



Women, Behavior, and Evolution: Understanding the Debate between Feminist Evolutionists and Evolutionary Psychologists

Author(s): Laurette T. Liesen

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Women, behavior, and evolution

Understanding the debate between feminist evolutionists and evolutionary psychologists

Laurette T. Liesen, Ph.D.
Department of Political Science
Lewis University
One University Parkway
Romeoville, IL 60446
USA
LiesenLa@lewisu.edu

ABSTRACT. Often since the early 1990s, feminist evolutionists have criticized evolutionary psychologists, finding fault in their analyses of human male and female reproductive behavior. Feminist evolutionists have criticized various evolutionary psychologists for perpetuating gender stereotypes, using questionable methodology, and exhibiting a chill toward feminism. Though these criticisms have been raised many times, the conflict itself has not been fully analyzed. Therefore, I reconsider this conflict, both in its origins and its implications. I find that the approaches and perspectives of feminist evolutionists and evolutionary psychologists are distinctly different, leading many of the former to work in behavioral ecology, primatology, and evolutionary biology. Invitingly to feminist evolutionists, these three fields emphasize social behavior and the influences of environmental variables; in contrast, evolutionary psychology has come to rely on assumptions deemphasizing the pliability of psychological mechanisms and the flexibility of human behavior. In behavioral ecology, primatology, and evolutionary biology, feminist evolutionists have found old biases easy to correct and new hypotheses practical to test, offering new insights into male and female behavior, explaining the emergence and persistence of patriarchy, and potentially bringing closer a prime feminist goal, sexual equality.

During the twentieth century, the feminist movement was one of the major sources of social change, with profound effects on both academia and society. Despite the many changes for women, tensions between older and more modern conceptualizations of females persist. These tensions are particularly evident in the relationship between evolutionary psychology and its precursor, sociobiology, as well as behavioral ecology, primatology, and evolutionary biology. Although evolutionary theory had its roots in the Victorian era and incorporated dogmatic ideas about sex differences, a group of women sociobiologists, a number of whom were influenced by feminism and feminist critiques of science, helped

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broaden evolutionary theory by examining selection pressures on females as well as males. Partly because of these feminists' contributions over the last thirty years, sociobiology moved away from sexist stereotypes and adopted a more dynamic, ecological, and historical approach to the study of female and male behavior.^{1, 2} These contributions also influenced those scholars who moved on to human behavioral ecology, evolutionary biology, and primatology.

Nonetheless, though evolutionary psychology emerged from sociobiology and shares its intellectual foundations with the other subfields,³ it retained sexual selection theory as it was used by sociobiologists in the later 1970s,⁴ which did not fully incorporate female perspectives. As a result, it still struggles with its conceptualization of women and its approach to feminism.

Not only do some evolutionary psychologists not take feminist criticisms seriously, evolutionary psychology's approach to human behavior in general contributes to feminists' skepticism and criticism of evolutionary approaches. Many feminists consider evolutionary approaches to human behavior to be detrimental to women and their pursuit of equality. Not only do they consider the literature to be biologically deterministic and reductionist, several feminists see it as inherently sexist.^{5, 6, 7, 8}

Evolutionary psychology sees human behavior as having evolved during the Pleistocene (1.7 million to 10,000 years ago) as natural selection helped form the human mind. According to evolutionary psychologists, the various psychological mechanisms that evolved in our ancestral environments continue to guide our thoughts, emotions, and behavior today.^{9, 10, 11} By focusing on an ancient environment of evolved adaptation, evolutionary psychologists tend to downplay the flexibility of humans to respond to their current environments and circumstances. Consequently, evolutionary psychology portrays human behavior as extremely slow to change. This premise that human behavior is rooted in the past (a past that we really do not know) and may not be changeable today has left evolutionary psychologists open to continued criticisms of determinism, reductionism, and storytelling, especially from feminists.^{12, 13} For many feminists outside the evolutionary sciences, this approach leaves little hope of women's liberation and equality because evolutionary psychologists maintain that patterns of inequality and some biased behavior are rooted in human psychological mechanisms that will persist despite feminist attempts to change behavior and society.^{14, 15}

On the other hand, behavioral ecologists, primatologists, and evolutionary biologists see behavior as evolving. These scholars see females and males as active and strategic agents in pursuit of their own reproductive success, using a variety of reproductive strategies in response to contemporary environmental pressures and constraints. In terms of female behavior in particular, behavioral ecology, primatology, and evolutionary biology tend to better integrate feminist and female perspectives into their analyses and models, correcting past and even current biases and creating new and testable hypotheses. These developments can be credited to a group of feminist evolutionists — such as Sarah Blaffer Hrdy, Jane Lancaster, Patricia Adair

Gowaty, Barbara Smuts, and Marlene Zuk — who definitely have brought new insights into the study of female behavior and various human social structures. The term *feminist evolutionist* is the best description of the evolutionary biologist, sociobiologist, primatologist, or behavioral ecologist whose work is informed by female perspectives and/or feminist theory and who uses them to formulate testable scientific hypotheses.¹⁶ Feminist evolutionists have pointed out not only the male biases in evolutionary theory but also that evolutionary approaches to human behavior are not inherently sexist.¹⁷ They have always called for the incorporation of female and feminist perspectives along with better science. Indeed, Gowaty addresses those who claim that feminist evolutionists allow their politics to direct their science:

Science is the practice of systematic observation and experiment as a means to test predictions from hypotheses while reducing or eliminating (i.e. controlling) the effects of perceived and possible biases on results and conclusions. So, what it means to be self-consciously political is that one is thereby in a scientifically better position relative to those who are unaware of the political and social forces potentially affecting their science. In my opinion the best one can do is to institute controls against one's perceived biases ... Buttressed with better controls, controls against potential biases we are able to perceive, makes our conclusions more reliable.¹⁸

While maintaining a fruitful dialogue with other feminists, feminist evolutionists have brought new insights into female and male behavior, have provided explanations as to why patriarchy emerged and persists, and have contributed to the feminist goal of greater equality of the sexes.

In contrast to more recent scholarship arguing that feminism and evolutionary psychology are potential allies,¹⁹ the actual professional behavior of feminist evolutionists themselves compellingly suggests that feminist insights and female perspectives are more readily incorporated into behavioral ecology, primatology, and evolutionary biology, presumably owing to a shared understanding of and approach to social behavior and environmental influence. Whereas evolutionary psychology assumes that humans' psychological mechanisms are currently unchangeable, feminist evolutionists see human behavior as responsive to its current

environment and capable of within-individual change. These differences help explain distinctions in the analysis of female reproductive choice and patriarchal structures and practices, the centerpiece topics in gender politics.

