, like those in verbal and mathematical ability, for example, changing—and diminishing—over time, and others not.<sup>14, 15</sup>

In any case, evolutionary psychology has clearly provided a coherent theoretical statement with which to guide empirical work on sex differences, and sex will obviously remain a key variable in this project. But a variable that bears this burden demands more thoughtful study. Men and women differ on numerous biological, psychological, and social variables, any and all of which may be operating in a given study. If sex differences are to be at the heart of any theory-building, they must be more carefully examined using effect sizes, meta-analyses, and more sophisticated multivariate analysis strategies guided by explanatory models that build in mediational and moderational processes.<sup>b</sup>

## RETHINKING "HISTORICAL" VS. "CURRENT" CAUSES

Evolutionary psychology has opened up new areas of discourse concerning the relationship of social psychology to other branches of knowledge, particularly the natural sciences. It achieves this with its focus on the origins and adaptive significance of social behaviors, including those that differ in males and females. Traditionally, social psychology has focused on more proximate (situational) causes of behavior, including gendered behavior. Social psychology has also looked to more distal causes, but these have been located more often in structural (e.g., division of labor based on sex) and cultural (e.g., patriarchy) than biological domains, and non-specialized cognitive and learning mechanisms are seen as the means by which roles and hierarchy had their effects. Social psychology has been successful in identifying such factors, and using them to explain important sex differences.

As Eagly and Wood note, the distinction between the search for historic and current causes is not really what separates evolutionary and social perspectives. Evolutionary causes are not necessarily historic; indeed, evolved mechanisms are presumed to operate in the present, and social causes are not necessarily current, with many deeply embedded in culture and institutions. Neither theory has a hold on historic or current causes, and neither type of cause is inherently more important.

The importance of current causes can be seen in a clever set of experiments by Hoffman and Hurst.<sup>16</sup> They showed how stereotypes can arise in direct response to the way that categories of individuals are distributed into social roles. They argue that common gender stereotypes or schemas are an attempt to justify a pre-existing sexual division of labor, and propose that even if sex segregation into social roles were completely fortuitous, it requires rationalization once it exists. Specifically, we attribute to each sex those qualities deemed necessary for the performance of a particular function, for instance, bearing and feeding infants, a role so distinctive, salient, and critical that it swamps the field.<sup>17</sup>

Interestingly, Hoffman and Hurst also found that stronger stereotypes were formed when groups were presented as differing biologically. If people differ biologically, we expect those differences to be revealed in traits and behaviors. Conversely, external differences lead us to postulate internal, biological differences. We call this the biologization of difference. Evolutionary psychology has taken this route by querying the nature of the fit between the organism and the environment, including why the division of labor by sex so often takes the form that it does, and why some learning histories and perspectives are more characteristic of one sex than the other. But, as work like Hoffman and Hurst's shows, social psychology is finding answers to similar questions.

<sup>b</sup>At a more conceptual level, recent formulations of sex and gender in psychology describe these constructs as dynamic ones that draw and impinge upon processes at the individual, interactional, group, institutional, and cultural levels. Deaux and LaFrance,<sup>29</sup> for example, argue for enlarging rather than shrinking the frame of analysis to take into account political systems and cultural traditions as well as smaller contextual factors. They note that ignoring context and focusing on group differences is bound to produce opposites rather than overlap, to emphasize the person rather than the setting, to identify stable dispositions rather than fluctuating patterns, and to highlight biology or socialization rather than assignment of people into different and unequal social positions. Such biases need to be addressed theoretically and methodologically.

## IN SEARCH OF INTERACTIONISM

In psychology generally, the *Zeitgeist* is to speak of interactions among nature and nurture and the need for multiple levels of analysis of all complex behaviors—not just human social behavior but the behavior of lower organisms as well. For instance, chimps appear to transmit culture,<sup>18,19</sup> and even male rats need certain kinds of stimulation to develop normal sexuality.<sup>20</sup>

Both evolutionary and social psychological approaches to sex differences claim to avoid the simplistic old nature/nurture impasse that have dogged the discipline in the past. Instead, each at least nominally considers a range of variables from the biological to the sociocultural.<sup>1,21</sup> But it is also clear from even the most recent and reasoned statements of their theories that each camp pushes hard for one type of causal explanation in a way that recreates the dichotomy all claim to disavow.

