

FEMINIST PERCEPTIONS OF EVOLUTIONARY PSYCHOLOGY:  
AN EMPIRICAL STUDY

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## DEDICATION

This dissertation is dedicated to my grandmother, Deane Rounsaville.

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## ABSTRACT

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## FEMINIST PERCEPTIONS OF EVOLUTIONARY

## PSYCHOLOGY: AN EMPIRICAL STUDY

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Evolutionary psychology has become increasingly popular over recent years, as evidenced by the growing presence of the theory in research, classrooms, and as specialization in doctoral programs. Within the field of psychology, there have been mixed reactions to the burgeoning existence of evolutionary psychology as a framework for understanding human behavior. It appears as though some psychologists, on one end of the spectrum, have eagerly endorsed evolutionary psychology as an over-arching and uniting meta-theory to explain patterns found in human behavior. Conversely, it would seem that other psychologists have been dismissive of the theory or highly wary of the consequences for embracing evolution as an umbrella theory for understanding human psychology. Perhaps one of the most visible and consistent movements to criticize evolutionary psychology has historically been feminism. While there has been discussion in the literature of feminist critiques of evolutionary psychology, social scientists have not yet systematically examined the impact of psychologists' feminist attitudes on their perceptions of evolutionary psychology. Given the increasing presence of evolutionary psychology within the field of psychology and the apparent conflict in relation to feminist theory, it appears as though further exploration of the issue would have the potential to

increase awareness of the exact nature of the discord. To investigate these relationships, the present research study compared 88 female psychologists' identification with various aspects of feminist theory and their perceptions of evolutionary psychology. The participants answered questions on an online survey comprised of a basic demographic questionnaire, three subscales of the Feminist Identity Development Scale, as well as researcher-generated questions about perceptions of evolutionary psychology theory. Results were examined with regression analyses, a principle component analysis, and a Cronbach's alpha test was utilized to determine the internal consistency reliability of the evolutionary psychology questionnaire. Results from the study revealed that psychologists who identified with the highest phase of feminist identity endorsed more negative perceptions about evolutionary psychology, preferred nurture explanations over nature explanations for patterns in human behavior, and possessed a higher mistrust in science than their colleagues identifying in the lowest and middle ranges of feminist identity. Moderate to high internal reliability was found for the perceptions of evolutionary psychology questionnaire and three components emerged within the measure: (1) concern related to the so-called status quo criticism; (2) mistrust in the field of biology; and (3) support for the social construction conceptualization of gender. Findings are discussed in terms of future areas for potential research, implications for theory and the integration of feminism and evolutionary psychology, clinical applications, as well as the training of psychologists.

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## CHAPTER I

### INTRODUCTION

Although enticing mixed feelings and opinions from both supporters and critics, in recent decades, evolutionary psychology has appeared to be growing in popularity. Simultaneously, as the spirit or zeitgeist surrounding the women's movement has ebbed and flowed over time, some scholars have posited that people's renewed interest in biological explanations for gender differences is actually movement backwards or even a negative reaction to gains made by feminist activism (Chrisler & Erchull, 2011). While there appears to be an absence of empirical studies to date demonstrating feminist attitudes or perceptions of evolutionary psychology, researchers have cited anecdotal evidence or conversations they have had with feminist colleagues on the issue of evolutionary psychology and their perceptions (Chrisler & Erchull, 2011).

For example, Chrisler and Erchull (2011) described conversations they have had with feminist colleagues, noting the feminists' primary concern regarding evolutionary psychology to be the problem that genetic behavioral patterns are not likely to change, otherwise known as genetic determinism. For their feminist colleagues, conceptualizing gendered behavior in terms of nature slashes hope for change, whereas acknowledging nurture as the primary mode from which humans learn gendered behavior provides a sense of efficacy for social change (Chrisler & Erchull, 2011). Furthermore, the above-mentioned feminists worried that evolutionary psychology will be used or cited to justify

current patriarchy and suggested that women should just accept or adjust better to their fate (Chrisler & Erchull, 2011). Feminists are not alone in having voiced concerns about evolutionary psychology (Smith & Konik, 2011). Eagly and Wood (1999) have argued, similar to Contratto (2002), that evolutionary psychology depends on so-called just-so explanations, meaning that researchers have developed a theory and then looked for evidence to confirm their ideas, ignoring support for alternative theories despite their existence. In terms of gender, Eagly and Wood (1999) have proposed that it has been simple for evolutionary psychologists to observe current gendered patterns in behavior and then argue that these same patterns developed in ancestral hunter-gatherer societies, as there is no true scientific way to test or disprove this claim. Given the increasingly influential trajectory of evolutionary psychology's inclusion in gender research, popular culture, and students' interests (Buss & Malamuth, 1996), it is likely not difficult for readers to imagine why feminists would be concerned.

Recently, in May 2011, a special edition of *Sex Roles* was printed and dedicated specifically to the relationship between feminism and evolutionary psychology. The edition featured feminist critiques of evolutionary psychology based on research demonstrating support for differing theoretical orientations, research conducted through an evolutionary psychology lens that has demonstrated adaptationist explanations for gender differences, and also empirical research that has been used to demonstrate an integration of evolutionary psychology and feminist theory, otherwise known as feminist Darwinian theory (Smith & Konik, 2011) or Darwinian feminist theory (Fisher, Garcia, & Chang, 2013). While not all critics of evolutionary psychology are feminists, the

special edition issue focused on feminist arguments about evolutionary psychology (Smith & Konik, 2011). An overview of the research and theoretical arguments featured in the issue will be presented in the following literature review.

Sexual strategies theory (Buss & Schmitt, 1993) is of central focus in the discussion of gendered behavior, feminist critiques of biology, and evolutionary psychology. Primarily concerned with the dismissal of culture in the sexual strategy theory explanation of behavior, feminists have also verbalized belief that the theory can be used to justify patriarchal oppression of women and encourage society to dismiss bad behavior promoting males' abuse of power by control of female sexuality (Smith & Konik, 2011). In sexual strategy theory, Buss and Schmitt (1993) have asserted that ancestral men and women faced differential environmental and biological demands in terms of parental investment, which consequently translated into development of specific methods, depending on sex, for selecting desirable mates. According to the theory, women have a higher cost in terms of parental investment; their commitment upon conception is already a minimum of nine months, and much longer after birth, if they want to ensure survival of their offspring. Furthermore, women produce a limited number of eggs in their lifetime. Given these constraints, the theory holds that women are the choosier of the sexes in terms of mates and tend to desire males who are high in the trait of commitment and are most likely to share their resources with their partner and offspring (Smith & Konik, 2011). Men are thought to have faced a different problem, resulting in development of a conflicting strategy, as their biological cost for parental investment could be as measly as one copulatory act. Thus, for ancestral men, seeking

minimal commitment and multiple opportunities to mate with many fertile women would have increased their likelihood of reproductive success (Smith & Konik, 2011).

Attempts to integrate evolutionary psychology, the sexual strategy theory specifically, and feminist theory have been made by some scholars (i.e., Vandermassen, 2004), and these scholars conceptualized sexual strategy theory as the explanation for why the sexes are socialized in particular ways. Historically, the scholars who have integrated the two theories in their writings have been quick to note their belief that social learning does exist and that it is very powerful (Vandermassen, 2004). Although feminist-evolution integrating scholars have endorsed sexual strategies theory as a distal explanation for gendered behaviors, they have acknowledged the role of social learning and culture. In the special edition issue of *Sex Roles*' introduction, Smith and Konik (2011) concluded with the researchers' urgent request for future research endeavors examining the relationship between feminist and evolutionary theories.

Vandermassen, author of *Who's Afraid of Charles Darwin: Debating Feminism and Evolutionary Theory* (2005), is one of the most prominent integrationist voices in terms of evolutionary psychology and the feminist debate. Vandermassen is a feminist by training and discovered evolutionary psychology while looking for more answers in terms of gendered behavior. Her position has been that she believes feminists' negative reactions are understandable and that it is not completely without reason that evolutionary psychology has been deemed sexist (Vandermassen, 2004). Chiding other fellow Darwinian feminists, like Hannagan and her 2008 paper on gendered political behavior, for being overly optimistic about the ease with which the two theories can be interwoven,

Vandermassen (2008) has stated that evolutionary psychology actually does have some unpleasant and discouraging ideas to offer feminism. For example, Vandermassen cited research supporting the idea that there are biological explanations as to why many women participate in the perpetuation of patriarchy (2008). That being said, Vandermassen also believes that feminists are in danger of leaving behind a highly valuable tool for understanding sexist behavior and patriarchy by dismissing an evolutionary approach (Vandermassen, 2004). Not only that, but she has argued that feminism is in danger of losing its credibility and an opportunity to inform evolutionary thought (Vandermassen, 2004). Mainly, she believes that it is much better for feminists to be involved in evolutionary psychology than to denounce and ignore its theories.

In response to feminist critics' claims that socialization of gendered behavior is just a given, Vandermassen (2004) has argued that the sexes differential mate selection traits, according to evolutionary theory, are traits that would be predicted, "even if all we knew about humans were that they are big-brained mammals, or whenever a hitherto unknown people were to be discovered" (p. 20). For example, women across cultures are predicted, and have been demonstrated, to value male mate quality over quantity of mates and are the more selective of the sexes (Vandermassen, 2004). Feminism, she has challenged, is missing an over-arching and unifying framework. Furthermore, she believes that this framework can be the main benefit of a scientifically based meta-theory on human nature, such as evolutionary psychology for feminism, as it can serve to bring more credibility to feminist theory (Vandermassen, 2004). Not only that, she believes that a lack of openness to other accounts of gender differences besides a social-

constructionist explanation can harm the feminist movement because, in order to understand human behavior as much as we possibly can, it is important to consider all types of information or ideas even though certain individuals deem them unpopular (Vandermassen, 2004). Vandermassen does not deny that socialization of male power and control over female sexuality exists; she does appear to want to know why this is the case. In her 2004 article entitled, *Sexual Selection: A Tale of Male Bias and Feminist Denial*, she stated, “We have to know what we are fighting if we want to fight it successfully. An evolutionary approach reveals the nature that we have to work with if we want to conquer it” (p. 23).

Conversely, there are many ways that evolutionary psychology can benefit from being informed by a feminist perspective. As mentioned earlier, feminist critique of evolutionary psychology is warranted and completely understandable given the history of the treatment of women in biology (Vandermassen, 2004). Although Darwin posited that female choice was momentarily influential to the course of evolution, as the mates that females had chosen would be the ones to have reproductive success, he was not completely successful in separating himself and his science from the Victorian zeitgeist of social prejudice (Vandermassen, 2004). In *Sexual Selection: A Tale of Male Bias and Feminist Denial* (2004, p.11), Vandermassen revealed Darwin’s prejudices:

...the male is the more active member in the courtship of the sexes. The female, on the other hand, with the rarest exceptions, is less eager than the male...she is coy, and may often be seen endeavouring for a long time to escape

from the male...the female, though comparatively passive, generally exerts some male choice and accepts one male in preference to others...The exertion of some choice on the part of the female seems a law almost as general as the eagerness of the male. (Darwin, 1871/1998, 229-30)

Man is more courageous, pugnacious and energetic than woman, and has a more inventive genius. (Darwin, 1871/1998, 576-7)

The chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence, in whatever he takes up, than can woman – whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands. (Darwin, 1871/1998, 584)

The previous comments revealed two ideas: Darwin was influenced by the prejudiced social zeitgeist, and feminist thought can definitely and needs to add to evolutionary psychology. Although Vandermassen (2004) has chosen to forgive Darwin, claiming that he theorized women to have an active role in driving evolution because of their choosiness in mates, originally, evolutionary and sociobiology theorists viewed women as more passive in terms of adaptation development (Vandermassen, 2004). Taking it a step further than forgiveness, Vandermassen continued to credit women scientists and stated that one of the primary reasons that more attention was to given to the female role in shaping evolution was the involvement of women in the field of animal



behavior (Vandermassen, 2004). Because of women's increased involvement in the field, language like the value-laden term, coy, with gender-linked meaning and culturally prejudice implications, has become recognized as unscientific (Vandermassen, 2004). There is a large difference between women being the choosier of the sexes and more discerning in selecting mates and their merely being passive or even worse, coy. Feminist involvement in evolutionary psychology can help shape the type of questions being asked as well as their interpretations and future directions in the field.

While there have been many feminist critiques written about evolutionary psychology (Vandermassen, 2005), and scholars have described passing conversation they have with feminist colleagues on the issue (Chrisler & Erchull, 2011), there appears to be a dearth of empirical exploration in the nature of feminist attitudes and perceptions of evolutionary psychology. The goal of this study is to further the empirical understanding of the relationship between feminist theory and evolutionary psychology. An evolutionary perspective predicts male desire to control female sexuality, which appears to be a call for feminist inclusion even more than if the theory were not to have predicted the very patterns found in socialized gender roles (Vandermassen, 2004). If the true nature of feminist rejection of evolutionary ideas can be better isolated, psychologists can better understand how to go about integrating the two perspectives. The goal of this study is to further the empirical understanding of the relationship between feminist theory and evolutionary psychology.

## CHAPTER II

### LITERATURE REVIEW

#### **A History of Feminist Theory**

What is feminism? According to some, feminist theory is not and has never been a singular united body of thought, which has probably been one of its greatest assets, while also making the project of defining the concept a rather difficult endeavor (Vandermassen, 2005). Each strand or wave of feminism developed largely out of political movements (Vandermassen, 2005) designed to change the way women are treated in society. Whether or not a certain strand of feminism is accepted, depends largely on individuals' worldview and basic assumptions about the human experience (Vandermassen, 2005). While the definition of feminism can vary greatly depending on whom you ask, one broad description of feminism involves the product of a multitude of political and philosophical systems designed to explain and to end sexist oppression (Vandermassen, 2005). The history of the feminist movement is nuanced, and the following description of the various strands or developments within feminism may better serve as a definition. While previous scholars have done an excellent job at attempting to classify and define the various facets of feminist theory (Donovan, 2008), many have been quick to note that it is nearly impossible to neatly categorize both feminists and the theory itself (Donovan, 2008).

The first wave, and perhaps also the most transforming wave of feminism, commonly known as liberal feminism, emerged during the 18th century and is marked by

Wollstonecraft's *A Vindication of the Rights of Women* (1792). In the same year (1792), a few months prior to Wollstonecraft, Olympe de Gournes issued a street pamphlet, *Les Droits de la femme*, which advocated for the rights of women during the early phases of the French Revolution (Donovan, 2008). Following the dissemination of her pamphlet, de Gournes was guillotined (Donovan, 2008). Simultaneously, in 1790 in America, Murray published, *On the Equality of the Sexes* (Rossi, 1973) and Abigail Adams was urging her husband to represent women and give them a voice in the constitution being drawn for the United States (Rossi, 1973). The idea that all people were entitled to certain natural rights upon which the government had no right to intrude, was dominating philosophical thought during the Age of Enlightenment (Donovan, 2008). These early feminists were set to make sure that the Age of Enlightenment applied to women as well as men. In fact, Wollstonecraft dedicated her 1792 manifesto to the French minister with a warning that, if women were excluded from the new constitution, chaos would remain. The liberal feminist argument was direct and simple, that women were entitled to the same rights as men (see de Beauvoir, 1949; Friedan, 1963; Stanton, Anthony, & Gage, 1881; Wollstonecraft, 1792; Young, 1999). Liberal feminism has also been termed, equity feminism, and has been characterized by the assumption that differences between the sexes are small and mostly the product of our culture (Vandermassen, 2005).