Foundations of contemporary evolutionary sciences and evolutionary psychology

The contemporary evolutionary sciences, including evolutionary psychology, are built upon Charles Darwin's theories of natural selection and sexual selection, both of which have profoundly changed how we view and understand both animal and human evolution.^{20, 21} Whereas Darwin and the evolutionists of the early twentieth century focused on the development of species, the evolutionary theorists of the 1960s and 1970s shifted their attention to how natural selection affected individuals and their behavior. During this period, several theoretical breakthroughs emerged to explain the evolution of social behavior at the level of the individual and to serve as the basis of contemporary evolutionary science. In 1966, George Williams presented clear and convincing arguments that explained that social behaviors — especially altruism — evolved not for the benefit of the species but rather because they enhanced the survival and reproductive success of the individual.²² In addition, William Hamilton's theory of kin selection drew attention to the fact that behavior besides actual reproduction can assist in the replication of an individual's genes. Individuals who help their relatives — with the appearance of self-sacrifice — essentially benefit themselves in terms of genetic self-interest.²³ To address the altruistic behavior that occurs among nonrelatives across species, Robert Trivers's theory of reciprocal altruism provided an evolutionary explanation of why this type of behavior is advantageous. Not only do these actions contribute to the survival and reproduction of unrelated individuals, they eventually contribute to the survival of the altruist or its offspring.²⁴ Finally, Trivers's parental investment theory expanded Darwin's theory of sexual selection. Trivers explained how natural selection acts upon both males and females, how reproduction influences the behaviors of the sexes, and how both sexes use various reproductive strategies.²⁵

These various theories were brought together and applied to social behavior across species — including humans — in Edward O. Wilson's *Sociobiology: The*

New Synthesis. Wilson defined sociobiology as the systematic study of the biological basis of social behavior across species. It is a hybrid discipline consisting of ethology, ecology, and genetics. Because sociobiology examines social behavior at the individual level, where particular social behaviors reflect the adaptive strategies shaped by natural selection, genetics is an important component of sociobiology. Behavior, though, is never inherited directly from an individual's genes; it is the result of the development of genetic, physiological, and environmental factors. Rather than studying species in a laboratory setting, sociobiology takes an ethological approach to the study of social behavior. Finally, sociobiology integrates ecological variables into the analysis, because variations in resources and habitats can affect the development and expression of particular social behaviors.²⁶

Overall, sociobiology attempts to explain the ultimate causation of behavior, *i.e.*, why certain behaviors have evolved and how they promote survival and reproduction within certain environments. Nevertheless, as scholars applied these new theories to human behavior in the 1970s and early 1980s, sociobiology aroused a great deal of controversy. Wilson and other sociobiologists were accused of doing "bad science" that was allegedly ideological, reductionistic, and deterministic. The work continued despite the criticisms, though frequently under labels other than sociobiology. Thus, much of the work in behavioral ecology, evolutionary psychology, ethology, and primatology employed the fundamental assumptions of sociobiology, though not the label.²⁷

The earliest works by evolutionary psychologists examined male and female sexuality and relationships across species. For example, in *Sex, Evolution and Behavior*, Martin Daly and Margo Wilson were among the first psychologists to examine sexual behavior across species using an interdisciplinary approach consisting of contemporary evolutionary theory, animal behavior, sex-role development, and cultural anthropology. They examined marriage patterns, love and jealousy, infanticide, incest avoidance, and sexual activities (*i.e.*, how males and females pursue distinct reproductive strategies to maximize their fitness). Though attempting to avoid generalizations of the sexes and noting exceptions, this early work tended to focus on the reproductive strategy of the female as parent and male as competitor, reflecting other sociobiological approaches

that were prevalent at this time. It is interesting to note that when they originally published the text, Daly and Wilson did not use the terms *sociobiology* or *evolutionary psychology*; they claimed to present an “evolutionary functional perspective.” In the second edition, they mentioned that their text could be used as an introductory text to the study of sociobiology.²⁸

Eventually, other psychologists interested in evolutionary perspectives began to distinguish themselves from the other contemporary evolutionary sciences by looking at various aspects of human behavior, feelings, and attitudes. By 1979, Donald Symons’s *The Evolution of Sexuality* applied evolutionary theory to the analysis of human sexuality, behavior, and attitudes.²⁹ According to David Buss, this was the first major work of evolutionary psychology proper, in which Symons argued that psychological mechanisms were adaptations.³⁰ Based on Bateman’s theory of anisogamy,³¹ Symons argued that the differences in human male and female sexuality and behavior are rooted in the observed differences in size of male and female gametes. Because females have larger and fewer gametes — eggs — and commit time to gestation and lactation, they tend to be more selective or “coy” regarding mate selection. On the other hand, males’ small and exponentially more plentiful gametes — sperm — have led them strategically to inseminate as many females as possible, spending most of their reproductive time and energy competing with other males for access to females. These differences led the male and female to divergent adaptive strategies, as during human evolutionary history. For example, because males spend considerable time securing mates through male-male competition and resource acquisition, men have attempted to control female sexuality to insure paternity. Therefore, male sexual jealousy evolved so that men could reduce the chances that they would invest their time and resources in children that may not be theirs. Symons maintained that those men who exhibited sexual jealousy increased the probability that their wives’ children were also their children.³² Rather than looking at current fitness-maximizing behavior, Symons and other evolutionary psychologists turned to humans’ evolutionary past in order to understand how the human mind works.

By the 1980s, psychologists interested in evolutionary theory began to distinguish themselves more formally from sociobiology and other evolutionary approaches. According to John Tooby and Leda Cosmides,

the formation of evolutionary psychology was not motivated by the controversies surrounding sociobiology. Instead, “the long-term scientific goal toward which evolutionary psychologists are working is the mapping of our universal human nature.”³³ In addition, they were motivated to create a new subfield because of developments in the computational sciences, advances in paleoanthropology and primatology, new research in linguistics and animal behavior, and the new theories in evolutionary biology. Tooby and Cosmides maintain that what makes evolutionary psychology distinct from human sociobiology and other similar evolutionary approaches is that it rejects fitness maximization as an explanation for social behavior.³⁴ In other words, human minds are adapted to past environments and are not currently pursuing fitness.