On the social side, consideration of biological variables often begins and ends with a mention of a few gross physical differences between men and women—almost always men's greater physical size and upper body strength and women's capacity to bear and nurse children. This moves quickly to speculation about how such characteristics shunt men and women into different social roles, and arrives at the conclusion that observed psychological differences between men and women are the results of social roles and structures. Theorists do not linger long on how we move from physical attributes to social roles, or on how reasonable it is to assume that major physical differences are irrelevant to psychological ones.

Indeed, there is clear reluctance to grant a major role to complex biological and developmental factors—brain structure and function or hormones, for example. Findings that are inconvenient for a social role analysis, such as the fact that desire for physical attractiveness in a mate is unrelated to gender equality, are somewhat weakly explained by an appeal to the notion that men value physical attractiveness because it is a marker for social competence or sexual warmth, attributes with which physical attractiveness may be correlated.

On their side, evolutionary psychologists rail against reductionism, claim to consider a broader range of variables in their analyses, and strive to be inclusive. But their embrace of interactionism is undermined by the research questions, variables, and designs that characterize many of their research programs. The place of environmental and contextual factors is regularly acknowledged in a general way, but, as Eagly and Wood note,<sup>1</sup> the few that are actually studied in the evolutionary psychology program are cues believed to trigger the hypothetical evolved mechanisms. As such, they are closely tied to the narrow and specific conditions of interest to middle-range evolutionary theories, for example, whether mating is long- or short-term, and are rarely the broader social and contextual factors that have long occupied psychologists who study complex processes like stereotyping.

Cultural variations in sex-linked behaviors and traits are recognized, though minimized, because the goal of much of the program on the theory of sexual selection is to find universal sex differences on behaviors relating to mate selection. Culture is a "nuisance variable" to be generalized across rather than a rich set of moderator and mediator variables in a broader explanatory model. Individual differences within gender are similarly ignored, even when there is great within-group variability, as in the case of the triggers of jealousy in men.

At least until now, what is social in the evolutionary psychology project is mostly on the dependent variable side, and the major causal factors are dispositional. In contrast, social psychologists are interested in using social factors to explain social effects, and know well that complex behavior is multiply determined, with no single set of factors accounting for the lion's share of variability in social responses. In that light, calls for evolutionary psychology as "the new paradigm for psychological science"<sup>22</sup> (p. 1), the grand metatheory that will integrate and unify a fractured discipline, are premature. There is widespread skepticism about a project that siphons the social out of social psychology. The nuanced interactionist perspective that is needed and promised on both sides has not, in our view, been realized in the research programs or discourse of either framework, and adherents continue to talk past each other.

Interestingly, it is in the study of primates that a truly interactionist model is more common.<sup>19,23</sup> De Waal has shown, for example, that young rhesus monkeys reared together with a group of stump-tailed macaques learned to behave more like macaques: They became more cooperative, social, and egalitarian. The rhesus monkeys became so adept at reconciliation that when they were returned to their own kind, they continued to use their new skills to make peace among their despotic peers. Such flexibility among our primate cousins is good evidence that, even among animals that have clear "hard-wired" behavioral predispositions, current cultural conditions influence behavior. Indeed, in their comprehensive synthesis of sixty-five chimpanzee behaviors, Whiten *et al.*<sup>18</sup> found thirty-nine that fit their definition of cultural variation. If chimpanzees are so susceptible to culture, then surely humans cannot be far behind.

## PSYCHOLOGY AND SOCIAL PROGRESS

It is hard to write about the place of evolutionary psychology in social psychology and related subfields without noting its "extra-science" or sociopolitical aspects. Mainstream social psychology seems to have tried to ignore or dismiss evolutionary psychology for as long as possible and contain it when it could no longer dismiss it. Today, major chapters on evolutionary psychology appear in the most influential handbooks, but its principles and heuristics have not permeated the field. Frustrated to see its inevitability denied, evolutionary psychology has kicked back hard, with some of its proponents clearly exasperated by what they see as ignorance about biology and evolution, and prejudice against their program, a prejudice rooted in insecurity about the value of social explanation and political correctness.<sup>24,25</sup>