Progressing into the 19th century, a new group of feminists emerged within the same wave of the enlightenment age. Known as cultural feminists, this wave was differentiated from liberal feminism in their conceptualization of differences between the sexes (Vandermassen, 2005). Cultural feminists, also known as difference feminists,

argued that the very aspects of women that make them different from men are strengths to be celebrated (Vandermassen, 2005). Nineteenth century feminists were building on the feminist legacy from the enlightenment age that painted women as rational and completely able to take care of themselves if given the opportunity (Donovan, 2008). The agenda of the difference or cultural feminists was not only for women to have equal rights as men, but also to increase awareness about ways women are different than men and to strive for a society increasingly governed by values and concerns thought to be primarily female-oriented (Blackwell, 1875; Fuller, 1845; Gamble, 1894; Gilligan, 1982; Vandermassen, 2005).

The 1970's marked the beginning of the second wave of feminism (Vandermassen, 2005). One of the most influential works of the time was Betty Friedan's *The Feminine Mystique* (1963), which joined with liberal feminism and offered a significant voice for women during the rise of the civil rights movement (Vandermassen, 2005). Known as radical feminism, this new strand of difference feminism was the result of young women who had become disenchanted with the maintenance of sexist attitudes during the liberation movement (Vandermassen, 2005). The radical feminists both acknowledged differences between males and females and placed value on the differences (e.g., valuing nurturing over dominance), departing from their liberal feminist ancestry (Vandermassen, 2005). The slogan, "the personal is political" became the hallmark phrase for this time period, as women's oppression was defined as men's control over female sexuality and political involvement was redefined with radical feminists (Vandermassen, 2005). Radical feminists began to acknowledge

oppression in women's personal lives as well as in terms of institutional or unequal representation in influential aspects of society (Brownmiller, 1975; Dworkin, 1997; French, 1992; Millet, 1970.). Women's intimate relationships with men began to be examined in greater depth in terms of oppression during the emergence of radical feminism. While some radical and difference feminists examined differences between the genders, there are many feminists (e.g., Bleier, 1985; Butler, 1990; 1997; Connell, 1995; Fausto-Sterling, 1992; Harding; Hubbard, 1988, 1990; Tang-Martinez, 1997) who met the study of differences with great wariness (Vandermassen, 2005). One of the primary reasons for these feminists' suspicion of hypotheses about gender differences was because the mere idea that women are different from men has historically been used to continue women's oppression and keep them subordinate (Vandermassen, 2005).

Along with the second wave of feminism came another important branch of thought, socialist feminism (Hartmann, 1979; Vandermassen, 2005). The socialist feminists conceptualized women's oppression using classical Marxist theory (Hartmann 1979). Socialist feminists argued for the inclusion of class into the discussion of raising women's consciousness, a Marxist concept also known as class-consciousness (Marx & Engels, 1964). Similarly to Marx and Engels (1964), the socialist feminists emphasized gender privileges as being deeply embedded or institutionalized into society, and capitalism as largely responsible for the continuation of patriarchy and unequal access to labor between the sexes (Vandermassen, 2005). Thus, with the onset of socialist feminism, the issue of equality for women was conceptualized along with socioeconomic systemic issues as well.

In the 1980's, feminism had begun to develop several new strands (Vandermassen, 2005). First came the emergence of what has been termed black feminism (hooks, 1981) and then in the late 1980's, lesbian feminism emerged (Vandermassen, 2005). These feminist groups developed out of a need to answer what they perceived as a false universality of women's issues (Vandermassen, 2005). According to lesbian and black feminists, there existed too much variability among women to universalize their plight. Continually, the black and lesbian waves of feminism argued that this false kind of thinking perpetuated racism and sexism because it contributed to making the experience and context of minority women invisible (Vandermassen, 2005).

More recent waves of feminism (i.e., third wave) have moved from the political into the academic realm with what is called postmodern feminism (Vandermassen, 2005). Postmodern theory, along with queer theory (Butler, 1990), was built on radical social constructivism (Vandermassen, 2005). Radical social constructivism rejected all notions that there is a universal truth and viewed objective knowledge as impossible (Vandermassen, 2005). Postmodern feminism focused on deconstructing the meaning in society of what it is to be woman (Vandermassen, 2005). Furthering postmodern theory, queer theory (Butler, 1990) proponents not only argued that identities are constructed from language, but that our bodies are as well. According to Butler (1990), humans perform gender; they are not subjected to but are instead produced by culture; and humans are all born sexually ambivalent with society imposing heterosexist norms that result in the rejection of same sex desires.

## **Feminist Criticism and Evolutionary Psychology**

In order to demonstrate feminist criticism of evolutionary psychology, a closer look at language, its interpretation, and metaphors will aid the following discussion. Postmodern feminism's concept of there being no objective truths about human nature and that language shapes our socialization provides the basis for many criticisms of evolutionary psychology (Vandermassen, 2005). For feminists across many of the strands of feminism, one uniting assumption is that the dominate voice in society (i.e., patriarchy) silences the oppressed (i.e., women) and if science is shaped by patriarchy and claims to be examining universal truths, then it is another way to institutionalize sexism (Donovan, 2008). Feminists argued that scientists are claiming to be objective when in fact they are influenced by gender bias (Beldecos et al., 1988). Some feminists went further, claiming that the false representation of objectivity has been detrimental to the integrity of science (Beldecos et al., 1988). To illustrate this point further, a metaphor used by Dawkins (1976) can be discussed. In an attempt to capture a description of adaptable variant genes, Dawkins (1976) used the term selfish to describe them. Dawkin's selfish gene metaphor has frequently been a focus of critics (Beldecos et al., 1988). For some feminists (e.g., Beldecos et al., 1988), the basic idea underlying the criticism has been this: if our genes are selfish, does that mean that selfishness is valued and that humans beings are conceptualized as being selfish to their core? For evolutionists, considering the example of the male peacocks' tail feathers, Dawkins would have termed the gene resulting in the colorful extravagant tail feather display as selfish because it had increased inheritance at the expense of the more homely feathers.

Terming the differential colorful feather gene selfish did not mean that Dawkins had harsh judgment of the gene for lacking compassion or altruism, as often gets attributed to the term by critics (Hagen, 2005; Vandermassen, 2005).

While the selfish gene metaphor has made for a concise way to write and talk about genes in terms of natural selection, it seems as though most readers would have been able to have compassion or relate to critics' (Beldecos et al., 1988) concerns about biased interpretations based on language. Evolutionists argued that the problem has stemmed from human's application of meaning and common folk wisdom to the term selfish in the case of genes, and held that every adaptation in the human body has evolved from natural selection, meaning everything from hair, feet, eyebrows, vision, muscle tone, and working memory (just to name a few) (Hagen, 2005). It would appear just as nonsensical to describe our eyebrows, the result of selfish genes, as inherently deep-down selfish to their core as it would to worry that our vision is selfish (Hagen, 2005). As postmodern feminists Fraser and Nicholson (1988) argued, sexism has been the result of culturally discursive practices, including language used in science. Prominent in the field of cognitive science, in a stance that is counter to postmodern feminist thought and queer theory, Pinker (2002) asserted that virtually all cognitive psychologists and linguists agree that language does not have to be a cage for thought or a prerequisite for a caged-type of thinking.

In an article entitled, *On the intersection of evolutionary psychology and feminism*, Kuhle (2012) pondered the question of why feminists have been reluctant to acknowledge evolutionary (or nature-based) explanations for psychological differences



between men and women, but have not been hesitant to accept nature as a helpful explanation for similarities in the psychology of gender or anatomical differences. Kuhle (2012) hypothesized that the naturalistic fallacy (i.e., the idea that what is natural also must be right and moral), or the misunderstanding of genetic determinism, is most likely at the root of the argument. To believe that a genetic cause is natural and that it must mean that the genetic cause is also good would indeed be frightening or even repulsive (Kuhle, 2012). As discussed elsewhere in this literature review, evolutionary psychology is not seeking to validate, justify, or encourage negative phenomena, like men raping women (e.g., Thornhill & Palmer, 2000). The evolutionary psychologists seek to discover the underlying processes that will account for the persistence of gendered socialization (Kuhle, 2012). Kuhle (2012) proposed ideas for future research, suggesting a need for researchers to explore whether or not individuals who falsely believe that evolutionary adaptationists view nature as unchangeable, and as a justification for lack of social change, are more likely to endorse feminist views. He argued that feminist thought needs to evolve and that feminists are at risk for becoming blinded by their biases and misperceived threats to their agenda (Kuhle, 2012).

In recent decades, an adaptationist perspective of human behavior and gender differences has grown increasingly common among researchers in the behavioral sciences (Tybur, Miller, & Gangestad, 2007). Not only have several doctoral programs in evolutionary psychology emerged in universities across the globe, adaptationist ideas have also been incorporated into the course work, research orientation, and training in many other psychology programs (Tybur et al., 2007). The trend of integrating

evolutionary ideas as a meta-theory for understanding human behavior appears to be mirrored within mainstream culture as well. Best-seller lists have featured popular science books influenced by evolutionary psychology, and articles have begun steadily appearing in high impact journals housing a range theories seeking to understand human behavior, such as *Science*, *Nature*, and *Behavioral and Brain Sciences* (Tybur et al., 2007). In fact, within the past decade, Darwinian theory of evolution and sexual selection has become the unifying theory within the biological sciences (Vandermassen, 2004). The rise of evolutionary psychology, however, has not come without criticism.

Across many disciplines, most scholars have agreed that the way the human body functions has been shaped by adaptations over evolutionary time (Hagen, 2005). More specifically, Western scientists have tended to agree that human bodies have evolved in a way to function and facilitate survival when met with environmental demands (Hagan, 2005). The proposal from evolutionary psychology that our brains have been shaped by the same process as our bodies has not been met with equally widespread approval (Hagen, 2005). Instead, evolutionary psychology is often met with fiery criticism for rejecting the idea of mind-body dualism (Hagen, 2005). In a chapter delineating aspects of the controversy surrounding evolutionary psychology, housed in the *Handbook of Evolutionary Psychology* and edited by Buss, Hagen (2005) offered a clear and articulate argument for concluding the brain has adapted via the same process and to the same end as the body, while simultaneously acknowledging limitations or assumptions of evolutionary psychology. Hagen claimed that, while most common criticisms at first appear unrelated, despite being equally scathing, they all emerge from mind-body

dualism (Hagen, 2005). In his evolutionary-based description of the brain, it is as if Hagen viewed the perspective from a thoroughly objective standpoint, looking at the brain with no understanding of ingrained societal norms or assumptions:

If we learned of a mysterious new structure in the body, we might reasonably assume that it, like the heart, lungs, liver, kidneys, bones, muscles, blood cells, intestines, uterus, testicles, and ovaries, performed one or more as yet unidentified functions intimately related to an individual's survival or reproduction. We would base this assumption not on evolutionary theory, but simply on the overwhelming empirical evidence that this is what all other tissues and organs do. When we learned that this organ was responsible for a number of functions such as vision, olfaction, and motor control that had clear utility for survival and reproduction, our assumption would seem reasonable indeed. When we further learned that this organ, though constituting only 2% of the body's mass, consumed 20% of its energy and that substantial damage to the organ usually resulted in immediate death of the organism, we would rightly conclude that the functions of this organ must be critical to the survival, and thus reproduction, of the individual. We would then seem to be

on extremely solid ground if we proposed exploring the properties of the organ as a set of mechanisms designed to do just that. Indeed, given what we know about the organization of the rest of the human body and given what we already know about some of the mysterious organ's functions, we should find this proposal almost banal.

(Hagen, 2005, p. 146)

Contrary to being met as a common sense notion or with banal approval (Hagen, 2005), findings from evolutionary psychology have been met with much controversy.

### **Presence of Evolutionary Psychology in the Field**

While there appears to be a lack of empirical studies demonstrating feminist attitudes toward evolutionary psychology to date, researchers have begun to question how scholars are discussing evolutionary psychology, given the mixed reviews it has received (Chrisler & Erchull, 2011). After conversations with feminist colleagues, Chrisler and Erchull (2011) conducted a review of current social psychology textbooks seeking to determine how authors are presenting and/or critiquing the theory of evolutionary psychology regarding gendered behaviors. The researchers' goal was threefold: (1) to ascertain exactly what information is being given to undergraduates about evolutionary psychology; (2) to examine whether or not, or in what areas, there is a pattern of agreement among social psychology textbook authors about the important or influential aspects of evolutionary psychology theory for understanding human psychology; (3) and to be able to recommend certain textbooks to professors based on the degree to which

they want to introduce evolutionary psychology to their classes (Chrisler & Erchull, 2011). The study provided a picture or snapshot of how much evolutionary theory is permeating undergraduate psychology classes. While the information gleaned from Chrisler and Erchull's study (2011) has not assisted in uncovering the nature of gender researchers' and feminist psychologists' reactions to evolutionary psychology, the results do reveal important information that had otherwise remained elusive.

Out of the 17 most recent edition social psychology textbooks chosen from a list provided at <http://www.socialpsychology.org/texts.htm>, researchers discovered that evolutionary psychology was mentioned in all but one of the texts, which appeared to be tailored more for sociology courses than social psychology courses (Chrisler & Erchull, 2011). Interestingly, while some of the authors chose to present biology and culture as clashing opposites, 11 out of 16 of the textbooks featured evolutionary psychology in the beginning chapters as an umbrella theory or overarching explanation to provide a background for understanding human social behavior (Chrisler & Erchull, 2011). Researchers found that even though some of the textbooks wove evolutionary theory throughout the entirety of the text in a seamless fashion, none of the authors of the textbooks presented the theory without criticisms (Chrisler & Erchull, 2011). The most commonly cited criticisms were that evolutionary psychologists use circular reasoning, untestable hypotheses that result in hindsight bias, and extreme generalizations that leap too far from one species to another (Chrisler & Erchull, 2011). Based on their results, Chrisler and Erchull (2011) concluded that there does seem to be a pattern of agreement among the authors of social psychology textbooks, regardless of personal beliefs about

nature versus nurture in shaping gendered behavior, that evolutionary psychology is too important to dismiss and students need to understand the theory.

As stated in the introduction to this paper, of central discourse in the discussion of feminist critique of evolutionary psychology is the sexual strategies theory (Buss & Schmitt, 1993). In sexual strategy theory (Buss & Schmitt, 1993), it is proposed that, because of differing demands and biological restrictions for men and women in terms of parental investment, the sexes have developed unique strategies for selecting mates. Women experience a higher reproductive cost for bearing offspring, have a finite number of eggs, and an identifiable window of time when they are fertile across their life span. Men have much less of an investment cost in producing offspring, are not limited by finite levels of sperm, and are thought to have adapted a sexual strategy to maximize these demands. Thus, for ancestral men, seeking minimal commitment and multiple opportunities to mate with many fertile women would have increased their likelihood of reproductive success. For ancestral women, high selectivity in choosing mates, who share resources and monogomously commit to ensure survival of offspring, would result in the highest likelihood of reproductive success (Smith & Konik, 2011).

### **Controversies surrounding Evolutionary Psychology**

#### **Nature versus Nurture**

While feminist arguments against evolutionary psychology have typically been comprised of explaining human behavior in terms of nurture instead of nature, they also have challenged the way evolutionary theory has been applied and the science used to support its claims (Smith & Konik, 2011). Feminist psychologists and social scientists

have generated research results providing support for social constructionist perspectives with the aim of discounting evolutionary perspectives of gender differences (Harris, 2011; Smith, Konik, & Tuve, 2011; Tate, 2011). The feminist perspective has claimed that evolutionary psychology promotes the view that women and men come from completely different planets (i.e., the “Mars and Venus” idea of gender roles), suggesting that women just need to deal with their unsatisfying lot in life (Perrin, Heesacker, Tiegs, Swan, Lawrence, Smith, Carrillo, Cawood, & Mejia-Millan, 2011). Researchers attempting to demonstrate support for evolutionary theory have at times found support for gender similarities. For example, Sylwester and Pawlowski (2011) found that both men and women preferred risk avoiders and viewed them as more attractive as long-term mates than risk seekers. Thus, demonstrating that some studies within evolutionary psychology utilized hypotheses and provided support for interpretations discussing gender similarities as well as differences.