With the naming of this new subfield in the evolutionary sciences came more evolutionary psychologists examining the various adaptive problems that humans faced that affected their past reproductive success. For example, problems such as avoiding predation, choosing nutritious foods, and finding a mate directly impacted individual survival and future reproductive success. Evolutionary psychologists maintain that by understanding the selection pressures our hominid ancestors encountered, we can see the proximate information-processing mechanisms of the brain that evolved to solve these challenges. These mechanisms emerged through natural selection and help explain how people acquire and evaluate information and how they use information in making decisions about relationships.^{35, 36, 37, 38} Therefore, the human brain is an integrated bundle of complex mechanisms (adaptations) where each is “designed by natural selection in past environments to promote the survival of genes that directed its construction by serving some specific function.”³⁹

In regard to male and female reproductive behavior, evolutionary psychologists study various sexual strategies that they maintain are adaptive solutions to mating problems, such as identifying a desirable mate and competing with others in attracting a mate. Perhaps one of the most cited studies on human relationships in evolutionary psychology is by Buss. He expanded on Symons’s work, arguing that humans have evolved underlying psychological mechanisms — such as preferences for particular mates, desires for sex, feelings of love, or even jealousy — that are sensitive to the

environment, interactions with others, and what we know about ourselves. Based on survey data from 37 cultures and over 10,000 people, he concludes that for long-term relationships, human males express a preference for women who are youthful, healthy, attractive, and sexually loyal. These preferences have persisted because they are considered to be adaptive for human males' reproductive success. In their long term relationships, women tend to seek males who have resources, status, and tend to be older, ambitious, and dependable. The survey data also stated that women want men who are healthy, intelligent, and strong. According to Buss, these traits are universal because the data comes from cross-cultural studies, reflecting the common preferences that are related to men's and women's long-term reproductive success. Both men and women can pursue both long-term and short-term relationships, and these varying reproductive strategies may conflict.^{40, 41}

Other evolutionary psychologists of the 1990s also examined male and female relationships, but did not rely primarily on survey data as Buss did. For example, David Geary discusses differences in male and female reproductive strategies and links these differences to emotional, cognitive, and behavioral systems. He maintains that the "mind and body of the organism have been fine-tuned by selection pressures to enable the organism to attempt to gain control of the social, biological, and physical resources in its habitat and to organize these resources in ways that facilitate survival and reproduction."⁴² In addition, Geary recognizes that male and female reproductive strategies vary across cultures and contexts, and are sensitive to ecological and social factors. He cites various anthropologists, evolutionary biologists, and behavioral ecologists to support his arguments.

By 1999 Buss published *Evolutionary Psychology: The New Science of the Mind*, in which he discusses what evolved psychological mechanisms are, how evolutionary psychology is a science that generates and tests hypotheses, and the various problems that evolved psychological mechanisms are supposed to address. He delineates the various methods evolutionary psychologists use to test hypotheses — comparative analyses of different species, males and females, individuals within a species, and the same individuals in different contexts. Some evolutionary psychologists also use experimental methods. Buss also states that

evolutionary psychologists gather their data from archeological records, hunter-gatherer societies, observations, self-reports, life history data and public records, and human products. Though these are very good developments for evolutionary psychology in general, Buss still relies heavily on survey data, especially his own, in the chapters on male and female short- and long-term mating strategies.⁴³

In addition to the scholars who integrate psychological and anthropological data into their analyses, there are evolutionary psychologists and science writers who attempt to make the case that stereotypical male and female behavior is hard-wired and nearly immune to change. These scholars and writers have popularized evolutionary psychology in such a way that overstates the subfield's claims and is critical and dismissive of feminist criticisms and perspectives. In the cases of Robert Wright,^{44, 45} David Buss,⁴⁶ Steven Pinker,⁴⁷ and Steven Rhoads⁴⁸ in particular, they bolster their arguments for the evolved, biological basis of social behavior by arguing against feminists' claims that social behavior is changeable and flexible and that greater equality for women is necessary. Not only are these evolutionary psychologists and writers painting feminism with a broad brush, they fail to recognize the significant and on-going contributions that feminist approaches and perspectives have made to the evolutionary sciences.

Evolutionary psychology's relationship to feminism and feminist evolutionists

Over the past fifteen years, evolutionary psychology's relationship to feminism can be described as quite critical, if not overtly hostile. Though evolutionary psychology certainly examines female behavior, feminist perspectives and approaches have not been as welcomed as in other evolutionary sciences. Some evolutionary psychologists and their popularizers have argued that feminism is ideological and that it has a weak, flawed methodology. For example, in the first published article addressing evolutionary psychology and feminism together, the essay "Feminists, Meet Mr. Darwin," Wright argues that feminism promotes gender ideology and has a failed view of human nature. He chastises feminists for refusing to explore evolutionary psychology and its insights into male and female behavior.⁴⁹ To make matters worse, Wright does not even recognize the vast contributions feminist

evolutionists have made to the contemporary evolutionary sciences since the late 1970s.^{50, 51, 52, 53, 54} Indeed, Wright's hostility to feminist perspectives is also evident in his book *The Moral Animal*, in which he questions a feminist evolutionist and her ability to be objective — "Hrdy has described herself as a feminist sociobiologist, and she may take a more than scientific interest in arguing that female primates tend to be 'highly competitive . . . sexually assertive individuals.'"⁵⁵ Needless to say, Wright did little to build bridges between feminism and evolutionary psychology.

Buss's *The Evolution of Desire* addressed feminism as well. In his analysis of female oppression, he suggests that women are to be partially blamed for their oppression by men:

Men's dominant control of resources worldwide can be traced, in part, to women's preferences in choosing a mate. These preferences, operating repeatedly over thousands of generations, have led women to favor men who possess status and resources and to disfavor men who lack these assets. Ancestral men who failed to acquire such resources failed to attract women as mates. Women's preferences thus established a critical set of ground rules for men in their competition with one another.⁵⁶

From this perspective, these preferences then became innate psychological mechanisms over evolutionary time. Yet at the same time, Buss still states that women are not to be blamed for their own oppression by men. Which David Buss should we believe?

Perhaps in recognition of the persistent feminist criticism and the desire to showcase evolutionary psychology as a new and better approach to the evolution of human behavior, in 1996 David Buss and Neil Malamuth's *Sex, Power, Conflict* attempted a convergence between evolutionary psychology and feminism. Yet, this appears to be a qualified convergence. They began their project by making the distinction between "is" and "ought," identifying evolutionary psychology with what "is" and feminism with what "ought" to be. They seem to argue that though feminism may deal with objective knowledge, it certainly has a political and moral agenda regarding the relationships between men and women. At the same time, they certainly do not mention the possible biases in evolutionary psychology. Indeed, Buss describes evolutionary psychology as "a science geared toward understanding and

accounting for what exists."⁵⁷ This leads to two questions: Can science ever examine feminist approaches or test feminist-inspired hypotheses? Do biases or social/political agendas never influence the questions or interpretations of evolutionary psychology? Buss and Malamuth give the impression that evolutionary psychology can help save feminism from itself, making it more empirical and "enlightened."⁵⁸

Overall, Buss and Malamuth's attempt at converging evolutionary psychology and feminism fails. They tend to lump all feminists together, only examining a few radical critical examples. This calls into question their understanding of feminism in general. But more importantly, Buss and Malamuth do not understand or acknowledge what feminist perspectives have already brought to the evolutionary sciences over the last *twenty-five years*. For example, they cite Hrdy's 1981 book *The Woman That Never Evolved* as a "recent" work by a feminist evolutionist. This is just one example of how unaware they were of feminist contributions in other subdisciplines, and how late evolutionary psychology arrived on the scene of recognizing feminist contributions to evolutionary science.⁵⁸