Evolutionary psychologists resist characterizations of evolved psychological mechanisms as built-in, hard-wired, and unchangeable, of the theory of evolution as easily falsifiable, and of their politics as reactionary. They are impatient with social psychology's reluctance to appreciate the nature and scope of evolutionary theory and resistance to considering evolved dispositions in any serious way. But at the same time, evolutionary psychology has attempted to integrate the field around a set of highly specific concerns and evolved psychological mechanisms, some of which may differ by sex, whose "engineering characteristics"<sup>26</sup> (p. 435) are completely unknown. In effect, social psychology is being asked to buy a theory that has yet to demonstrate why what "must" be the case must be the case. The biological argu-

ments and evolutionary theories that have widest acceptance and greatest respect, like the overarching theory of natural selection, illuminate what it is to be human. But historically, such arguments and theories, no matter how nuanced or "interactionist," have run into trouble when they are used to explain group differences, especially differences among people who differ in power, goods, and other resources that we value. Differences between more and less powerful groups—whether the marker of power is race, ethnicity, or sex—are, as we have seen countless times in the past, interpreted as deficiencies in the disadvantaged groups.

Evolutionary psychology is replete with references to the advantages males have over females and the instability of modern movements to secure equal rights for women. Evolutionary psychologists often note that they do not view sex differences in selected social behaviors as good, morally correct, or the way things ought to be. Indeed, they frequently caution feminist social psychologists, among others, not to see a determinism that is not intended. And it is true that evolutionary explanations of inequality need not justify or reproduce the status quo. For example, strong evidence of evolved mechanisms that put one group at a social disadvantage could presumably lead to calls for the most stable and resolute policies to reduce inequities.

But there is a worrying inconsistency in evolutionary psychology. Determinism may not be intended, but the program's goals are to explain key elements of social inequalities as due to evolved mechanisms and essential sex differences. That looks a lot like determinism, especially since evolutionary pressures and essences cannot be changed. The resolution of the inconsistency would be an acknowledgment that sex-specific evolved mechanisms can be preempted by developmental and ecological conditions and, in consequence, vary greatly within and among individuals and cultures. Indeed, with the current rapid rate of cultural evolution, evolved dispositions may be expected to explain less and less of the variance in human behavior. But even when evolutionary psychologists have noted cultural effects, it is with reservations. Buss,<sup>27</sup> for example, has noted that different cultures invoke different mating strategies. Yet, he has also rejected the idea that cultural explanations of behaviors are alternatives to evolutionary explanations.

As recent research by Regan<sup>28</sup> suggests, in modern industrialized societies, where men and women have considerable—and considerably more equal—powers of selection in the form of increased access to potential mates, better economic opportunities, and decreased sanctions against divorce and premarital sex, they are becoming more similar in what they look for in prospective mates (and, for short-term mates, that may well be physical attractiveness). There is evidence that social psychological models that stress the proximal (i.e., situational, contextual) determinants of gender differences in behavior over distal (i.e., early experiences, social roles, evolved dispositions) ones may be more predictive of behavior.<sup>13,29</sup> Our point is that first causes and present causes are neither redundant nor mutually exclusive.

Obviously, social policies are best based on the richest understanding of the processes underlying them, including evolved mechanisms. Just as clearly, the social implications of a program designed to study social behavior cannot be ignored, no matter how "basic" the research. The place of biological and evolutionary arguments in discourse about group differences in social behavior and outcomes may always be contested, and should be approached with an immense sense of responsibility. A challenge we offer to evolutionary psychologists is to propose an outline of an evo-

lutionarily informed remedy for sex-based inequities. Such an outline would have the theoretical value of placing evolved mechanisms in a context of other influences and would have the social value of demonstrating that evolutionary psychology is compatible with social progress. To date, no such outline exists. A recent evolutionary theory of rape,<sup>30</sup> for example, offers an educational program that owes no insights to evolutionary psychology (and spends three paragraphs on "educating" men and ten on "educating" women).

Social explanations have not been in any sense outflanked. Instead, both social and biological levels of explanation need to be enriched, with more attention paid to how they co-develop and interact. No one theoretical perspective captures the dynamics of complex social, sexual, and cultural phenomena, and evolutionary psychology will flourish as a key level of analysis in social psychology, informing but not transforming the field.

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