In another example, when looking at the social problem of rape and the predominant feminist view along with the predominant evolutionary psychology view (Vandermassen, 2011), the nature versus nurture debate becomes highlighted and emotional. While there is no singular theory of rape for either feminism or evolutionary psychology, the majority of feminists, along with other social scientists, have conceptualized rape as a way for men to exert power over women by keeping them in a state of fear (Vandermassen, 2011). More specifically, the feminist view posited that rape is not about a desire for sex (Brownmiller, 1975; Vandermassen, 2011). Turning to evolutionary psychology, scholars tend to point to the emergence of rape within species

long before the existence of humans. Evolutionary psychologists tended to support the idea that there may be some sort of mechanism shaped by adaptations to account for patterns associated with rape (e.g., the largest group of rape victims that men target are young women) (Vandermassen, 2011). Some scholars have argued that the disagreement is based on a false dichotomy, that nature and nurture do not have to be mutually exclusive (Vandermassen, 2011) and that perhaps the power and control hypothesis can coexist with the adaptation hypothesis, which explains why these patriarchal behaviors develop. A salient example of the nature vs. nurture controversy can be found in a discussion of evolutionary and feminist views of rape.

**An evolutionary psychology view of rape.** For nearly a quarter of a century, social scientists have conceptualized and researched rape through a learning theory lens (Thornhill & Palmer, 2000). Social learning theory held that our behaviors are a product of socialization or culture. When applied to sexual coercion, feminists and learning theorists posited that rape is supported by our patriarchal culture, is motivated by men's desire for power and control over women, and has nothing to do with sexual urge or lust (Brownmiller, 1975; Thornhill & Palmer, 2000). In other words, rape is an act of violence meant to promote men's societal domination over women, and is entirely independent of sex. While widely supported, this view of rape is entirely at odds with an evolutionary understanding of the issue (Thornhill & Palmer, 2000). Using an evolutionary psychology model to understand a behavior like rape could result in great leaps for solving social problems. For example, it is because of evolutionary psychology studies that psychologists know the single greatest predictor of childhood sexual abuse to



date: the presence of a step-parent in the home (Confer et al., 2010). This knowledge could potentially facilitate ways to reduce the rate of child abuse; hopefully, the same would be true of understanding rape from an evolutionary psychology framework.

Contrary to the social learning perspective that rape is devoid of sexual motivation, numerous studies have found that rapists report sexual desire as partly, if not solely, causal of their actions (Thornhill & Palmer, 2000). Not only that, the studies demonstrating that rapists cite power and control as their motivation to rape used convicted rapists as research participants who may be seeking secondary gain for reporting socially desirable responses that would minimize their perceived impulsive sexuality (Thornhill & Palmer, 2000). When reading the social learning theory literature and contrasting it with literature housed in an evolutionary perspective, it appears that a value judgment was applied to sexual behavior on the part of social scientists. From the social learning perspective, it seems that the only sexual behavior that is operationally defined as sex is a consensual, loving, act, in which both partners feel positively. From an evolutionary perspective, like many other concepts within the theory, sex can be understood as a copulatory act serving to promote a species. The primary goal of evolutionary theory is to study human behavior as the result of evolved psychological mechanisms, influenced by internal and environmental information, for the behavior that is manifested (Confer et al., 2010). While there is some debate within the field of evolutionary psychology about the adaptive nature of rape, and the devastating costs of rape to victims are acknowledged, it is largely understood as a mating tactic (Lalumiere, Harris, Quinsey, & Rice, 2005). The evolutionary perspective on rape proposed that rape

is part of nature, instead of a consequence of a patriarchal society; however, the fact that rape is viewed as an inherent part of men's adaptations does not mean that evolutionary psychologists morally excuse the act (Archer & Vaughan, 2001).

Studies on rape, across the board, consistently revealed that women in their most fertile years are greatly overrepresented as victims (Thornhill & Palmer, 2000). Not only are women overrepresented as victims in the age range of late teens and early 20s, these findings are replicated across cultures and around the globe (Thornhill & Palmer, 2000). Viewed from an evolutionary perspective, if the social learning assumption that men choose their rape victims without any consideration of sexual desire were true, researchers would not see this selection bias in age range of victims. The overwhelming finding in the research, that women are likely to be in their most nubile phase of life when raped, supported an evolutionary perspective for men attempting to spread their seed. Not only have research findings regarding the demographics of victims supported an evolutionary conceptualization of rape, but research findings also demonstrated that rape occurs across cultures and across species (Thornhill & Palmer, 2000). If it were true that social learning created the act of rape, researchers would not expect to see this type of behavior in other non-human animal species. These findings of rape in the animal world are contrary to Brownmiller's (1975) claim that, because animals do not have language that promotes patriarchy, no one has observed non-human rape in the wild (Thornhill & Palmer, 2000). Research indicated that forced copulation has been occurring widely in the animal world, predating the presumed origin of rape, patriarchy, or social learning theory (Archer & Vaughan, 2001).

From an evolutionary psychology perspective, the problem with relying on a learning explanation for understanding human behavior is that it is too reductionistic, assuming that humans are blank slates in which input from their environment shapes and molds them (e.g., parent to child). Not only does this explanation fall short of specifying why socialization, such as patriarchy, occurs in the way it does, it leaves out the required psychological adaptations that enable learning to occur in our brains (Confer et al., 2010). Empirical work within an evolutionary framework has challenged the social learning alternatives. For example, in a meta-analysis of 172 studies of differential parent socialization of sex-typed preferences for girls and boys, researchers found most effects to be non-significant or small (Confer et al., 2010).

Scholars viewing rape through an evolutionary psychology lens have also produced research describing why there are individual differences in men who rape (Lalumiere et al., 2005). Understanding literature about individual differences in men who rape requires consumers to have a command of the evolutionary framework of rape as a sexual behavior or mating effort of men, which has been discussed in the previous pages. At the aggregate level, statistics indicated that the same factors, such as youth, that influence men's capacity to commit crimes of violence also influence their capacity to commit rape (Lalumiere et al., 2005). Also, increased levels of personality traits related to antisocial characterology have been demonstrated to be associated with sexual behavior (Lalumiere et al., 2005). These personality traits, including hypermasculinity, a tendency toward manipulation, and heightened levels of risk-taking, were also correlated with an increase in the number of partners and frequency of intercourse for men in the

sample (Lalumiere et al., 2005). The next logical step is to observe these variables in their relationship to rape.

Researchers have conducted studies, which demonstrated that sexually coercive men show less empathy, have more conservative views of gender roles, are more violent or aggressive, and are more likely to engage in nonsexual antisocial behaviors (Lalumiere et al., 2005). While this may at first seem to be common sense, it is interesting to note how this finding fits within an evolutionary framework of rape. When engaging in mating efforts, both men and women tended to minimize or reduce costs. Costs may include a loss of time or energy, and increased distress. If an individual ancestral man experienced empathy within the normal range, the psychological cost of violently raping an ancestral woman would be high so that it may have served as a deterrent. The high cost of distress would not be the case for a man who had empathy deficits; in his case, the potential to pass along his genetic code through copulation with a non-consenting and desired woman (i.e., rape) would not have the same psychological cost.

The evolutionary psychology perspective on mating suggested that, because investment in offspring for men could be as measly as a single copulatory act, it is beneficial for men to have sex with many different women in order to insure that their genetic code is passed to the next generation. This theory is supported by several studies regarding individual differences in rates of sexual coercion and intensity of sex drive. For example, in a study of 195 men, Senn, Desmarais, Verberg, and Wood (2000) found that a greater number of sexual partners in adolescent males was highly predictive of later self-reported sexual coercion of women (Lalumiere et al., 2005). Also, rapists tended to

report higher sex drives and goals, as well as increased levels of frustration, despite a greater engagement in sexual activity than their non-rapist counterparts (Lalumiere et al., 2005). Thus, rates of sexual coercion and intensity of sex drive, along with antisocial tendencies, have suggested higher mating efforts for rapists than non-rapists.

Recent evolutionary psychologists have also investigated intimate partner rape. The explanation of intimate partner rape has typically been a unique problem for evolutionary psychologists studying rape. This unique problem has been cited by social science theorists as a reason to invalidate evolutionary-based claims, because social science theory proposed that men would only rape women for whom they would not otherwise have access to for sex. However, in forensic samples, intimate partner rapists were found to have experienced perceived cuckoldry risk events (i.e., perceived that their intimate partner was sexually unfaithful) prior to raping their partner (Camilleri, 2009). Thus, even though intimate partner rape does not increase partner number, it can be explained in terms of sperm competition.

More recent research within the field of evolutionary psychology has observed women's attempts to avoid rape and sexual coercion. The powerful aspect of these studies, in terms of supporting a biological explanation versus a social learning explanation for behavior, is that researchers have tracked behavioral changes in coercion avoidance across the menstrual cycle (Navarrete, Fessler, Fleischman, & Geyer, 2009). In study on out-group race bias, women who were highly fertile were more likely to demonstrate implicit race bias for men outside of their own race (Navarrete et al., 2009). Evolutionarily speaking, ancestral women would have benefitted from being more wary

of men who were from different tribes because of a greater likelihood of antagonistic situations (Navarrete et al., 2009). It would have also benefitted women if this evolved avoidance mechanism increased at times of their increased fertility, when they were ovulating. These findings cannot be explained by social learning theory.

**Social learning conceptualization of rape.** A social learning perspective on rape pointed to patriarchy and the attempt to control women as the cause of rape (Donovan, 2008). More specifically, scholars, such as Brownmiller (1975), Clark and Lewis (1977), and Burt (1980), described the importance of rape myths, which are defined as prejudicial stereotypes and beliefs about rape that are false, and that perpetuate a society that is hostile to women, allowing men to rape women. Examples of a rape myth include: “only bad girls get raped”; and “women cry rape only when they have been jilted or have something to cover up” (Burt, 1980, p. 217). Brownmiller (1975) conceptualized rape as a powerfully effective way for men to control women and for men to establish dominance (i.e., patriarchy) by keeping all women in a constant state of fear.

Feminists have argued that men raping women directly mirrors the values of society as a whole (Harway & O’Neil, 1999; Katz, 2006;). In a model explaining the causes of men’s violence against women, Harway and O’Neil (1999) proposed a multivariate approach to highlight the influential variables involved. Harway and O’Neil asserted that macrosocietal factors, biological factors, gender-role socialization factors, and relational factors all interact to affect men’s violence against women (Harway & O’Neil, 1999). Both macrosocietal and gender role socialization factors are also supported by Katz’s conceptualization of men’s violence against women (2006) and

emphasize the patriarchal/institutional structures that oppress women and keep men in power. The biological factors that have contributed to men's violence against women are the hormonal and neuroanatomical physiology of men, while relational factors that have contributed to this violence focus on verbal interactions between intimate partners (Harway & O'Neil, 1999). This model was the first to explain the multifaceted and complicated interaction of factors involved in men's violence against women. More specifically, the model emphasized men's predisposition for violence against women, as an alternative perspective, to replace existing ideas about the ways that women were held responsible for the violence directed at them (Harway & O'Neil, 1999).

In an article detailing the gendered meaning of violent acts for women and men, Russo and Pirlott (2006) argued that it is necessary to go beyond descriptive statistics of rates of violence against women and men, to extend an understanding of how gender affects the dynamic of violence. Patriarchal values, reinforced by major institutions, including male entitlement, objectification of women, status, and power, are key structural players in gender-based violence (Russo & Pirlott, 2006). The role of macrosocietal gender role socialization in the perpetuation of men's violence against women is oftentimes an easier concept for women to grasp than it is for the men who are experiencing the privilege of patriarchy. For example, a man who has paid a woman prostitute for sex may be reluctant to understand how this is exploitative and promotes the subordination of women (Katz, 2006). The reluctance of men to acknowledge the role of patriarchy in perpetuating gender-based violence does not occur because men are

bad or unable to understand, it is because the urgency and pain involved in the experience of a marginalized group is simply not felt and can be ignored by the privileged group.

The social structures reflecting inequitable gender roles are deeply ingrained in our daily lives and permeate the workplace, serving to maintain violence against women in insidious ways. For example, some studies have demonstrated that power and sexuality are linked, particularly for men who are likely to engage in sexual harassment of women, so that sexual attractiveness in women is associated with their subordination (Russo & Pirlott, 2006). What this means is that, in those men who are most likely to sexually harass women, when ideas of power are primed, men's thoughts of sexuality are encouraged. The inverse is not true (Russo & Pirlott, 2006).

As socialist feminists, Sokoloff and Dupont (2005) noted the importance of considering both individual and structural analyses of race, class, and gender in both the perpetuation of men's violence against women and the advocacy for its extinction. One of the primary reasons these authors cited the necessity for understanding gender-based violence with the considerations of race, class, and gender is that, in its absence, the criticism and analysis of men's role in the issue may become another voice of privilege, depending on who verbalizes the criticism (Sokoloff & Dupont, 2005). For example, if a White woman in graduate school is conceptualizing the critique, without consideration of race and class, her racially privileged voice may result in maintaining invisibility of other oppressed women's unique experiences. Likewise, Sokoloff and Dupont cited research indicating that class had been underemphasized in the current literature and promoted the idea that race, class, and gender were integrated, socially constructed



diversities affecting the perpetuation of gender oppression (Sokoloff & Dupont, 2005).

Building on the previous example to illustrate Sokoloff and Dupont's argument (2005), if the White woman's access to graduate school were not privileged in terms of class, this would negatively impact her access to resources allowing her to criticize aspects of gender oppression.

### **Is Evolutionary Psychology Racist or Sexist?**

Understandably, one of the most highly emotionally charged assertions and fears held by critics of evolutionary psychology has been that the theory poses a severe threat to the value and promotion of human equality (Hagen, 2005). Evolutionary psychology's answer to this fear has been two-fold. Adaptationists have asserted and produced cross-cultural research demonstrating that the human body has evolved in nearly identical ways anatomically (Hagen, 2005). That being said, it is possible to have mild differentiations (i.e., skin color). Evolutionary psychologists have applied the same model to human psychology. While no known differential cognitive adaptations have been found to exist cross-culturally, the theory has been open to the possibility (Hagen, 2005). Similar logic has been used in terms of sex differences. Adaptationists have argued that male and female bodies have evolved in similar, almost identical ways, with some specific exceptions (i.e., ovaries and testicles) (Hagen, 2005). They have also argued that the male and female brains have adapted in nearly identical ways, except in the realm of mating, where the sexes have faced fundamentally different problems (Hagen, 2005).

Evolutionary psychologists have noted that, while theory pays attention to differences between groups, the idea that one group or sex should be privileged over

another is most definitely not promoted (Hagen, 2005). In fact, in the *Handbook of Evolutionary Psychology* (Buss, 2005), Hagen (2005) mocked the senselessness of interpreting findings about differences between the sexes in mating preferences in a value laden way. Hagen stated that interpreting sex differences in terms of one difference having value over another is just as asinine as claiming that testicles are more or less superior to ovaries. Also, recent academic writing, which has summarized literature on cross cultural waist-to-hip ratio preferences (Singh & Singh, 2011), conducted from a feminist Darwinian perspective, has emerged with a decidedly feminist tone in its interpretations.