The new millennium ushered in several new books on evolutionary psychology. Each of the following examples acknowledges the work of feminist evolutionists, but either does not take their contributions to the evolutionary sciences seriously or uncritically merges evolutionary psychology with feminist approaches to evolutionary theory. Even though Pinker's book *The Blank Slate* is seemingly less harsh in criticizing feminism and recognizes that sex differences have been used against women in the past, he does not address specific criticisms by feminist evolutionists or other feminists. He uses a few examples of feminists who embrace the "blank slate" conception of human nature and who want to force gender-free policies on people. These few examples become "straw women," and he does not address past feminist concerns about sociobiology and present concerns about evolutionary psychology. In order to support his argument, Pinker does list the names of feminist and female evolutionists who have contributed to evolutionary theory over the last 30 years. But that is all that he does—he provides names.⁵⁹ He does not make any references to most of the feminist evolutionists' work, and he does not use their research to support his argument that evolutionary perspectives can bring insights to our understanding of male and female behavior.

More recently, the failure to recognize the differences between feminist evolutionists and evolutionary psychology is evident in Matt Ridley's latest book, *Nature via Nurture*. For example, Ridley refers to Hrdy as an evolutionary psychologist.⁶⁰ She has never referred to herself as such, and she has used the label sociobiologist and primatologist consistently. In fact, she has been very critical of the stereotypes and methodologies used by evolutionary psychologists.^{61, 62} This is just one of a growing number of examples where evolutionary psychology is becoming the de facto label for all evolutionary approaches. This is also evident in Rhoads's *Taking Sex Differences Seriously*, where evolutionary psychology is deemed to be *the* evolutionary approach. He too does not take seriously the contributions of feminist evolutionists. Although he does acknowledge Hrdy's work in *Mother Nature* and that she is a feminist, he uses her work to support his argument against feminism in general and his argument that stereotypical male/female behaviors are rooted in evolved psychological mechanisms. He makes no reference to other feminist evolutionists, and he clearly does not address the criticisms of evolutionary psychology from within the evolutionary sciences.⁶³

Finally, and most recently, Griet Vandermassen's new book *Who's Afraid of Charles Darwin?* presents a detailed argument of how evolutionary psychology can contribute to feminism by providing it with a meta-theory.⁶⁴ Admittedly, there are several theoretical points that feminist evolutionists and evolutionary psychologists would agree upon. However, Vandermassen uses feminist evolutionist arguments and insights consistently to support, *and to correct*, evolutionary psychology at the same time. Indeed, Vandermassen is hard pressed to find an evolutionary psychologist who is also a feminist. For example, she states that evolutionary psychology provides insights into the development of patriarchy. She cites Hrdy and Smuts, who are primatologists, and Buss, an evolutionary psychologist. Whereas Hrdy's and Smuts's feminist evolutionist perspectives are well known, Buss's contributions are more controversial, especially because he is very critical of feminist perspectives. He has argued that women are complicit in the development of patriarchy because they have evolved preferences for men who have wealth, power, and status.⁶⁵ Feminists have certainly not embraced this explanation of patriarchy. In contrast, feminist evolutionists offer alternative explanations

that look at environmental variables and social structures rather than blaming the victims and their supposedly evolved psychological mechanisms.

Vandermassen also states that some evolutionists, including those who use feminist perspectives, have serious issues with evolutionary psychology's methodology and assumptions about female behavior. She cites various feminist evolutionists (such as Hrdy, Gowaty, and Smuts) who point out evolutionary psychologists' biases and shortcomings. Yet, she glosses over their concerns and continues her argument about how evolutionary psychology will contribute to feminism.⁶⁶ Though she uses their research both to support and cite problems within evolutionary psychology, she does not see the significance of the fact that these feminist evolutionists are sociobiologists, primatologists, and evolutionary biologists. She also does not explain why feminist evolutionists are so critical of evolutionary psychology.

Criticisms of evolutionary psychology

Over the last fifteen years, there have been many criticisms of evolutionary psychology, ranging from it being inherently sexist⁶⁷ to being methodologically flawed.⁶⁸ Some of these criticisms are similar to those made against sociobiology in the late 1970s and 1980s. Feminists in particular were outraged that biological theories might once again be used to support patriarchal relationships of power, dominance, and control.^{69, 70, 71} While evolutionary psychology still receives some of these criticisms, most critiques come from feminist evolutionists and other scholars within the contemporary evolutionary sciences.

Over the past thirty years, a group of feminist evolutionists has emerged from sociobiology, evolutionary biology, behavioral ecology, and primatology. They have used feminist perspectives and approaches to correct biases in evolutionary theory and to call for greater attention to the selection pressures on females. Rather than merely pursuing an ideological or political agenda, feminist evolutionists incorporate female-focused perspectives into their research and propose testable hypotheses that take seriously the complexity of social behavior (*i.e.*, considering ecological, cultural, and developmental variables). As Gowaty explains, "hypotheses sparked by feminist consciousness can be completely consistent with Darwinian explanations of

behavior and testable.”⁷² Though they share criticisms of evolutionary psychology’s methodology with non-feminist critics, feminist evolutionists have been the most vocal about how evolutionary psychologists make stereotypical assumptions about male and female behavior and how they have neglected to examine the complexity of social behavior. In this section, the paper will focus on specific criticisms by those scholars within the evolutionary sciences, several of whom are feminist evolutionists.

To begin, evolutionists from other subfields have expressed concern and criticism of evolutionary psychology’s concept of the environment of evolutionary adaptiveness (EEA). According to Tooby and Cosmides, “the environment of evolutionary adaptiveness (EEA) refers jointly to the problems hunter-gatherers had to solve and the conditions under which they solved them (including their developmental environment).”⁷³ The environments that evolutionary psychologists refer to are the organism itself, its physical environment, social environment, and the other species with which it interacts.⁷⁴ Human brains were structured to solve adaptive problems during our evolutionary history. This ancient and evolutionarily significant environment existed during the Pleistocene era when the human mind underwent significant expansion and development. According to Edward Hagen,

Sunlight, acoustic oscillations, volatile compounds, foraging, mates, dangerous animals, children, kin, social exchange, and group living have all been mapped by natural selection onto the structure of the human brain in the form of our visual, auditory, and olfaction abilities; our ability to navigate; our sense of taste and preference for foods; our sexual desires; our fears; our love of children, relatives, and friends; our aversion to incest and our ability to detect cheaters and to form coalitions.⁷⁵

Therefore, evolutionary psychologists generally maintain that people cannot be adapted to the present or the future, only to the past. Yet, it is not always clear when or where the EEA occurred. According to Wright, this was the period in which humans were hunters and gatherers, where people knew only their kin, and relationships were monogamous or polygynous.⁷⁶ In contrast, Tooby and Cosmides stress that the EEA does not refer to a single particular habitat or time period. They argue that it is a “statistical composite of the

adaptation-relevant properties of the ancestral environments encountered by members of ancestral populations, weighted by their frequency and their fitness-consequences.”⁷⁷ Regardless of when and where the EEA possibly occurred, the point that evolutionary psychologists stress is that the contemporary environment humans encounter is much different from the environment in which their adaptive psychological mechanisms evolved. Therefore, according to evolutionary psychologists, there is no way of knowing whether current behavior is adaptive.

This EEA concept raises concerns for behavioral ecologists, evolutionary biologists, evolutionary anthropologists, and feminist evolutionists. According to Robert Foley, there are methodological problems in adopting the EEA. If the EEA exists and is a uniform background to which all humans adapted in the past, then natural selection operates in a limited way on humans. Consequently, the psychological mechanisms that evolutionary psychologists claim to have found are strongly genetic and are based in the past.⁷⁸ This leads evolutionary psychologists to neglect the immediate and local responses humans have to their environment. Foley also states that there are problems in using hunter-gatherers and their environments as the model for the EEA. It is not always clear whether the reconstruction of the EEA is based on an actual assessment of the environment, or whether the environment is inferred from the adaptive characteristics of hunter-gatherers.⁷⁹ In addition, there is no one ancestral environment. Evolutionary anthropologists have made it quite clear that there are a variety of hunter-gatherer societies with diverse ways of life based on regional and cultural differences.⁸⁰ As Hrdy states in her book *Mother Nature*:

Rather than turning the EEA into a boilerplate for a host of unverifiable assumptions about the lifestyles of humans in the last several hundred thousand years, behavioral ecologists recognize that a number of possible environments might be evolutionarily relevant, depending on which trait is at issue.⁸¹

At the same time, the EEA does not take into account that human behavior has most probably evolved since the Pleistocene era. William Irons argues that 10,000 years could be plenty of time for evolutionary change, considering between 300 and 400 generations of humans existed during this time.⁸² In addition, Gowaty

maintains that evolutionary psychologists do not have a testable hypothesis when they assume that the Pleistocene is the EEA. Not only is their hypothesis unverifiable, evolutionary psychologists do not really know what the selection pressures were then. She agrees with Irons that the last 10,000 to 15,000 years may be a better EEA with the advent of agriculture. Indeed, the last few generations of humans could be considered our EEA, providing the data as well as testable hypotheses about human reproductive and social behavior.⁸³

Evolutionary psychology is also criticized for not paying enough attention to the role of both history and more recent, even present, environments and their effects on the expressions of behavior. Not only have feminists criticized evolutionary psychologists for this,⁸⁴ but feminist evolutionists and behavioral ecologists have taken them to task as well.^{85, 86, 87, 88, 89} Though not addressing evolutionary psychology directly, Mary Jane West-Eberhard has maintained that the phenotype is affected by natural selection well before the genes are. She defines "evolution as phenotypic change *involving* gene frequency change, not just gene frequency change alone ... The secret to understanding evolution is to first understand phenotypes, including their development and their responsiveness to the environment."⁹⁰ In regard to human behavior, evolutionary psychologists' focus on the EEA can lead them to neglect the importance of current sociological, economic, cultural, and political factors that influence human behaviors now expressed.⁹¹

This is particularly important as males and females make decisions regarding reproductive strategies. Individuals during their life times need to make calculated decisions regarding whether to be choosy or indiscriminate in their choices of mates, taking into consideration fitness differences among potential mates, time to reproduce, and other environmental cues.^{92, 93} Patricia Gowaty and Stephen Hubbell take these factors seriously in a quantitative model called DYNAMATE, which simulates individual behavior, mating success, reproductive success, and survival. This model examines the flexibility of reproductive behavior for both sexes within the context of life history, probability of survival, probability of encounters, receptivity, and different environments. Therefore, depending on the circumstances and the context in which individuals find themselves, both males and females theoretically can flexibly express choosy or indiscriminate mating

behavior. For example, if an individual's survival probability declines, the choice of mate will be indiscriminate because the possibility to encounter a more fit mate decreases. This directly challenges evolutionary psychology's fundamental assumption that, based on anisogamy, females will be choosy and males will be indiscriminate. Therefore, "regardless of parental investment patterns, not just females, but also males will be choosy under some circumstances."⁹⁴ This individual flexibility in sex roles is now documented in many nonhuman organisms under both experimental and field observational conditions.

Feminist evolutionists have been highly critical of evolutionary psychology's tendency to reinforce past and Western male and female stereotypes, especially in terms of reproductive behavior and mate selection,^{95, 96, 97, 98} and then stating that these preferences are universals across cultures, time, classes, and life history. From Darwin to the mid-twentieth century, many evolutionists assumed that females were highly selective, if not coy, in their choices of mates. This selectiveness is supposedly rooted in females' large and limited number of eggs and in the investment in time and energy that they (especially mammalian and primate females) give to each offspring in terms of gestation and lactation.^{99, 100, 101, 102} In response to this theory of the "coy female," Hrdy's work on primates shows that primate females were anything but passive and coy in their pursuit of mates. In some cases, they would solicit sex from multiple males as a strategy perhaps to confuse paternity, to ensure conception, or to secure resources for their offspring.^{103, 104, 105, 106} Zuk also provides evidence from many other species that females are not passive in mating, and that females can and do mate many times, often with different males, even though these females' eggs are indisputably larger and more limited than males' sperm.¹⁰⁷

In addition, feminist evolutionists have also criticized evolutionary psychology's stereotypes that women look for rich men as mates and that men look for young women as mates. In his study of 37 cultures, Buss first downplays the commonality that men and women have in looking for mates.^{108, 109} Among those surveyed, both sexes want mates who are kind, understanding, intelligent, and have exciting personalities, and these were the top responses in the surveys. Instead, Buss focuses on traits such as the physical attractiveness of females and the good earning capacity of males, even

though they were not the highest ranked qualities for either sex. Using survey data of males and females in their twenties, Buss only asked them their mate preferences and not their actual choices. In addition, Buss did not examine how those choices may have changed for these individuals over the course of their life histories.¹¹⁰

In her article "Raising Darwin's Consciousness," Hrdy argues that Buss's claims about female mate choices are not supported with the evidence from other primate species. Young, nonhuman, primate females usually experience subfertility or miscarriage, and therefore would not be an ideal choice for a nonhuman primate male looking for a mate. She suggests that it may be the case that the human males prefer young females because they can be more easily influenced or controlled. Hrdy also argues that women's predisposition toward wealthy men is probably biologically based, historically dependent, and situation dependent. Primate studies show that male control of resources preceded female choice for such males. In the case of women, they could be left with little or no choice but to mate with men who controlled the resources necessary for their own survival and reproduction. Hrdy maintains that such preferences emerge in the context of specific ecological, historical, marriage, and inheritance systems that men controlled. Rather than accepting the argument that the preferences are rooted in evolved, universal psychological mechanisms, Hrdy maintains that these preferences are flexible, influenced by the environment, and definitely open to change.¹¹¹