### **Genetic Determinism**

Many criticisms of evolutionary psychology have stemmed from worries or accusations that the theory and its researchers are genetic determinists (Hagen, 2005) and that both do not take context into account when explaining sex differences (Smiler, 2011). According to Hagen, what critics typically mean by use of the term genetic determinism is that behaviors are genetically predetermined, not that adaptations in the brain are determined by genetics. Hagen (2005) has argued that, in one sense, critics are right because genes underlie adaptations. On the other hand, evolutionary psychology proposed that hundreds or thousands of modules in the brain have adapted with certain mechanisms to solve evolutionary problems in relation to the environment and that human behavior has been thought to be highly flexible (Hagen, 2005). Evolutionary psychology offers explanations about why humans are socialized as they are and why

human beings are likely to behave in certain ways. This interpretation is quite different from proposing that it should be this way.

For example, critics worried that, when evolutionary psychologists' hypothesize that social problems, such as rape, homicide, stalking, or jealousy, have had biologically adaptive purposes for ancestral humans, these ideas would legitimize or justify bad behaviors (Hagen, 2005). In *The Handbook of Evolutionary Psychology* (Buss, 2005), Hagen (2005) argued against these worries with this example: a man in court testifying that he should not be put in jail for killing someone because his genes made him do it is likely to hear from the judge that she is sorry but her genes are making her find him guilty (Hagen, 2005). Hagen (2005) asserted that human brains have evolved with capabilities for critical thinking and impulse control but that, if critics want to refer to adaptations as genetic determinism, then human beings are just as genetically predetermined for moral behavior as human beings are for immoral acts. Hagen (2005) has noted that he believes it would be extremely hard, if not impossible, to find that evolutionary psychologists are making a deliberate attempt to justify or defend social hierarchies and the status quo of social structures.

### **Political Criticism**

In addition to the view that evolutionary psychologists may be inherently sexist or racist is the idea that they are also pushing a political agenda that is counter to that of feminists. The criticisms aimed at adaptationists, which have remained largely unchanged from those aimed at the sociobiologists of the 1970s, can be broadly grouped into two categories: (1) evolutionary psychologists are strongly influenced by right-wing

political agendas and aim to maintain the status quo in terms of relations between races, classes, sexes, and cultures, and (2) improper scientific methods are used by evolutionary psychologists, such that they are practicing a pseudo-science in order to spin stories into their narrow Darwinian doctrine (Tybur et al., 2007). While not all feminist critiques can be categorized into these two groups, some are related to these concerns.

In 2007, researchers Tybur, Miller, and Gangestad sought to test the hypothesis commonly held by evolutionary psychology's critics, suggesting that adaptationists use their theory and research studies to support a right-wing political agenda, and in doing so, provide evidence for the assertion (Hagen, 2005) that it would be hard to find an evolutionary psychologist defending the status-quo. Providing the first quantitative examination of the adaptationists as right-wing-conspirators (ARC) hypothesis, results from their study indicated that not only are adaptationists much less politically conservative than the general U.S. population, but they are also no more conservative than their non-adaptationist peers. Furthermore, Tybur et al. (2007) found that adaptationists endorse research methods that are more rigorous, quantitative, and progressive than their non-adaptationist colleagues. Prior to the Tybur et al. study and although the ARC hypothesis has been assumed to be true and central to both academic and popular evolutionary psychology criticism for more than 30 years, never before had there been quantitative analysis of the hypothesis. The study was important because, if Darwinian psychologists were homogenously right-wing conservatives who favored the status-quo, then it is likely true that the perceived legitimacy of their research would be severely impaired (Tybur et al., 2007). If adaptationists as a group did endorse right-

wing political views, for which Tybur et al. (2007) found evidence to the contrary, it would have been important to explore how this type of endorsement influences hypothesis generation, results, and interpretations from experiments conducted within evolutionary psychology.

It should be noted that many criticisms of evolutionary psychology also come from the religious right as well (Hunt, 1999; Pinker, 2002). Critics from the religious right have asserted that adaptationism is a liberal conspiracy and these religious communities ostracize the theories as an antithesis to their worldview and values (Pinker, 2002). It appears as though evolutionary psychology has been simultaneously characterized as holding two extremely opposite agendas, and is viewed as politically threatening from both the right and the left (Tybur et al., 2007).

Currently, the conflict regarding politics and evolutionary psychology has been empirically documented by Pinker (2002) and Tybur, Gangestad, and Miller (2007). While the empirical literature seeking to understand resistance to evolutionary psychology is sparse, studies are beginning to emerge (Geher & Gambacorta, 2010). In one of the first studies to provide empirical evidence that the battle is specific to the idea that men and women evolved through organic evolutionary forces to engage in differential behavioral patterns, Geher and Gambacorta (2010) tightened the focus of the discussion from the broad resistance to evolutionary psychology to the specific notion of evolved sex differences. Given that resistance to evolutionary psychology has primarily been voiced by academics (Geher, 2006), and given that adaptationists have been accused of being right-wing conspirators (Tybur et al., 2007), and given that parents are more

likely to see their children in a gendered manner than non-parents and attribute fewer behavioral differences to socialization (Witt, 1997), Geher and Gambacorta sought to determine if (a) employment in academia, (b) political orientation, and (c) parental status had important effects on perceptions of natural/evolved behavioral sex differences between human females and males. Results from their study demonstrated that political liberalism and academic employment status were predictive of endorsement in nurture as the process responsible for sex-differentiated behavior, whereas parents were more likely to view nature as the cause of sex differences (Geher & Gambacorta, 2010). Interestingly, human universals demonstrated support for the idea that resistance to evolutionary psychology is isolated to the realm of sex differences (Geher & Gambacorta, 2010).

Evolutionary psychology may have an important role in addressing the very social problems feminist scholars have identified, despite scathing reviews of the theory by feminists (Buss & Schmitt, 2011). Researchers have wondered if one of the strongest markers that evolutionary psychology is founded on good science is that it has offended just about everyone (Hagen, 2005). Although proposing hypotheses that have been infuriating to many different groups has been uncomfortable for many evolutionary psychologists, it has been argued that this is a positive phenomena, as too much uncritical support for existing and popular political and moral agendas would indicate that science had been lost (Hagen, 2005). Further exploration of feminist attitudes toward evolutionary psychology appears to be needed. One of the claims made by many evolutionary psychologists toward the feminist critique of evolutionary theory is that

feminists allow their dogmatic bias and political agenda to drive a solid refusal to consider a relationship between biology and gendered behaviors (Liesen, 2011). Furthermore, there are many evolutionary scholars who are taking feminist criticisms into account and have begun to consider life history, social/family context, and various environmental variables into account in their studies (Liesen, 2011).

### **Summary**

In summary, the history of feminism is rich, complex, and important. Simultaneously, evolutionary psychology is a burgeoning theory with increasing influence within the field of psychology. While it appears that both fields have something to offer each other and can be integrated, there is contention. Reading the literature, it would seem as if the two schools of thought are not talking about the same issues, even when they appear to be answering each other's critiques. Perhaps this is related to the process of shifting through different paradigms. Regardless, more exploration is required to better understand the conflictual relationship between feminism and evolutionary psychology.

### **Purpose of the Study**

There is a dearth of empirical research designed to examine psychologists' opinions of evolutionary psychology. In the present study, the author examined psychologists' degree of identification as a feminist and perceptions of varying aspects of evolutionary psychology (i.e., application of the theory, methodology, and interpretations). Based on previous writings by both feminist scholars and evolutionary

psychologists, the following hypotheses were proposed. Differences will be determined based on statistical significance.

- 1a. The Passive Acceptance subscale of the FIDS and negative perceptions of evolutionary psychology will be negatively correlated.
- 1b. The Embeddedness-Emanation subscale of the FIDS and negative perceptions of evolutionary psychology will be positively correlated.
- 1c. The Active Commitment subscale of FIDS and negative perceptions toward evolutionary psychology will be positively correlated.
- 2a. The Passive Acceptance subscale of FIDS and acceptance of nurture will be negatively correlated.
- 2b. The Embeddedness-Emanation subscale of FIDS and acceptance of nurture will be positively correlated.
- 2c. The Active Commitment subscale of FIDS and acceptance of nurture will be positively correlated.
- 3a. The Passive Acceptance subscale of FIDS and mistrust in science will be negatively correlated.
- 3b. The Embeddedness-Emanation subscale of FIDS and mistrust in science will be positively correlated.



3c. The Active Commitment subscale of FIDS and mistrust in science will be positively correlated.

4a. The Passive Acceptance subscale of FIDS and negative beliefs about examining sex differences will be negatively correlated.

4b. The Embeddedness-Emanation subscale of FIDS and negative beliefs about examining sex differences will be positively correlated.

4c. The Active Commitment subscale of FIDS and negative beliefs about examining sex differences will be positively correlated.

5a. The Passive Acceptance subscale of FIDS and negative assumptions about adaptationists will be negatively correlated.

5b. The Embeddedness-Emanation subscale of FIDS and negative assumptions about adaptationists will be positively correlated.

5c. The Active Commitment subscale of FIDS and negative assumptions about adaptationists will be positively correlated.

6a. The Passive Acceptance subscale of FIDS and acceptance of body-brain dualism will be negatively correlated.

6b. The Embeddedness-Emanation subscale of FIDS and acceptance of body-brain dualism will be positively correlated.

6c. The Active Commitment subscale of FIDS and acceptance of body brain dualism will be positively correlated.

## CHAPTER III

### METHODS

#### **Participants**

The 88 female psychologists (estimated sample size determined based on power analysis: Field, 2009; Green, 1991; Miles & Shevlin, 2001) were recruited based on membership in the American Psychological Association (APA) through division listservs. Psychologists from three psychology specialties were sampled: Counseling Psychology (Division 17), Clinical Psychology (Division 12), and School Psychology (Division 16). The psychologists were also recruited based on their membership as directors in internship programs belonging to the Association of Psychology Postdoctoral and Internship Centers. In order to be eligible to participate, psychologists must have successfully completed their doctoral training.

#### **Measures**

##### **Demographic Questionnaire**

The participants were asked to complete a demographic questionnaire (see Appendix A) to assess characteristics of the study's participants, as well as to gather information about their background and knowledge related to the study's hypotheses. The questionnaire contained items related to personal characteristics, and participants were asked to disclose their age, sex, gender, sexual orientation, political ideology, religious/spiritual orientation, occupation (i.e., academic, clinician, both), ethnicity, and relationship status. Participants were also asked whether or not they have completed a

doctoral program in psychology, what year they obtained their degree, and how much exposure they have had to evolutionary psychology.

### **Feminist Identity Development Scale (FIDS)**

The FIDS (Bargard & Hyde, 1991; see Appendix B) is a 48-item measure developed to determine a woman's level of feminist identity development based on Downing and Roush's (1985) model of feminist identity development. The FIDS has five subscales of feminist identity: (1) Passive acceptance, (2) Revelation, (3) Embeddedness-emanation, (4) Synthesis, and (5) Active commitment (Green, Scott, & Skaggs, 2008). This study included the passive acceptance, embeddedness-emanation, and active commitment subscales because they have been demonstrated to have the highest internal consistency (Moradi et al., 2002).

The Passive Acceptance (PA) subscale of the FIDS measures level of feminist identity in the initial stage. This first stage is characterized by ignorance, minimization, or denial of discrimination against women at individual, institutional, and cultural levels. People scoring in this phase of feminist development are conceptualized as tending to accept traditional gender role stereotypes and avoid situations or people who would pose a challenge to the views (Moradi et al., 2002). Also, people adhering to this phase of development tend to believe that sex-role stereotyping is beneficial (Green et al., 2002). The PA subscale consists of 12 items in a five-point Likert scale format, with higher scores indicating higher levels of passive acceptance of traditional gender roles. A sample item from this PA subscale is as follows: "I don't see much point in questioning the general expectation that men should be masculine and women should be feminine."

The Embeddedness-Emanation (EE) subscale of the FIDS measures the extent to which individuals identify with the third stage of feminist identity development.

Embeddedness involves individuals enmeshing themselves in women's company and uncritically adopting feminist ideology. In emanation, the individuals are integrated into society and form flexible and close relationships with men, while still maintaining their new feminist views (Moradi et al., 2002). The EE subscale consists of six items in a five-point Likert scale format, with higher scores indicating individuals are identifying with either embeddedness or emanation; a high score in either phase would result in a high EE score. A sample embeddedness item is: "Particularly now, I feel most comfortable with women who share my feminist point of view." A sample emanation item is: "My social life is mainly with women these days, but there are a few men I wouldn't mind having a non-sexual friendship with."

The final stage is known as Active Commitment (AC). In the AC phase, individuals have translated their fully formed feminist identity into continual work toward changing society from patriarchal ideology and eliminating oppression. In this phase, feminists are characterized by evaluating feminism from an individualized perspective (Moradi et al., 2002). The AC subscale consists of eight items in a five-point Likert scale format. Higher scores on the subscale indicate the final stage of feminist identity development. A sample item from this subscale is, "I want to work to improve women's status."

Moradi et al. (2002) conducted internal reliability tests on the subscales and found Passive Acceptance, Embeddedness-emanation, and Active Commitment to have the

highest degrees of internal consistency of the five scales: Passive Acceptance = .79, Embeddedness-emanation = .76, and Active Commitment = .77. The two scales with the lowest internal reliability and deemed unacceptable (Green et al., 2008; Moradi et al., 2002) were Revelation (.64) and Synthesis (.52). The Active Commitment subscale has been demonstrated to have a standardized reliability coefficient = .80 (Green et al., 2002). Previous researchers have omitted the Revelation and Synthesis subscales when measuring feminist identity because of their unacceptable internal reliability (Green et al., 2008).

The FIDS has been demonstrated to be a valid instrument (Moradi & Subich, 2002) and any correlations between social desirability and the subscales of the FIDS were nonsignificant to absent (Bagad & Hyde, 1991; Gerstmann & Kramer, 1997). Moradi et al. (2002) assessed content validity of the FIDS using Fischer et al.'s (2000) procedures, with three judges blindly assigned to discern a test item into the corresponding phase of feminist identity after reading a description of Downing and Roush (1985) stages. For the entire scale of the FIDS, hit ranges were 87% to 100% and only AC and Synthesis (S) subscale items were misplaced (AC misplaced = 17%; S misplaced = 7%) (Moradi et al., 2002). These misplaced items occurred by the same judge (Moradi et al., 2002). Researchers deemed the FIDS to be the most valid instrument in comparison to the Feminist Identity Composite (FIC) and the Feminist Identity Scale (FIS) (Moradi et al., 2002).

### **Attitudes toward Evolutionary Psychology Survey**

The Attitudes toward Evolutionary Psychology Survey (see Appendix C) is a 17-item, five-point Likert-scale survey, generated by the researcher and based on a review of the literature on feminist critiques of evolutionary psychology. Previous researchers have sought to gather information about perceptions of evolutionary psychologists and attitudes toward science (Tybur et al., 2007). The questions Tybur and colleagues (2007) posed to the participants were used as a model for this researcher to develop the questionnaire for the current study. Tybur et al. (2007) developed several statements to measure trust or mistrust in science, such as: “Science is the best tool for understanding how the world works”; “Scientific methods are the only legitimate tools for making reliable inferences about the world”; and “Scientific researchers overestimate the degree to which they understand the world.” Using the Tybur et al. (2007) survey as a model, this researcher generated similar questions aimed at measuring perceptions toward evolutionary psychology, trust in the scientific process, ideas about body-brain dualism, nature vs. nurture, assumptions about evolutionary psychologists, and attitudes toward examining sex differences. Sample items from this survey are: “I believe that a social constructionist view of human nature is necessary for the granting of equal rights to women.”; “I believe that our bodies are a product of evolution, but that our mind (brain) is not”; “I believe it is helpful to explore psychological differences between men and women”; and “Scientific researchers often manipulate their results to support their ideas.” Higher scores on the survey indicate stronger negative attitudes toward evolutionary

psychology, whereas lower scores indicate greater likelihood of acceptance for evolutionary psychology.