Another alternative explanation of female mate choice involves male parental care. Smuts and Gubernick suggest that long-term male parental care did not evolve from natural selection, but from sexual selection. Females preferred males who provided assistance with offspring. As human infants demanded more care for longer periods of time, females would have chosen males willing to provide this type of help. At the same time, males would have benefited too from this arrangement. Not only did they receive ongoing mating opportunities, they also achieved better paternity certainty.¹¹²

In a range of empirical studies over the last ten years, Gowaty^{113, 114, 115, 116} and Gowaty and Hubbell¹¹⁷ have demonstrated the importance of female choice and females' abilities to control resources and their own reproductive decisions. She has demonstrated through

her models and experiments that each sex has counter-strategies that profoundly impact the other sex's reproductive success. In "Sexual Dialectics, Sexual Selection, and Variation in Reproductive Behavior," Gowaty proposes a model of sexual dialectics that cogently explains the various relationships between the sexes and their effects on reproductive behavior and social organizations. When access to females limits male reproduction, males will be under selection pressure to manipulate and control females' reproduction. In other words, by using manipulation-control mechanisms, males will attempt to manage, restrain, and command females for their own reproductive advantage. Such behavioral mechanisms can have both costs and benefits for females' survival probabilities. For example, males can force copulations, control females' access to resources, or restrain females from pursuing other mates. At the other extreme, males may facilitate female foraging success, protect them from predators, or assist in raising other offspring. Although these manipulations may be "nicer," they may still manipulate and control female reproductive choices. Whenever females fail to freely choose their mates, they are under selection to resist attempts by nonpreferred males to manipulate and control their mating decisions. For example, if females are more mobile, they may be able to better resist direct control of males, or as their size relative to males increases, direct male control becomes more costly as females increase their ability to win fights. Finally, in those environments with more refuge for females, direct control by males should also decrease.¹¹⁸

Once females are successful at resisting direct control, males are under selection to manipulate and control female access to those resources necessary for their survival and reproduction. If such control is deleterious to female fitness, females would then be selected to resist again. Once females successfully resist male control of resources, eventually they will be free to choose males that exhibit honest signals of their quality as mates. This sexual dialectics theory is not only testable in both natural and experimental situations, it also challenges the assumption that females would prefer only males who control resources.¹¹⁹

Another issue that feminist evolutionists have with evolutionary psychology is that it tends to blame women for their own struggles with inequality and patriarchal systems. For example, evolutionary psychologists

initially seem to agree with feminists that some male sexual strategies bear out major elements of the feminist analysis of patriarchy — that men control resources worldwide, they oppress women's sexuality and their access to resources, and that women themselves can participate in their own oppression.^{120, 121, 122} However, Buss argues that men's dominant control of resources worldwide can be traced in part to women's preference for such men, which he argues is expressed repeatedly and invariably in dozens of studies.¹²³ Therefore, women's preferences set the ground rules for male competition. "Modern men have inherited from their ancestors psychological mechanisms that not only give priority to resources and status, but also lead men to take risks to attain resources and status."¹²⁴ This would then include men's control of resources women need and the establishment of patriarchal systems. Evolutionary psychology maintains that these preferences are inflexible because they are rooted in psychological mechanisms formed by sexual selection.

Finally, these issues therefore lead to questions about evolutionary psychology's methodology in general, and Buss's^{125, 126} in particular. In regard to Buss's research, he used questionnaires in his study of 37 cultures. Participants were asked questions about their personal preferences regarding long-term mates. This methodology has several flaws. First, self-reports of human behavior can be unreliable; individuals can lie and even give answers that they think the directors of the study want to hear.¹²⁷ Second, the samples in Buss's study were not representative of the populations within each of these cultures. Rural, lower-socioeconomic and less-educated groups were underrepresented, while Buss focused on college-aged individuals.¹²⁸ In another critique of Buss's work, David Buller argues that Buss only found averages of individual survey responses conformed closely to his hypotheses. There are averages of populations of these 37 cultures, not those of individual humans. According to Buller, "what Buss's survey results show is not that particular preferences are psychological universals, but that particular *average preferences are cultural universals.*"¹²⁹ Finally, another problem with this methodology is that individuals are asked these questions outside the real context of their lives. These are serious issues regarding this research, and evolutionary psychologists usually present this study as definitive. As Jeffrey Simpson and

Lorne Campbell argue, there has been an overreliance on self-reports, and multiple research methods and paradigms could certainly strengthen evolutionary psychology.¹³⁰

More recently, there are a handful of evolutionary psychologists who have begun to take these criticisms seriously and are examining more variables and behavioral flexibility, particularly in terms of mating strategies. For example, Hillard Kaplan and Steven Gangestad attempt to infuse life-history theory into evolutionary psychology to take into account how allocations of energy and time, along with cues from the environment, impact mating and reproduction.¹³¹ In addition, Gangestad and Simpson show that both males and females display both short-term and long-term mating strategies within certain contexts. They argue that there are within-sex variations in sexual strategies. Although there are men who do pursue short-term mating strategies, which some evolutionary psychologists assume to be the most beneficial to males, they are a small number, and this does not explain why men pursue a long-term mating strategy. Gangestad and Simpson state that a short-term mating strategy would be a conditional strategy based on particular environmental conditions and females' preference for indicators of genetic fitness. On the other hand, in environments where biparental care of infants was crucial to their survival, females would have preferred males who pursued a long-term mating strategy, and those males that pursued it would have found greater reproductive success.¹³² It is interesting to note that Gangestad and Simpson make reference to Hrdy's^{133, 134} and Gowaty's¹³⁵ works that have criticized evolutionary psychology's stereotypical assumptions about male and female reproductive strategies and the importance of environmental contingencies.¹³⁶ Their research has been informed by feminist evolutionists' perspectives, which has led them and other feminist evolutionists to challenge some of the assumptions and research done within evolutionary psychology.

The relationship between feminist evolutionists and behavioral ecology

Because feminist evolutionists tend to be very critical of evolutionary psychology, it leads to the question, what then is their foundational approach to the evolution of behavior? Many feminist evolutionists

have their intellectual roots in sociobiology, evolutionary biology, behavioral ecology, primatology, and evolutionary anthropology. They are interested in behavioral outcomes, whereas evolutionary psychologists are more interested in the psychological processes that lead to reproductive decisions.^{137, 138} Feminist evolutionists, like those scholars in these subfields, argue that natural selection acts indirectly on the mechanisms (psychological or genetic) of evolution. In other words, “what goes on in the mind is often less significant than what results from the behavior.”¹³⁹ Over the past 25 years, evolutionary approaches and feminism itself have complemented each other, offering insights into female behavior and the relationships between the sexes. In fact, those subfields that have roots in sociobiology — evolutionary biology, behavioral ecology, primatology, and evolutionary anthropology — have built strong bridges with feminism, and feminist insights have also been well received within these fields.

During the 1970s and 1980s, the influx of women and feminist evolutionists into the fields of sociobiology and primatology challenged the male-centered theories about reproductive behavior. They called for a

biosocial perspective on women [that emphasizes] the context-dependent nature of both their biological and behavior responses to the demands of reproduction. The evolutionary history of human female reproductive strategies has supported phenotypic and behavioral plasticity in ways that optimize a woman’s ability to access the resources necessary to produce and rear her children.¹⁴⁰

In other words, they emphasized the importance of ecological context, development, and life history in the evolution of social and reproductive behavior. Along with this new feminist perspective, feminist evolutionists were able to see females as actively and strategically pursuing their own reproductive success, calling into question the assumptions of male dominance and female passivity.

In their analyses of male and female behavior, feminist evolutionists have adopted behavioral ecological methods and assumptions. Like evolutionary psychology, behavioral ecology has its roots in Darwin’s theories of natural selection¹⁴¹ and sexual selection,¹⁴² Hamilton’s theory of kin selection,¹⁴³ and Trivers’s theories of reciprocal altruism¹⁴⁴ and parental in-

vestment.¹⁴⁵ According to Low, behavioral ecology begins its study of animal and human behavior with the following assumptions:

- Organisms are generally well-suited to their environments, acquiring resources necessary for their survival and reproductive success. Those that are more efficient at acquiring these resources will survive and reproduce better than others.
- Behavioral ecology tests heritable variations in gene frequencies over time. Genes spread throughout a population through reproduction and by assisting either kin or non-kin in a reciprocal way.
- Organisms, including humans, have not evolved to perceive or assess directly the spread of genes.
- Humans are like other organisms in that they have evolved to survive and reproduce.¹⁴⁶

The foundational research in behavioral ecology comes from animal studies where researchers examine current variations in traits, behaviors, and reproduction. There are opportunities for these animal researchers to test hypotheses on actual populations about the adaptiveness of traits and behaviors. These researchers are more interested in how social and ecological constraints impact individual behavioral options.¹⁴⁷

Humans throughout their history have encountered a variety of environments and have used many different strategies to survive and reproduce. According to Borgerhoff Mulder, a behavioral ecological approach sees individuals as facultative opportunists. They assess their environmental conditions and choose the most optimal fitness-maximizing strategies. From this perspective, individual behavior is definitely seen as more flexible and variable.¹⁴⁷ Though human genotypes are considered to be similar across contemporary human populations, variations in behavior are considered to be responses to various environmental influences. In other words, humans are adapted to a wide range of conditions rather than to a specific environmental state, such as the EEA that evolutionary psychologists maintain.¹⁴⁸

In terms of research on human behavior, human behavioral ecologists examine subsistence patterns, the influence of resources, parental investment, and reproductive strategies. In other words, behavioral ecologists want to know what the relationships are among environmental cues, the phenotypes, and the effect on fitness.^{149, 150} They look beyond the question of adaptation and also examine the role of chance,

development, historical contingencies, and phylogenetic constraints.¹⁵¹ This tends to be a piecemeal approach where, in terms of the study of human behavior, complex socioecological phenomena are studied piece by piece based on testable models and observable data.^{152, 153, 154}

Finally, a behavioral ecological approach to evolution focuses on phenotypes rather than genes or cognitive mechanisms. According to Cronk, "Human behaviors are seen as phenotypes that . . . are combined outcomes of interactions between genes and environments. Our species' remarkable behavioral plasticity and its capacity for culture are seen as outcomes of our evolutionary history."¹⁵⁵ Unlike evolutionary psychologists, behavioral ecologists are not concerned with the actual mechanisms (genes or psychological mechanisms) that lead individuals to their adaptive solutions. In fact, they choose to ignore genetic, phylogenetic, and cognitive constraints because they assume that they will have a minimal influence on phenotypic adaptation. Behavioral ecologists believe that humans are capable of rapid adaptive shifts in phenotype, adapting well to most contemporary environments.¹⁵⁶

Indeed, this phenotypic flexibility has been stressed by evolutionary biologist West-Eberhard. She is critical of sociobiology (and would be of evolutionary psychology) for focusing on genes at the expense of the environment and its impact on development. She states that "by imagining that there is a one-to-one relationship between genes and phenotype . . . biologists lose sight of the role of the environment and polygenic influence in development and evolution."¹⁵⁷ In addition, evolution and adaptive change work on the phenotype first and then on the genes. The changes that occur during development are a result of both the genes and the environment. West-Eberhard also argues that both animals and humans have phenotypic plasticity, which is the ability to "produce more than one form of morphology, physiological state, and/or behavior in response to environmental conditions."¹⁵⁸ In the past, plasticity was seen as "nongenetic" and therefore unimportant to evolution. However, phenotypic plasticity itself is a trait that is subject to natural selection and evolutionary change, guiding the direction and degree of responses to environmental factors. Therefore, all organisms have plasticity, the ability to react to both internal and external environmental inputs that may result in a change of form, state,

movement, or behavior. These changes may or may not be adaptive.¹⁵⁹

As stated earlier, there are many feminist evolutionists that have emerged from the various subfields of the evolutionary sciences, and their interests in feminism have corrected past biases^{160, 161, 162} and have provided new hypotheses to be tested. Gowaty, an evolutionary biologist and feminist evolutionist, has demonstrated that the evolutionary sciences and feminism share both philosophical and practical concerns in their research agendas. Feminism pays attention to the vast experiences of women, focusing on the proximate causes of what happens to women, how men gain and maintain control, and how women resist such control. At the same time, evolutionary science focuses on the ultimate explanations of differences and similarities of behavior and variations in social organization.¹⁶³

It is important to stress that though feminist evolutionists are concerned about the lives of women and would like to see greater equality between the sexes, they are scientists first. As Gowaty explains, feminist evolutionist hypotheses must be robustly tested using observations and controlled experiments. It is this scientific robustness that helps them control for biases — theirs as well as others. Feminist evolutionists see behavior resulting from an ongoing interaction between the organism and its environment. Rather than assuming that human behavior is fixed within evolved psychological mechanisms, they see evolutionary change as dynamic and ongoing, with great potential for change for men, women, and their social and political environments.¹⁶⁴

There are many points at which feminism and evolutionary science converge. For example, both evolutionary theorists and feminists are interested in the history of inequality and how interactions between individuals and social environments influence distribution of characteristics and resources.¹⁶⁵ In the development of patriarchal systems, human females' choices were probably constrained by social, economic, and ecological variables that were beyond their control, leaving them few options other than choosing men who had status and resources.¹⁶⁶ In other words,