### **Procedure**

Members of the American Psychological Association's Division 12, 16, and 17 as well as directors of doctoral internship training sites in the American Association of Postdoctoral and Internship Centers received an email message containing a recruitment letter (see Appendix D) explaining that the purpose of the study is to examine psychologists' attitudes toward various approaches to science and understanding human behavior. All psychologists recruited were informed that participation is strictly voluntary and that they may withdrawal from the study at any time without any penalty. If potential participants wished to continue with the study, they were asked to click on a link taking them to the informed consent document in psychdata where the study was located online. Participants were asked to read the informed consent document, and at the bottom of the informed consent document (see Appendix E), there was a box to click indicating that they have read the document and agree to continue. Potential participants were informed that clicking the box at the bottom of the informed consent document constitutes their agreement to the terms of the informed consent form. After giving their informed consent, participants were presented with the online version of the Feminist Identity Development Scale, followed by the Attitudes toward Evolutionary Psychology Survey, and to the brief demographic questionnaire.



## **Statistical Analysis**

### **Hypothesis 1a, 1b, and 1c**

A multiple regression equation was calculated, with negative perceptions of evolutionary psychology as the outcome variable and degree of feminist identity as the predictor variables. The hypothesis, that degree of feminist identity will statistically significantly predict perceptions of evolutionary psychology, was tested at a .05 level of significance. Specific predictions were: the Passive Acceptance subscale of the FIDS and negative perceptions of evolutionary psychology will be negatively correlated; the Embeddedness-Emanation subscale of the FIDS and negative perceptions of evolutionary psychology will be positively correlated; and the Active Commitment subscale of FIDS and negative perceptions toward evolutionary psychology will be positively correlated.

### **Hypothesis 2a, 2b, and 2c**

A multiple regression equation was calculated, with attitudes toward nature versus nurture as the outcome variable and degree of feminist identity as the predictor variables. The hypothesis, that degree of feminist identity will statistically significantly predict attitudes toward nature versus nurture, was tested at a .05 level of significance. Specific predictions were: the Passive Acceptance subscale of FIDS and acceptance of nurture will be negatively correlated; the Embeddedness-Emanation subscale of FIDS and acceptance of nurture will be positively correlated; and the Active Commitment subscale of FIDS and acceptance nurture will be positively correlated.

### **Hypothesis 3a, 3b, and 3c**

A multiple regression equation was calculated, with mistrust of science as the outcome variable and degree of feminist identity as the predictor variables. The hypothesis, that degree of feminist identity will statistically significantly predict mistrust of science, will be tested at a .05 level of significance. Specific predictions were: The Passive Acceptance subscale of FIDS and mistrust in science will be negatively correlated; the Embeddedness-Emanation subscale of FIDS and mistrust in science will be positively correlated; and the Active Commitment subscale of FIDS and mistrust in science will be positively correlated.

### **Hypothesis 4a, 4b, and 4c**

A multiple regression equation was calculated, with attitudes toward the application of evolutionary psychology as the outcome variable and degree of feminist identity as the predictor variable. The hypothesis, that degree of feminist identity will statistically significantly predict beliefs about examining sex differences, was tested at a .05 level of significance. Specific predictions were: The Passive Acceptance subscale of FIDS and negative beliefs about examining sex differences will be negatively correlated; the Embeddedness-Emanation subscale of FIDS and negative beliefs about examining sex differences will be positively correlated; and the Active Commitment subscale of FIDS and negative beliefs about examining sex differences will be positively correlated.

### **Hypothesis 5a, 5b, and 5c**

A multiple regression equation was calculated, with negative assumptions about adaptationists as the outcome variable and degree of feminist identity as the predictor

variables. The hypothesis, that degree of feminist identity will statistically significantly predict negative assumptions about adaptationists, was tested at a .05 level of significance. Specific predictions were: The Passive Acceptance subscale of FIDS and negative assumptions about adaptationists will be negatively correlated; the Embeddedness-Emanation subscale of FIDS and negative assumptions about adaptationists will be positively correlated; and the Active Commitment subscale of FIDS and negative assumptions about adaptationists will be positively correlated.

#### **Hypothesis 6a, 6b, and 6c**

A multiple regression equation was calculated, with perceptions of body-brain dualism as the outcome variable and degree of feminist identity as the predictor variable. The hypothesis, that degree of feminist identity will statistically significantly predict perceptions of body-brain dualism, was tested at .05 level of significance. Specific predictions were: The Passive Acceptance subscale of FIDS and acceptance of body-brain dualism will be negatively correlated; the Embeddedness-Emanation subscale of FIDS and acceptance of body-brain dualism will be positively correlated; and the Active Commitment subscale of FIDS and acceptance of body brain dualism will be positively correlated.

## CHAPTER IV

### RESULTS

One hundred and fifteen surveys were initiated by participants through Psychdata.com. Twenty-seven of the 115 surveys remained only partially completed by participants and were consequently considered unusable by the investigator. Eighty-eight surveys were utilized in the final data analysis. All 88 participants identified as female psychologists and 87 participants identified as women, while one identified as a man. The participant identifying as a man in terms of gender, but female in terms of sex, was included in the analysis because the participant completed the entire survey, including all questions about feminist identity geared toward women. The participants represented the following ethnicities: Lithuanian (n=1); Korean (n=1); Jewish (n=4); Hispanic (n=2); Black (n=2); Mexican (n=2); and White (n=76).

Seventy-three participants reported identifying as clinical psychologists, one participant as a school psychologist, nine participants as counseling psychologists, one participant as an experimental psychologist, and four participants selected "other." The participants who selected "other" reported identifying with clinical neuropsychology (n = 1), family psychology (n = 1), and developmental psychology (n = 2). Participant age ranged between 27 and 79 years. Seventy-six participants reported identifying as heterosexual, six identified as lesbian, four identified as bi-sexual, one identified as queer, and one participant did not answer. Fifty-two participants reported being married,

7 divorced, 18 single, and 11 partnered. Forty-one participants identified as religious, while 42 participants identified as non-religious. Participants primarily identified as politically liberal (n=47), but there was a range in political identity: conservative (n=1), independent (n=12), moderate conservative (n=7), moderate liberal (n=19), and other (n=2). The year in which participants reported obtaining their Ph.D. ranged from 1963 to 2013.

Participants varied in the amount of exposure they had to evolutionary psychology theory. When asked to select all items applying to them in terms of exposure to evolutionary psychology: 25 participants reported having no previous exposure to evolutionary psychology theory; 40 participants reported being exposed to the theory in their graduate coursework; 18 participants reported reading books on the topic of evolutionary psychology; 11 participants reported reading five or fewer peer reviewed articles on the topic of evolutionary psychology; 11 participants reported reading six or more peer reviewed articles on the topic of evolutionary psychology; two participants reported conducting research in the area of evolutionary psychology; and zero participants reported attending a conference on the topic of evolutionary psychology or being an expert in the field of evolutionary psychology. Nine participants selected the open-ended (other) option and reported being exposed to the topic in their undergraduate coursework (n = 3); hearing colleagues discuss issues related to evolutionary psychology (n = 1); introducing evolutionary psychology concepts in their undergraduate courses (n = 2); or including evolutionary psychology concepts in textbooks they have authored (n = 2). One participant stated that she believed it was imperative for all psychologists to

know about evolutionary psychology theory in order to understand human emotion and behavior. See Table 1 for more detailed information on participants' demographics.

Table 1

*Participant Demographic Information*

<u>Characteristics</u>	<u>Participants (n)</u>
<u>Age</u> ( <i>Range</i> = 27 – 79)	
27 – 35	20
36 – 45	20
46 – 55	19
56 – 65	21
66 – 79	8
<u>Sex</u>	
Male	0
Female	88
<u>Gender</u>	
Man	1
Woman	87
<u>Ethnicity</u>	
White	76
Black	2
Hispanic	2
Mexican	2
Jewish	4
Korean	1
Lithuanian	1
<u>Sexual Orientation</u>	
Heterosexual	76
Lesbian	6
Bisexual	4
Queer	1
No response	1
(Continued)	

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<u>Relationship Status</u>	
Married	52
Divorced	7
Single	18
Partnered	11
 <u>Political Identity</u>	
Conservative	1
Moderate Conservative	7
Liberal	47
Moderate Liberal	19
Independent	12
Other	2
 <u>Religious Identity</u>	
Religious	41
Non-Religious	47
 <u>Year Obtained PhD (<i>Range = 1963-2013</i>)</u>	
1963 – 1975	6
1976 – 1985	15
1986 – 1995	8
1996 – 2005	28
2006 – 2013	31
 <u>APA Division of Psychology</u>	
Clinical	73
School	1
Counseling	9
Experimental	1
Clinical Neuropsychology	1
Family	1
Developmental	2

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(Continued)

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Level of Exposure to Evolutionary Psychology

None:	25
Covered in graduate coursework:	40
Read books on the topic:	18
Read 5 peer-reviewed articles or less on the topic:	11
Read 6 peer-reviewed articles or more on the topic:	11
Conducted research on the topic:	2
Have attended a conference on the topic:	0
Considered an expert in the field:	0
Learned in undergraduate coursework	3
Heard colleagues discuss the topic	1
Taught the topic in undergraduate courses	2
Included concepts in textbooks participant authored	2
Believed all psychologists must know topic	1

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*Note.* (n=88). In the current study, participants' age, sex, gender, ethnicity, sexual orientation, relationship status, political identity, religious identity, year obtained Ph.D., or level of exposure to evolutionary psychology were not included in hypotheses or statistical analyses.

**Hypothesis 1a, 1b, and 1c**

The first set of hypotheses stated that degree of feminist identity would statistically significantly predict negative perceptions of evolutionary psychology. The specific predictions were: the Passive Acceptance subscale of the FIDS (referred to as FIDS 1) and negative perceptions of evolutionary psychology would be negatively correlated; the Embeddedness-Emanation subscale of the FIDS (referred to as FIDS 3) and negative perceptions of evolutionary psychology would be positively correlated; and the Active Commitment subscale of FIDS (referred to as FIDS 5) and negative perceptions toward evolutionary psychology would be positively correlated. A multiple regression was conducted to explore the relationship between feminist identity and negative perceptions of evolutionary psychology as evidenced by participants' total



scores on the attitudes toward evolutionary psychology survey. Results from the analysis indicated partial support for Hypothesis Set 1. FIDS 5 was the strongest predictor and the only statistically significant predictor for negative perceptions of evolutionary psychology. FIDS 1 and FIDS 3 also predicted in the direction as hypothesized, but were not statistically significant. See Table 2 for results.

Table 2

*Hypothesis Set 1: Feminist Identity and Attitudes toward Evolutionary Psychology*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	29.89	13.09		.01
FIDS 1	-.92	3.05	-.04	.5638
FIDS 3	2.24	1.73	.16	.10
FIDS 5	4.20	2.19	.27*	.03

*Note.*  $R^2 = .17$ , *Adjusted R*<sup>2</sup> = .14, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment

### Reliability Analyses

A Cronbach's Alpha reliability analysis was conducted on the attitudes toward evolutionary psychology survey. Results from the analysis indicated moderate to high reliability based on a Cronbach's  $\alpha = .83$ . However, upon further analysis of Item-Total Statistics, items 47, 53, 42, and 43 were omitted based on their lack of contribution to reliability of the attitudes toward evolutionary psychology survey. Another Cronbach's Alpha reliability analysis was conducted on the attitudes toward evolutionary psychology survey after the four items were deleted which generated a higher Cronbach's  $\alpha = .89$ .

Reliability analyses were also conducted on the Feminist Identity Development Subscales. Results indicated that the Active Commitment subscale (FIDS 5) and the Embeddedness-Emanation subscale (FIDS 3) had moderate to high reliability. FIDS 5 Cronbach's  $\alpha = .81$  and FIDS 3 Cronbach's  $\alpha = .82$ . However, the Passive Acceptance subscale (FIDS 1) had relatively lower reliability, Cronbach's  $\alpha = .69$ .

### **Continued Analysis of Hypothesis 1a, 1b, and 1c**

A second multiple regression was conducted to examine the first set of hypotheses after adjusting the attitudes toward evolutionary psychology survey, based on the reliability results and subsequent omission of items 47, 53, 42, and 43. The second analysis of Hypothesis Set 1 generated similar results as the first analysis. Results for the revised attitudes toward evolutionary psychology survey multiple regression revealed a slightly stronger model and continued to demonstrate FIDS 5 as the strongest predictor, and only statistically significant predictor, of negative views of evolutionary psychology. See Table 3 for results.

Table 3

*Hypothesis Set 1: Feminist Identity and Attitudes toward Evolutionary Psychology (EP) using Revised EP Scale*

Model	<i>B</i>	<i>SE B</i>	<i>B</i>	Sig.
Constant	18.83	12.03		.06
FIDS 1	-1.72	2.81	-.07	.27
FIDS 3	2.48	1.59	.19	.06
FIDS 5	3.90	2.01	.26*	.03

*Note.*  $R^2 = .20$ , *Adjusted R*<sup>2</sup> = .17, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment

### **Hypothesis 2a, 2b, and 2c**

The second set of hypotheses stated that degree of feminist identity would statistically significantly predict attitudes toward nature versus nurture as explanations for human behavior. The specific predictions were: the Passive Acceptance subscale of FIDS and acceptance of nurture explanations would be negatively correlated; the Embeddedness-Emanation subscale of FIDS and acceptance of nurture explanations would be positively correlated; and the Active Commitment subscale of FIDS and acceptance of nurture explanations would be positively correlated.

A multiple regression was conducted to test Hypothesis Set 2 using participants' scores on the FIDS subscales as predictor variables. A subset of the Attitudes Toward Evolutionary Psychology Survey items, comprised of items 45 and 50 (reverse scored),  $\alpha = .29$ , was used to determine participants score on the attitudes toward nature versus nurture outcome variable. The multiple regression showed FIDS 5 was the strongest predictor and statistically significantly predicts acceptance of nurture explanations of human behavior versus nature explanations. Hypothesis Set 2 was partially supported, as FIDS 1 and FIDS 3 were not shown to be statistically significant predictors of nature versus nurture explanations for human behavior. See Table 4 for results.

Table 4

*Hypothesis Set 2: Feminist Identity and Attitudes toward Nature vs. Nurture*

Model	<i>B</i>	<i>SE B</i>	<i>B</i>	Sig.
Constant	4.25	2.20		.02
FIDS 1	-.57	.51	-.14	.14
FIDS 3	-.01	.29	-.01	.48
FIDS 5	.75	.37	.29*	.02

*Note.*  $R^2 = .14$ , *Adjusted R*<sup>2</sup> = .11, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

**Hypothesis 3a, 3b, and 3c**

The third set of hypotheses stated that degree of feminist identity would statistically significantly predict mistrust of science. The specific predictions were: The Passive Acceptance subscale of FIDS and mistrust in science would be negatively correlated; the Embeddedness-Emanation subscale of FIDS and mistrust in science would be positively correlated; and the Active Commitment subscale of FIDS and mistrust in science would be positively correlated.

A multiple regression was conducted to test Hypothesis Set 3 using participants' scores on the FIDS subscales as predictor variables. A subset of the Attitudes Toward Evolutionary Psychology Survey items, comprised of items 41, 46, 48, and 54,  $\alpha = .62$ , was used to determine participants' scores on the mistrust of science outcome variable. The multiple regression showed that Hypothesis Set 3 was partially supported, FIDS 5

was demonstrated to be the strongest and only statistically significant predictor for mistrust of science. See Table 5 for results.

Table 5

*Hypothesis Set 3: Feminist Identity and Mistrust of Science*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	2.97	3.69		.21
FIDS 1	-.55	.86	-.07	.26
FIDS 3	.72	.49	.17	.07
FIDS 5	1.67	.62	.35*	.00

*Note.*  $R^2 = .27$ , *Adjusted R*<sup>2</sup> = .24, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

**Hypothesis 4a, 4b, and 4c**

The fourth set of hypotheses stated that degree of feminist identity would statistically significantly predict beliefs about examining sex differences. The specific predictions were: The Passive Acceptance subscale of FIDS and negative beliefs about examining sex differences would be negatively correlated; the Embeddedness-Emanation subscale of FIDS and negative beliefs about examining sex differences would be positively correlated; and the Active Commitment subscale of FIDS and negative beliefs about examining sex differences would be positively correlated.

A multiple regression was conducted to test Hypothesis Set 4 using participants' scores on the FIDS subscales as predictor variables. A subset of the Attitudes Toward Evolutionary Psychology Survey items, comprised of items 55, 57 (reverse scored), and

59 (reverse scored),  $\alpha = .40$ , was used to determine participants' scores on the beliefs about examining sex differences outcome variable. The multiple regression conducted on Hypothesis Set 4 showed a weak relationship between predictors and the outcome variable. Hypothesis Set 4 was rejected. See Table 6 for results.

Table 6

*Hypothesis Set 4: Feminist Identity and Beliefs about Sex Differences*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	7.18	2.80		.00
FIDS 1	-.49	.66	-.10	.23
FIDS 3	.49	.37	.17	.09
FIDS 5	-.07	.47	.02	.44

*Note.*  $R^2 = .05$ , *Adjusted R*<sup>2</sup> = .01, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

### **Hypothesis 5a, 5b, and 5c**

The fifth set of hypotheses stated that degree of feminist identity would statistically significantly predict negative assumptions about adaptationists. The specific predictions were: The Passive Acceptance subscale of FIDS and negative assumptions about adaptationists would be negatively correlated; the Embeddedness-Emanation subscale of FIDS and negative assumptions about adaptationists would be positively correlated; and the Active Commitment subscale of FIDS and negative assumptions about adaptationists would be positively correlated.

A multiple regression was conducted to test Hypothesis Set 5 using participants' scores on the FIDS subscales as predictor variables. A subset of the Attitudes Toward Evolutionary Psychology Survey items, comprised of items 44, 49, 52, 56, and 58,  $\alpha = .87$ , was used to determine participants' scores on the negative assumptions about adaptationists outcome variable. The multiple regression showed a weak and insignificant relationship between predictors and outcome variable. Hypothesis Set 5 was rejected. See Table 7 for results.

Table 7

*Hypothesis Set 5: Feminist Identity and Assumptions about Adaptationists*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	4.58	5.30		.20
FIDS 1	-.42	1.24	-.04	.36
FIDS 3	.96	.70	.17	.08
FIDS 5	1.35	.89	.22	.07

*Note.*  $R^2 = .14$ , *Adjusted R*<sup>2</sup> = .11, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

### **Hypothesis 6a, 6b, and 6c**

The sixth set of hypotheses stated that degree of feminist identity would statistically significantly predict perceptions of body-brain dualism. The specific predictions were: The Passive Acceptance subscale of FIDS and acceptance of body-brain dualism would be negatively correlated; the Embeddedness-Emanation subscale of FIDS and acceptance of body-brain dualism would be positively correlated; and the

Active Commitment subscale of FIDS and acceptance of body brain dualism would be positively correlated.

A multiple regression was conducted to test Hypothesis Set 6 using participants' scores on the FIDS subscales as predictor variables. A subset of the Attitudes Toward Evolutionary Psychology Survey items, comprised of item 51, was used to determine participants' scores on endorsement of body-brain dualism outcome variable. The multiple regression showed partial support for Hypothesis Set 6, FIDS 3 statistically significantly predicted endorsement of body-brain dualism as hypothesized. See Table 8 for results.

Table 8

*Hypothesis Set 6: Feminist Identity and Endorsement of Body-brain Dualism*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	-.12	1.30		.47
FIDS 1	.30	.30	.12	.16
FIDS 3	.28	.17	.21*	.05
FIDS 5	.20	.22	.13	.18

*Note.*  $R^2 = .07$ , *Adjusted R*<sup>2</sup> = .04, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

### Exploratory Analyses

In order to further analyze the variance, after all hypotheses were tested, the researcher conducted a principal component analysis on the Attitudes toward Evolutionary Psychology Survey. The goal of the exploratory analyses was to extract as much of the variance in Attitudes



toward Evolutionary Psychology with the fewest number of components. The observed variables in the Attitudes toward Evolutionary Psychology Survey were reduced to a smaller set of important independent composite variables. After extracting the largest amount of variance with the fewest components, the researcher conducted three exploratory multiple regressions to further analyze the relationship between feminist identity and attitudes toward evolutionary psychology.

### **Principal Component Analysis of Attitudes toward Evolutionary Psychology Survey**

A principal component analysis (PCA) was conducted on the 15 items of the revised Attitudes toward Evolutionary Psychology Survey with oblique rotation (oblimin). A Keiser-Meyer-Olkin measure was conducted and verified the sampling adequacy, KMO = .86 (Field, 2009). An initial analysis was run to obtain eigenvalues for each component in the data. Three components had eigenvalues over Kaiser's criterion of 1 and in combination explained 39.84% of the variance (Field, 2009). The scree plot demonstrated inflections that justified retaining components one, two, and three. Given the convergence of Kaiser's criterion and the scree plot, three components were used in the final analyses. See Table 9 for a summary of the factor loadings after rotation. Based on the items that clustered on the various components, the following component representation is suggested: Component 1 = criticism that evolutionary psychologists support the status quo or traditional views in contrast to progressive views; Component 2 = biological reductionism critique or mistrust of biology; Component 3 = Support for the social construction of gender. See Table 9 for results.

Table 9

*Summary of Principal Component Analysis for the Attitudes toward Evolutionary Psychology Survey*

<u>Item</u>	<u>Component 1</u>	<u>Component 2</u>	<u>Component 3</u>
58. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between classes.	<b>0.89</b>	0.14	-0.13
52. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between the sexes.	<b>0.85</b>		
56. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between cultures.	<b>0.77</b>	0.10	0.20
48. Psychologists who believe human psychological processes are the result of evolution often practice pseudo-science and use improper methods to generate and test hypotheses.	0.68	0.30	
49. Psychologists who support the theory that human psychological processes are the result of evolution are contributing to gender discrimination.	0.59	0.19	0.36
55. If gender differences are based in genetics, that means they are impossible to change.	0.54	<b>-0.53</b>	0.23
59. I believe it is helpful to explore anatomical or physical differences between men and women. (reverse)	0.52	-0.11	
44. Psychologists who believe human psychological processes are the result of evolution have gone too far in simplifying patterns in human behavior to be completely biological.	0.11	<b>0.66</b>	0.21

(Continued)

<u>Item</u>	<u>Component 1</u>	<u>Component 2</u>	<u>Component 3</u>
54. The field of biology has a history of generating theories that have been prejudicial toward women	0.81	<b>0.62</b>	
46. Psychologists who believe human psychological processes are the result of evolution generate theories and results strongly influenced by a conservative political perspective.	0.20	0.51	0.32
50. Evolutionary theory and feminist theory are compatible. (reverse)		0.43	0.18
41. A social constructionist view of human nature is necessary for the granting of equal rights to women.	-0.17		<b>0.82</b>
51. I believe that our bodies are a product of evolution, but that our mind (brain) is not.	0.24	-0.41	<b>0.70</b>
57. I believe that using evolutionary psychology theory to explain gender differences will not result in a backlash to the progress made from the women's movement. (reverse)		0.22	<b>0.55</b>
45. I believe that differences in behavior patterns found between men and women can best be explained as a result of nurture instead of nature.	0.13	0.21	0.51
<i>Eigenvalues</i>	5.98	1.57	1.10
<i>% of variance</i>	39.84	10.46	7.33

*Note.* n = 88. Component One is comprised of items that represent the so-called status quo criticism, the belief that evolutionary psychologists support the status quo or traditional view in regard to culture/class/gender relations in contrast to progressive feminist views. Component Two is comprised of items that represent the biological reductionism critique or mistrust of the field of biology. Component Three is comprised of items that represent support for the social construction of gender.

**Component 1: Status quo.** An additional multiple regression was conducted to explore a possible relationship between feminist identity and assumptions that

evolutionary psychologists support the status quo using participants' scores on the FIDS subscales as predictor variables. Component 1,  $\alpha = .90$ , gleaned from the principal component analysis results of the Attitudes Toward Evolutionary Psychology Survey items, was used to determine participants' scores on the assumption that evolutionary psychologists support the status quo outcome variable. See Table 10 for results. The multiple regression showed FIDS 3 had the strongest relationship to assumptions that evolutionary psychologists support the status quo. FIDS 3 was the only predictor variable which showed a statistically significant relationship with the outcome variable.

Table 10

*Testing Component 1: Feminist Identity and Endorsement of Status Quo Criticism of Evolutionary Psychology*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	3.24	3.43		.17
FIDS 1	-.49	.80	-.08	.27
FIDS 3	.97	.45	.27*	.02
FIDS 5	.33	.57	.08	.29

*Note.*  $R^2 = .13$ , *Adjusted R*<sup>2</sup> = .10, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

**Component 2: Mistrust of biology.** An additional multiple regression was conducted to explore a possible relationship between feminist identity and mistrust of biology using participants' scores on the FIDS subscales as predictor variables. Component 2,  $\alpha = .32$ , gleaned from the principal component analysis results of the Attitudes Toward Evolutionary Psychology Survey items, was used to determine

participants' scores on the mistrust of biology variable. The multiple regression showed a weak and insignificant relationship between the predictor variables and mistrust of biology. See Table 11 for results.

Table 11

*Testing Component 2: Feminist Identity and Mistrust of the field of Biology*

Model	<i>B</i>	<i>SE B</i>	<i>B</i>	Sig.
Constant	7.30	2.96		.00
FIDS 1	-.26	.69	-.05	.35
FIDS 3	-.18	.39	-.06	.32
FIDS 5	.70	.50	.21	.31

*Note.*  $R^2 = .04$ , *Adjusted R*<sup>2</sup> = .01, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

**Component 3: Support for social construction of gender.** An additional multiple regression was conducted to explore a possible relationship between feminist identity and support for social construction of gender using participants' scores on the FIDS subscales as predictor variables. Component 3,  $\alpha = .58$ , gleaned from the principal component analysis results of the Attitudes Toward Evolutionary Psychology Survey items, was used to determine participants' scores on the support for social construction of gender variable. The multiple regression showed FIDS 3 and FIDS 5 had the strongest relationship to support for the social construction of gender. Both FIDS 3 and FIDS 5 were statistically significant and positive predictors of the outcome variable. See Table 12 for results.

Table 12

*Testing Component 3: Feminist Identity and Support for Social Construction of Gender*

Model	<i>B</i>	<i>SE B</i>	$\beta$	Sig.
Constant	.90	2.96		.38
FIDS 1	.29	.69	.05	.34
FIDS 3	.93	.39	.29*	.01
FIDS 5	.95	.49	.26*	.03

*Note.*  $R^2 = .21$ , *Adjusted R*<sup>2</sup> = .19, one-tailed. FIDS 1 = Feminist Identity Development Scale, Phase 1, Passive Acceptance. FIDS 3 = Feminist Identity Development Scale, Phase 3, Embeddedness-Emanation. FIDS 5 = Feminist Identity Development Scale, Phase 5, Active Commitment.

In summary, results showed that the more a psychologist endorsed beliefs associated with the highest level of feminist identity, as evidenced by their scores on the FIDS 5, the more likely they were to possess negative attitudes toward evolutionary psychology, accept nurture as explanations for human behavior patterns versus nature, and demonstrate a greater mistrust of science. Feminist identity did not impact a mistrust of biology, negative beliefs about examining sex differences, or negative assumptions about evolutionary psychologists. However, individuals reporting a high level of feminist identity in the third phase of development (embeddedness-emanation), as indicated by scores on the FIDS 3, were found to be more likely to endorse a belief in body-brain dualism and to support the status quo criticism of evolutionary psychology.

Results also revealed that individuals who identify with levels 3 or 5 of feminist identity, as evidenced by their scores on FIDS 3 and FIDS 5, were more likely to possess attitudes in support of social constructionist views of gender.

## CHAPTER V

### DISCUSSION

The primary goal of this study was to examine the relationship between feminist identity and attitudes toward evolutionary psychology. More specifically, three different levels of feminist identity, passive-acceptance, embeddedness-emanation, and active commitment, were examined in terms of predicting attitudes toward evolutionary psychology. Furthermore, various aspects of evolutionary psychology, including attitudes about nature versus nurture, mistrust of science, beliefs about examining sex differences, negative assumptions about adaptationists, and endorsement of body-brain dualism, were specifically targeted based on previous research. Support was found for the main research question suggesting that there is a significant relationship between feminist identity and attitudes toward evolutionary psychology. Results from the current study indicated that psychologists with a higher level of feminist identity were more likely to endorse negative attitudes or resistance to evolutionary psychology. Results also indicated that level of feminist identity did not impact psychologists' mistrust of biology, beliefs about examining sex differences, or assumptions about evolutionary psychologists. Principal component analysis also generated the following components or

themes, status quo criticism, mistrust of biology, and support for the social construction of gender, which were examined to determine whether feminist identity related to attitudes regarding specific aspects of evolutionary psychology versus the field of evolutionary psychology in general.

### **Active Commitment – Feminist Identity Phase 5**

Level of feminist identity was found to predict attitudes toward evolutionary psychology in several ways. In the current study, the Active Commitment phase of feminist identity was found to be the strongest predictor of negative attitudes toward evolutionary psychology in general. The fifth phase of feminist identity, based on Downing and Roush's (1985) model of feminist identity development and measured by the Feminist Identity Development Scale (Bargard & Hyde, 1991), is known as the Active Commitment phase in which individuals have successfully transformed their fully individualized feminist identity into behaviors intended to create social change that eliminates oppression and combats patriarchal ideology (Moradi & Subich, 2002). Along with predicting negative attitudes toward evolutionary psychology, high levels of the Active Commitment phase of feminist identity were also predictive of a greater willingness to accept environmental nurture explanations for human behavior patterns versus biological or nature explanations. High levels of the Active Commitment phase of feminist identity development were also predictive of mistrust in science and endorsement for the social construction of gender.

The present findings are consistent with previous documentation of academic feminists' fierce opposition to the increased influence of biology within psychology



(Campbell, 2012). In her 2012 paper exploring the interface of biology and feminism, Campbell detected three main strands of feminist criticism: concern about determinism (the brain conceptualized as unresponsive to the environment); political agenda (demonstrating sex differences inhibits the goal of gender equality); and support for the social construction of gender. As other feminists have argued (Eagly & Wood, 2011), mirrored in the results of the current study, the disagreement with evolutionary psychology is based chiefly on the feminist perception of evolutionary psychology's lack of potential to change patriarchy to gender-equality.