A woman's preference for a wealthy man can be explained by the simple reality that in such societies males monopolize ownership of productive resources (cattle, land, high-paying jobs); a woman gains access

to resources that she needs to survive and reproduce through her mate.¹⁶⁷

In a more detailed analysis, Smuts offers several interrelated hypotheses on the origins of patriarchy — how men gained control over women's sexuality and the resources necessary for survival and reproduction. First, she suggests that among our early human ancestors, reduced social support from family and female allies jeopardized a female's ability to resist male aggression — a point that applies across primates generally.¹⁶⁸ At the same time, human male alliances became increasingly well developed. Not only did these alliances control male-male competition, they increased men's ability to control women, ranging from physical force to laws, norms, and social structures. Another factor that contributed to the development of patriarchy is the development of agriculture. This system required more intense labor power, enabling men to gain more control over the resources that women needed to survive and reproduce, further increasing men's ability to control and coerce women.¹⁶⁹

Smuts also states that the development of patriarchy can be attributed to the increased variance in male wealth and power during human history.¹⁷⁰ Not only did this make some men much more politically and economically powerful, it gave them greater access to women.¹⁷¹ In exchange for the resources necessary for their survival and reproduction, many women surrendered their own freedom and submitted to greater control over their lives. In societies with greater social stratification and unequal distribution of resources, males are preferred over females in terms of parental investment, power, and inheritance rules.¹⁷² A fourth factor contributing to the persistence of patriarchy is that some women themselves promoted male control of resources and female sexuality. These women saw the support of these social, political, and economic structures as necessary to their own reproductive success as well as their children. Finally, Smuts states that the human capacity for language has further enabled men to control women and the resources they need. Ideologies, laws, religion, and even science have been used to promote male superiority and female subordination.¹⁷³ Consequently, all of these factors have interacted with and reinforced each other to create social, political, and economic systems that have

reduced women's choices and created persistent sexual inequality.

Overall, feminist evolutionists maintain that both biological and environmental factors have contributed to the development of patriarchal structures and oppressive practices against women. At the same time, they recognize the importance of variation in human behavior and relationships and see males and females having potential choices and a variety of strategies emerging from different environments. In other words,

The logic of natural selection suggests that individuals should vary their reproductive behaviors as a function of the environments in which they find themselves. This way of looking at the evolutionary process places the environment at the center of the picture. Rather than blaming the victim or her hapless genes, such an evolutionary perspective finds fault with her surroundings.¹⁷⁴

Unlike evolutionary psychologists, feminist evolutionists take into consideration women's reproductive interests as well as how the interaction of resource availability, social structures, and male behavior itself can result in sexual inequality and oppressive conditions for women. Instead of seeing these patterns of behavior as unlikely to change, feminist evolutionists see human behavior as much more flexible, variable, and open to the possibility of greater sexual equality. In other words, human behavior is currently evolving.

The feminist evolutionists' insistence that evolution currently influences organisms and their behavior is supported by West-Eberhard's latest work, *Developmental Plasticity and Evolution*. This tremendous research has profound implications not only for evolutionary science, but for feminism itself. Even though she does not identify herself as a feminist, her work directly challenges the prevailing bias toward genetic selection as the driving force of evolution. She persuasively argues that phenotypes are not only flexible but have a plasticity that makes them responsive to a variety of environmental influences. In other words, the environment is an important agent of selection and evolutionary change. One of the most plastic traits is behavior, which can be an important initiator of evolutionary change. Behaviors can produce favorable and adaptive variations more quickly than changes in morphology, and behavior that occurs during development can influence morphology. This approach to evolution certainly

takes into consideration the role of learning and culture in looking at behavioral plasticity.¹⁷⁵

Not only does West-Eberhard's work directly challenge many of the assumptions of evolutionary psychology, it also supports those feminist evolutionists who, for the past twenty-five years, have argued that inequality, female passivity, and patriarchal structures are not adaptive and inherited behaviors from our Pleistocene past. Indeed, as women demanded more equal resource distribution by the late twentieth century, women have gained more power, status, and equality than they have had for most of their evolutionary history.

Conclusion

Feminist evolutionists have been critical of evolutionary psychology and its analyses of human male and female reproductive behavior since the early 1990s. Although their criticisms have focused on persistent stereotypes, questionable methodology, and an overall chill toward feminists, there has been little analysis as to why there is an ongoing conflict between these two approaches within the evolutionary sciences. This paper argues that many evolutionary psychologists have not taken feminist criticisms seriously. Instead, feminists have been chided for not embracing evolutionary perspectives and merely pursuing their own political agendas. At best, the most recent works in evolutionary psychology mention the contributions by female and feminist evolutionists, but do not integrate this literature into their own analyses.

This disconnect between feminist evolutionists and evolutionary psychologists continues today because of their fundamental assumptions about the evolution of human behavior. Evolutionary psychologists maintain that human psychological mechanisms were set during the Pleistocene era, and that these patterns of behavior persist today, even though they may be maladaptive in today's environment. Therefore, human behavior is considered relatively inflexible, at least in the short term, and that the status quo is here to stay. Most feminists are not receptive to evolutionary psychology because it presents human behavior as unchangeable, and no matter what social, economic, or political changes may be implemented, men and women will tend to make the same choices. It is certainly no wonder that feminists do not use evolutionary psychology to support their goal of greater equality for women.

On the other hand, behavioral ecological approaches to evolution examine both organisms and their reactions to the environment. Evolution is seen as current and a dynamic interaction between the organism and the various components of its environment — the ecology, resource availability, and the behaviors of other organisms. Feminist evolutionists have been trained in sociobiology, evolutionary biology, primatology, and evolutionary anthropology, all of which use behavioral ecological methods. It is not just a matter of feminist evolutionists adopting behavioral ecological perspectives for political reasons. The assumption of inflexible psychological mechanisms does not stand up to the research that demonstrates the flexibility and plasticity of behavior in other species as well as humans. Humans respond to their environments and have a variety of responses that can be beneficial to their survival and reproductive success. It is quite evident that humans are evolving.

Consequently, feminist evolutionists' work can certainly be considered liberating for women. These feminists have provided a dynamic understanding of the evolution of patriarchy and have shown that females are strategically active in the pursuit of their own reproductive success. They have demonstrated that human behavior is flexible and that there are various environmental factors that reduce female reproductive autonomy and choices. Not only do women not have to accept the status quo of sexism and sexual inequality, feminist evolutionist research supports women in their efforts to create those conditions that can better promote and protect their reproductive interests and sexual equality.

Laurette T. Liesen is an Associate Professor of Political Science at Lewis University in Romeoville, IL. Her areas of interest include political philosophy, feminism, biopolitics, female reproductive strategies, and human-nature theory.

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Women, behaviour, and evolution

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Women, behaviour, and evolution

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