Other negative views of evolutionary psychology stemming from some feminists have derived from the lack of distinction between politics and research (Campbell, 2012). For many feminists (Cassidy, 2007), research questions, methods, and interpretations are simultaneously political acts. Cassidy (2007) asserted that evolutionary psychology conceptualizations are inherently political, reflecting the values of those in power. Evolutionary psychology researchers have also been accused of promoting right-wing political agendas (Kember, 2011; Rose & Rose, 2001). While the current study did not analyze political variables directly, psychologists with the highest level of feminist identity endorsed a greater mistrust of science than their less feminist colleagues. Given the common feminist perspective that the personal is political and also that research is inherently political, it makes sense that this study demonstrated feminist mistrust in the scientific method, which presents itself as seeking objective truth and could potentially perpetuate patriarchy under this assumption.

The current study also generated results supporting the hypothesis that an area of contention within evolutionary psychology for individuals identifying with the most advanced level of feminist identity development lies within the nature versus nurture debate. Based on the results of this study, individuals with high levels of feminist identity development possessed attitudes predicting the endorsement of the social construction of gender, which appears to be driving much of the feminist resistance to evolutionary psychology. Consistent with the current findings, Cassidy (2006) has argued that evolutionary psychologists seek to make objective, scientific truths about sex differences and then delegitimize criticisms (often political) that the evolutionary viewpoint is a sexist one. Likewise, Sayers (1982), nearly 30 years ago, related biology to fate when she explained that attributing sexual strategies to biology implies that they are fixed functions of relations between the sexes. Later, Condit (2008) accused feminism of being incompatible with a biological, static, and deterministic view of sex differences, which are more reflective of androcentric perspectives than of nature. Based on results from the current study, it appears as though some feminists have continued, as they have in the past (Campbell, 2012), to view the evolutionary psychology stance on sex differences as one that is entirely genetic, unresponsive to the environment, and unchangeable.

A highly charged example of this debate can be highlighted with the discussion theorizing the motivation for men raping women. While evolutionary psychologists have tended to support the theory that there may be a psychological mechanism shaped by adaptations to account for patterns associated with rape, their research has been accused

of subtly implying that male rapists should not be blamed for their behavior (Campbell, 2012). In contrast, the majority of feminists have conceptualized rape as a powerful way for men to control women by keeping them in a state of fear (Brownmiller, 1975; Vandermassen, 2011). While some scholars have argued that the nature and nurture debate is a false dichotomy (i.e., Pinker, 2011), and that evolutionary psychology theory and the feminist power and control hypothesis of rape can coexist (Vandermassen, 2011), results from the current study indicate that many feminists may not be open to an integrative view.

Previous researchers have explored the commonly held criticism of evolutionary psychology regarding its scientific rigor (Tybur, Miller, & Gangestad, 2007). More specifically, critics have argued that improper research methods have been used by evolutionary psychologists, resulting in pseudo-science that generates support for their narrow Darwinian interpretations of human behavior (Tybur et al., 2007). Results from the current study demonstrated that feminist identity at the most advanced stage, Active Commitment, predicted endorsement of the mistrust of science criticism of the field of evolutionary psychology. While it could be that feminists are mistrusting of the scientific rigor in quantitative research and/or the assumed agenda of evolutionary psychologists, it may also be that this so-called mistrust of science, for feminists, is related to a collision of paradigms (e.g., positivist/empirical vs. social constructionist; Fisher, Garcia, & Chang, 2013) more so than a wariness of evolutionary researcher's motivations. Given the lack of support in the current study for the hypothesis that feminist identity would

predict negative assumptions about evolutionary psychologists, it appears as though the colliding paradigms explanation may be the most probable.

Findings in the current study demonstrating feminist alignment with the mistrust in scientific rigor critique of evolutionary psychology appear to be equated with previous feminist criticism of science in general. Academic feminists, traditionally social constructionist in their perspective (Campbell, 2012), have historically rejected the experimental method along with the concept of an objective truth (Burman, 1990; Kitzinger, 1990; Wilkinson, 1996) and argued that positivism/empirical approaches inappropriately burden validity concerns (Marshall, 1986). In addition to paradigm struggles with science, criticism of the scientific method on the part of feminists is also embedded in a gendered power struggle (Campbell, 2012). Many feminist theorists have rejected science as a male-dominated institution that reinforces men's control over women (Hannagan, 2008). Whether some feminists' mistrust of science is fueled by a gendered power struggle, fear of encroachment on social constructionism, or a rejection of a universal truth about human behavior, the current study demonstrated its presence and relevance in the debate between the fields.

### **Embeddedness-Emanation – Feminist Identity Phase 3**

The current study showed that Phase 3 of the FIDS (Bargard & Hyde, 1991), known as Embeddedness-Emanation, predicted nuanced aspects of attitudes toward evolutionary psychology. Individuals who identify with the Embeddedness-Emanation phase can score highly on either the embeddedness or emanation aspect of the phase (Moradi et al., 2002). In Embeddedness, individuals tend to adopt feminist doctrine

wholeheartedly, without a critical lens and thus surround themselves primarily with women. Whereas in Emanation, individuals move more toward an integration with society, selectively forming friendships with men, and becoming slightly more differentiated in their feminist identity (Moradi et al., 2002). Results from the present study indicated that identification with the Embeddedness-Emanation phase of feminist identity was predictive of endorsement for body-brain dualism and the status quo criticism of evolutionary psychology, which posits support for traditional, rather than feminist views of society.

Previous criticisms of evolutionary psychology have stemmed from the idea that the theory is genetically deterministic (Hagen, 2005) and does not consider context when explaining sex differences (Smiler, 2011). Evolutionary psychologists generally agree that, what critics typically mean by use of the term genetic determinism is that behavior patterns are genetically predetermined, not that adaptations in the brain are determined by genetics. While evolutionary psychology theorists have proposed that genes underlie adaptations, evolutionary psychology researchers have also proposed that modules in the brain have adapted with certain mechanisms to solve evolutionary problems in relation to the environment and that human behavior has been thought to be highly flexible (Hagen, 2005). Previous critics have worried that, when evolutionary psychologists hypothesize that social problems, such as rape, have had biologically adaptive purposes for ancestral humans, these theories have served to justify immoral and bad behavior, thus maintaining the status quo (Hagen, 2005).

Considering results from the current study, that individuals identified to be in the Embeddedness-Emanation level of feminist identity development possessed attitudes predicting a belief that the body is shaped by evolution but that the brain is not, the findings may illuminate a misunderstood area of evolutionary psychology theory on the part of some feminists. The often quoted Geher (2006) speaks to common misconceptions of evolutionary psychology by clearly articulating its basic tenant, “Evolutionary psychology is the radical notion that human behavior is part of the natural world.” He continues to describe the basic assumptions of evolutionary psychology as follows: “(a) that fundamental human psychological processes were shaped by evolutionary forces and that (b) such psychological processes and behavioral patterns can be best understood in light of such evolutionary forces, are as solid and reasonable as the theory of evolution itself” (Geher, 2006, p.197). Endorsement of the body-brain dualism belief on the part of some feminists, as demonstrated in the current study, combined with a significantly low level of exposure to evolutionary psychology theory (also revealed in the current study), may indicate that lack of awareness or selective endorsement (i.e., body, but not brain) of certain parts of evolutionary psychology are driving some feminists’ negative attitudes toward evolutionary psychology.

### **Passive Acceptance – Feminist Identity Phase 1**

The hypotheses in the current study that involved the first phase of Downing and Rousch’s (1985) feminist identity model were all rejected and remain unsupported. Individuals identifying in the Passive Acceptance phase of feminist identity tended to demonstrate minimization, denial, or ignorance of discrimination against women (Moradi

et al., 2002). Furthermore, individuals in this phase of feminist identity development were more likely to accept traditional gender roles and report believing that sex role stereotyping is helpful (Moradi et al., 2002). In the current study, psychologists who endorsed beliefs, such as women are doing just fine without an Equal Rights Amendment, men should be masculine and women should be feminine, women do not need equal status to men, and the women will probably feel most fulfilled as a wife and mother, did not (contrary to research predictions) report significantly more positive attitudes toward the field of evolutionary psychology.

Failure to find support for hypotheses related to the lowest level of feminist identity development and attitudes toward evolutionary psychology may be related to the lower than expected reliability of the Passive Acceptance measure. The psychometric reliability for the Passive Acceptance variable in the current study is lower than those reported by previous researchers (Moradi et al., 2002). Another possibility for failure to find support for hypotheses related to the Passive Acceptance phase of feminist identity is that women endorsing attitudes consistent with denial or minimization of discrimination toward women would also be indifferent, uninterested, or unaware about the scholarly debate between feminism and evolutionary psychology. As discussed in previous research exploring attitudes toward evolutionary psychology (Tybur, Miller, & Gangestad, 2007), while evolutionary psychologists and their critics may be keenly attuned to claims about the field involving pseudo-science, genetic determinism, and sexism, outsiders may understandably remain naïve to this debate. Likewise, it is not a far leap to expect individuals who are unaware about current discrimination toward

women to be indifferent toward debates about the potential for evolutionary psychology to influence discrimination.

### **Implications for Theory and Research**

Proponents of integrating evolutionary psychology and feminist theory have argued that feminism is missing an overarching and unifying framework, is in danger of losing its credibility, and is overlooking an opportunity to inform evolutionary thought (Vandermassen, 2004). Likewise, there are many ways that evolutionary psychology can benefit from being informed by a feminist perspective. Proponents of theoretical integration have argued that feminist critique of evolutionary psychology is warranted and completely understandable given the history and bias of the treatment of women in the form of biological determinism (Vandermassen, 2004). Along with possessing a need for a unifying framework, integration proponents have asserted that feminists are also in danger of leaving behind a highly valuable tool for understanding sexist behavior and patriarchy by dismissing an evolutionary approach (Fisher, Garcia, & Chang, 2013; Vandermassen, 2004). Proponents of theoretical integration have argued that this lack of scientific openness to other accounts of gender differences besides a social constructionist explanation can harm the feminist movement (Vandermassen, 2004). Proponents argue that in order to understand human behavior to the full extent possible, it is important to consider all types of information and ideas, even when deemed unpopular (Vandermassen, 2004).

Although women scientists have been actively influencing Darwinian thought for decades, there has been a recent resurgence of feminist ideas informing evolutionary



psychology perspectives (Fisher, Garcia, & Chang, 2013). One catalyst for shifting sexist thought in evolutionary science has been the increased presence of women in the field. Women scientists like Sarah Hrdy and Patricia Gowaty have been integral forces in paving the way for research focusing on the active role of females in sexual selection, considering evolved contingent sexual behavior on varying ecological constraints, and conceptualizing the prehomimid origins of patriarchy (Gowaty, 2013; Hrdy, 1996). Classical Darwinian theory categorized female mating strategies as primarily passive and Darwin appeared to be partially blinded by Victorian prejudice toward women (Hrdy, 1986), agreeing that “women (happily for them) are not much troubled by sexual feelings of any kind” (Acton, 1865, pp. 112-113). In contrast, Hrdy (1997) argued for the presence of an adaptive female counter-strategy to male efforts at controlling female reproductive timing, namely sexual assertiveness or female overtures for multiple males. It would appear that the evolutionary psychology field is listening, for not only do research trends seem to focus more equally on the role of women in sexual selection (e.g., Fisher, Garcia, & Chang, 2013), the Human Behavior and Evolution Society deemed Sarah Hrdy the recipient of the 2013 Lifetime Career Award ([www.hbes.com](http://www.hbes.com)).

Likewise, the recent publication, *Evolution's Empress* (Fisher, Garcia, & Chang, 2013), has demonstrated great strides in assimilating feminist thought into the evolutionary psychology paradigm. For example, in a chapter describing “disestablishment” of the biological clock, Pridmore-Brown (2013, pp. 423-438) directly utilized feminist insights on patriarchy and gender theory to discuss the impact of scientific advances in reproduction and cooperative breeding on biology (Hrdy, 2009;

Newson & Richerson, 2013). Environment, context, and biology are described in an interactive feedback loop (Pridmore-Brown, 2013). Also, in a critical evaluation of gendered expectation in workplace dress, Seaman (2013) used evolutionary theory to understand sex differences in dress along with potential motivations to control women's power through the legal system. Provocative research questions, interpretations, and methods, like those seen in *Evolution's Empress* (Fisher, Garcia, & Chang, 2013), glean hope and serve as potential models for further theoretical integration between the fields of feminism and evolutionary psychology. Book reviewers published in major journals from both fields, *Evolutionary Psychology* (Cobey & Mileva, 2013) and *Psychology of Women Quarterly* (Rubin, 2013) appear to agree. Offering further hope, Geher (2013), the former president of the North Eastern Evolutionary Psychology Society, brought together two seemingly incongruent ideas in a reference to his EvoS blog report about the start of the Feminist Evolutionary Psychology Society: "Feminism is the radical notion that women are people" (Kramarae & Treichler, 1996, p.183). "Evolutionary psychology is the radical notion that human behavior is part of the natural world" (Geher, 2013, p. 1). "There is no reason on earth to believe that these two 'radical' notions are irreconcilable" (Geher, 2013, p. 1). Feminist theorists who have chosen to reject evolutionary psychology appear to be at risk for simultaneously writing women out of the natural world.

Results from the current study generated support for the hypothesis that high levels of identification with a feminist perspective predict increased negative responses to evolutionary psychology theory. When considering the integration of these two theories,

results from the current study highlight several key areas to be considered in feminist theory development and future feminist research: support for environmental and contextual explanations of human behavior versus biological explanations; feminists' mistrust in science; support for a social construction of gender; body-brain dualism; and a worry that evolutionary psychologists support the status quo related to traditional views of race, class, and gender relations in society. Attempts to integrate feminist thought and evolutionary theory face the hurdle of addressing these conflictual areas related to legitimate concerns as well as misconceptions that may influence a paradigm shift. Future researchers are advised to focus on targeting highly nuanced aspects of the debate. For example, while this study focused on feminists' global attitudes toward the field of evolutionary psychology, future research could present evolutionarily informed conceptualizations of domain specific topics (i.e., motherhood, women's roles in culture, mating, female alliances, and female intrasexual competition (Fisher, Garcia, & Chang, 2013)) and explore the relationships between these evolutionarily informed domains and feminist perspectives. Future research aimed at targeting more specific aspects of feminist perspectives toward evolutionary psychology could be guided by the three themes that emerged in the current study based on analysis of responses to the Attitudes toward Evolutionary Psychology Survey, the status quo criticism, mistrust of biology, and support for the social construction of gender.

### **Implications for Practice and Training**

Despite the integration of evolutionary psychology into varied and diverse fields, including economics, anthropology, sociology, biology, and primatology (Cobey &

Mileva, 2013), the current study has demonstrated some of the difficulties with assimilation into feminist paradigms. Similarly, it appears as though evolutionary psychology perspectives have not been integrated into the counseling psychology field as well. A recent study exploring the question of whether applied psychology fields have integrated evolutionary psychology perspectives revealed the use of zero evolutionary psychology key terms published within major journals in the field of counseling psychology across a ten year span (Cowan & Hart, 2012). Despite the apparent lack of integration into counseling psychology, there has been evidence of the evolutionary perspective within the field of clinical psychology and it has guided research on clinical concerns related to anxiety (Bateson, Brilot, Nettle, & Daniel, 2011), shifts in female sociosexuality across the lifespan (Escasa-Dorne, Young, & Gray, 2013), cognitive deficits involved in psychopathic deviance (Ermer, Kahn, Salovey, & Kiehl, 2012), the influence of prenatal stress on psychopathology and stress response (Glover, Hill, & Jonathan, 2012), and the mismatch hyposthesis (i.e., modern psychopathology is caused by recent environmental factors for which our bodies have not been designed) (Nesse, 2005). Along with psychopathology, clinical perspectives informed by evolutionary psychology on sex and couples therapy have begun to emerge (Brandon, 2010).

While understanding the evolutionary roots of behavior may give feminist psychologists more depth in their conceptual understanding and clinical practice, they may still be worried about biological determinism. Some psychologists may wonder if using an evolutionary perspective to inform conceptualizations of clients would enable unacceptable behavior. To illustrate, a feminist psychologist may wonder if endorsing

evolutionary perspectives would result in decreased accountability for men who rape women, though research has shown that exposure to evolutionary perspectives does not impact how seriously sex crimes are judged (Dar-Nimrod, Heine, Cheung, & Schaller, 2011). Evolutionary psychologists widely agree that humans are not destined to act according to drive states; that instead, the human brain has adapted modules that can manage competing drive states, allowing individuals to choose nonviolence, for example (Pinker, 2013).

Integration of an evolutionarily informed understanding of feminist theory may offer psychologists the opportunity to gain increased empathy and an expanded ability to convey the humanity of otherwise stigmatized urges, drives, and actions to their clients. Clients could gain the perspective that the presenting issue or behaviors that they wish to change have universal roots that may have been historically adaptive, but may not be serving them well in the present. This type of conceptualization may bring the possibility for reduction in shame on the path to change.

Integrating both feminist and evolutionary psychology perspectives into graduate training for counseling psychologists would likely lead to a more informed and rich understanding of the human condition. Similar to feminism's essential role in decreasing sexism, evolutionary perspectives are an equally indispensable component in understanding human psychology. In order to have a fully satisfying explanation of human psychology, assist therapy clients in making positive changes, and promote social justice, counseling psychologists in training need an integration of both feminist theory and evolutionary psychology in their training programs.

## **Limitations**

Several noteworthy limitations existed in the current study and should be considered when interpreting the results. Many applied psychologists seem to have had basic exposure to evolutionary psychology theory in graduate coursework, but are lacking an in-depth understanding of the major concepts of the theory. Previous researchers have noted that, while evolutionary psychologists have a working familiarity with the common criticisms and misconceptions of evolutionary psychology theory, academics outside of the field tend to be less familiar with evolutionary psychology theory's common critiques. Given that some of the participants may have been largely unaware of evolutionary psychology concepts and common criticisms, their self-reported perceptions may not have been fully informed.

Another limitation in the current study was the academic and theory driven language used in the survey. In order to reduce risk of participant fatigue and loss of time, the researcher attempted to use as much brevity as possible when wording questions. One of the consequences of maintaining a survey length that would minimize the time requirement for participants was that terms were used which may have jeopardized participants' ability to understand the survey items. General guidelines for survey construction have proposed that the quality of obtained responses depends on how well items are understood and required reading level is a major variable involved (Passmore, Dobbie, Parchman, & Tysinger, 2002). Survey construction guidelines have suggested that the higher the reading level necessary to complete the survey, the greater the likelihood of participant misunderstanding (Passmore et al., 2002). For example,

participants would need to know the term social constructionism in order to answer one of the questions accurately. The researcher attempted to address this limitation by recruiting only psychologists, as this sample would be the most likely to have been previously exposed to terms like social constructionism. Nonetheless, it is important to note that it is possible some participants may not have understood some of the terms. If a misunderstanding of terms occurred, participants' answers may not have truly reflected their attitudes. Furthermore, if the current study was the first time participants had been exposed to some of the common critiques of evolutionary psychology, they may not have had the time or the information needed to make a fully formed opinion. Future researchers should focus on generating scales that could be applicable to a larger audience with a broader range of exposure to evolutionary concepts.

The current study also involved the potential for participant reactivity toward various items on the surveys, which may have impacted participants' responses. Although purposeful, some of the survey items included loaded or biased language. For example, at least one item on the Attitudes toward Evolutionary Psychology Survey had the potential to generate reactivity in participants who were presented with the following statement, "Psychologists who believe human psychological processes are the result of evolution often practice pseudo-science and use improper methods to generate and test hypotheses." This item solicited participant endorsement of a potentially slanderous statement about a scientific discipline. Given that the sample population was psychologists, asking them to endorse harsh judgments without any contextual

information seems exceptionally counterintuitive to their training. Nonetheless, many participants were willing to endorse such items.

Preliminary reliability and validity testing were not conducted on the Attitudes toward Evolutionary Psychology Survey prior to its utilization in the current study. This lack of previous validity and reliability testing limits the ability for results to be generalized beyond the analysis for this study. Also, interpretations may be compromised because it is possible that the Attitudes toward Evolutionary Psychology may be measuring a different construct than was intended. Future research would benefit from testing convergent and divergent validity of the Attitudes toward Evolutionary Psychology Survey. Similarly, future research utilizing the Attitudes toward Evolutionary Psychology Survey could benefit from implementing a step-wise entry method regression instead of a forced entry method in order to gain a greater understanding of the predictor variables and their relationship with the outcome variable.

Further limitations of the current study were in the areas of recruitment and sampling. The sample population of the current study was psychologists, primarily clinical psychologists, and recruitment was limited to women. Thus, the research is not representative of men's attitudes or psychologists in general. Given that there is not a widely used feminist attitudes measure for men, future researchers should focus on building measures to assess men's feminist beliefs for inclusion in future projects.

Participants also self-selected to participate in the study, which may have influenced responses. For example, the word feminism was included in the title of the recruitment email. Although potential participants were informed that it was not



necessary to identify as feminist to participate in the study, the mere presence of the word feminism and the common sense implication that the researcher was interested in feminist ideas, may have attracted psychologists who were more interested in or familiar with feminist theory. Likewise, the same feminism word prime may have served to deter psychologists who possess distaste for feminist theory or general lack of interest in the topic. The potential for unintended bias in participant self-selection could have resulted in a less than representative sample, particularly of psychologists without feminist attitudes or interest. The low reliability of the passive acceptance subscale found in the current study may have been related to participant self-selection.

Future research exploring the relationship between feminism and evolutionary psychology may benefit from seeking alternate ways to tap into the construct of feminist identity along with finding other correlates related to attitudes toward evolutionary psychology. Contrary to research predictions, but consistent with results from the current study, it may be the case that female psychologists who accept traditional gender roles and report believing that sex role stereotyping is helpful do not possess significantly more positive views of evolutionary psychology than their more feminist counterparts. However, the potential for self-selection bias in the present study along with the passive acceptance subscale reliability issues leave room for doubt with these specific findings. Omitting potentially reactive language, especially during the recruitment phase, may increase the likelihood of obtaining a more inclusive sample that would be representative of a wider range of feminist identity amongst participants.

## **Conclusion**

Evolutionary psychology has increased its influence within the field of psychology. There have been mixed reactions to the growing acceptance of evolutionary psychology as a framework for understanding human behavior, and one of the primary movements to criticize evolutionary psychology has been feminism. The systematic, empirical examination of the feminist critique of evolutionary psychology has only recently begun. Several key components of the discord between feminism and evolutionary psychology have emerged in the research and are deserving of further study. As future attempts are made to integrate these two theories and navigate a collision of paradigms, feminist theory is at risk of falling behind during a paradigm shift and evolutionary psychology is at risk of remaining uninformed by meaningful feminist thought.

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## APPENDIX A

### Demographic Questionnaire



## **Demographic Questionnaire**

Please provide some basic demographic information by responding to the following items.

2) Age:

3) Sex:

Male\_\_\_\_\_

Female\_\_\_\_\_

Other \_\_\_\_\_

4) Gender:

Man\_\_\_\_\_

Woman\_\_\_\_\_

Other \_\_\_\_\_

5) Please indicate your ethnicity:\_\_\_\_\_

6) Please indicate your sexual orientation:\_\_\_\_\_

7) Please indicate your relationship status:\_\_\_\_\_

8) By my own definition, I consider myself to be politically:

Liberal   Moderate Liberal   Independent   Moderate Conservative   Conservative   Other

Other: \_\_\_\_\_

9) By my own definition, I consider myself to be religious.

True\_\_\_\_\_   False\_\_\_\_\_

**10)** I have obtained a doctoral degree in the field of psychology.

Yes\_\_\_\_\_ No\_\_\_\_\_

**11)** In what year did you obtain your doctoral degree? \_\_\_\_\_

**12)** Please indicate your employment status (check all that apply):

Clinician\_\_\_\_\_

Academic\_\_\_\_\_

Other:

**13)**

I am most closely associated with the following branch of psychology:

Clinical \_\_\_\_\_

School \_\_\_\_\_

Counseling \_\_\_\_\_

Experimental \_\_\_\_\_

Other (please specify) \_\_\_\_\_

**14)** Please describe the extent of exposure to evolutionary psychology theory you have had (check all that apply):

None \_\_\_\_\_

The theory was covered in some of my graduate coursework \_\_\_\_\_

I have read books with evolutionary psychology as the central focus \_\_\_\_\_

I have read 5 or less evolutionary psychology peer-reviewed articles \_\_\_\_\_

I have read 6 or more evolutionary psychology peer-reviewed articles \_\_\_\_\_

I conduct research related to evolutionary psychology \_\_\_\_\_

I have been to evolutionary psychology conferences \_\_\_\_\_

I am considered an expert within the field of evolutionary psychology \_\_\_\_\_

Other (please specify) \_\_\_\_\_

## APPENDIX B

### Feminist Identity Development Scale (FIDS)

# Feminist Identity Development Scale (FIDS)

## Instructions

On the following pages you will find a series of statements which people might use to describe themselves. Read each statement carefully and decide to what degree you think it presently describes you. Then select one of the five answers that best describes your present agreement or disagreement with the statement.

For example, if you strongly agree with the statement, "I like to return to the same vacation spot year after year," you would rate the statement with the number 5 in the space provided as shown below:

1	2	3	4	5
strongly	disagree	neither agree	agree	strongly
disagree		nor disagree		agree

5 I like to return to the same vacation spot year after year.

Remember to read each statement carefully and decide to what degree you think it describes you at the present time.

	1	2	3	4	5
strongly	strongly	disagree	neither agree	agree	
	disagree		nor disagree		agree

---

- \_\_\_\_\_ 1. I don't think there is any need for an Equal Rights Amendment; women are doing well. (1)
- \_\_\_\_\_ 2. Being a part of a women's community is important to me. (3)
- \_\_\_\_\_ 3. I want to work to improve women's status. (5)
- \_\_\_\_\_ 7. Especially now, I feel that the other women around me give me strength. (3)
- \_\_\_\_\_ 8. I am very committed to a cause that I believe contributes to a more fair and more just world for all people. (5)
- \_\_\_\_\_ 10. I share most of my social time with a few close women friends who share my feminist values. (3)
- \_\_\_\_\_ 11. I don't see much point in questioning the general expectation that men should be masculine and women should be feminine. (1)
- \_\_\_\_\_ 12. I am willing to make certain sacrifices in order to work toward making this society a non-sexist, peaceful place where all people have equal opportunities. (5)
- \_\_\_\_\_ 14. One thing I especially like about being a woman is that men will offer me their seat on a crowded bus or open doors for me because I am a woman. (1)
- \_\_\_\_\_ 16. My social life is mainly with women these days, but there are a few men I wouldn't mind having a non-sexual friendship with. (3)

- \_\_\_\_\_ 17. I've never really worried or thought about what it means to be a woman in this society. (1)
- \_\_\_\_\_ 19. I just feel like I need to be around women who share my point of view right now. (3)
- \_\_\_\_\_ 20. I care very deeply about men and women having equal opportunities in all respects. (5)
- \_\_\_\_\_ 22. I do not want to have equal status with men. (1)
- \_\_\_\_\_ 23. It is very satisfying to me to be able to use my talents and skills for my work in the women's movement. (5)
- \_\_\_\_\_ 24. If I were married and my husband was offered a job in another state, it would be my obligation as his spouse to move in support of his career. (1)
- \_\_\_\_\_ 28. I think that most women will feel most fulfilled by being a wife and mother. (1)
- \_\_\_\_\_ 33. I feel that I am a very powerful and effective spokesperson for the women's issues I am concerned with right now. (5)
- \_\_\_\_\_ 35. If I were to paint a picture or write a poem, it would probably be about women or women's issues. (3)



- \_\_\_\_\_ 36. I think that men and women had it better in the 1950s when married women were housewives and their husbands supported them. (1)
- \_\_\_\_\_ 40. Generally, I think that men are more interesting than women. (1)
- \_\_\_\_\_ 43. I think that rape is sometimes the woman's fault. (1)
- \_\_\_\_\_ 45. I am not sure what is meant by the phrase "women are oppressed under patriarchy." (1)
- \_\_\_\_\_ 46. I think it's lucky that women aren't expected to do some of the more dangerous jobs that men are expected to do, like construction work or race car driving. (1)
- \_\_\_\_\_ 47. I have a lifelong commitment to working for social, economic, and political equality for women. (5)
- \_\_\_\_\_ 48. Particularly now, I feel most comfortable with women who share my feminist point of view. (3)

NOTE: Numbers in parentheses at the end of items indicate the stage for that item. NS = No Stage. These items are not part of the final scales but were present in test development. They can be omitted if desired. The codes for the items included in the three subscales are as follows: (1) Passive Acceptance; (3) Embeddedness-Emanation; (5) Active Commitment.

## APPENDIX C

### Attitudes toward Evolutionary Psychology

**Attitudes toward Evolutionary Psychology Survey**

- |  | 1        | 2        | 3             | 4     | 5        |
|--|----------|----------|---------------|-------|----------|
|  | strongly | disagree | neither agree | agree | strongly |
|  | disagree |          | nor disagree  |       | agree    |
- \_\_\_\_\_1. A social constructionist view of human nature is necessary for the granting of equal rights to women.
- \_\_\_\_\_2. Psychologists who believe human psychological processes are the result of evolution do not also believe that human behavior patterns are unchangeable, determined by genetics. (reverse)
- \_\_\_\_\_3. Scientific methods are the only legitimate tools for making reliable inferences about the world. (reverse)
- \_\_\_\_\_4. Psychologists who believe human psychological processes are the result of evolution have gone too far in simplifying patterns in human behavior to be completely biological.
- \_\_\_\_\_5. I believe that differences in behavior patterns found between men and women can best be explained as a result of nurture instead of nature.
- \_\_\_\_\_6. Psychologists who believe human psychological processes are the result of evolution generate theories and results strongly influenced by a conservative political perspective.
- \_\_\_\_\_7. Scientific researchers often manipulate their results to support their ideas.

- \_\_\_\_\_8. Psychologists who believe human psychological processes are the result of evolution often practice pseudo-science and use improper methods to generate and test hypotheses.
- \_\_\_\_\_9. Psychologists who believe psychological processes are the result of evolution are contributing to gender discrimination.
- \_\_\_\_\_10. Evolutionary theory and feminist theory are compatible. (reverse)
- \_\_\_\_\_11. I believe that our bodies are a product of evolution, but that our mind (brain) is not.
- \_\_\_\_\_12. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between the sexes.
- \_\_\_\_\_13. I believe it is not helpful to explore psychological differences between men and women.
- \_\_\_\_\_14. The field of biology has a history of generating theories that have been prejudicial toward women.
- \_\_\_\_\_15. If gender differences are based in genetics, that means they are impossible to change.
- \_\_\_\_\_16. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between cultures.
- \_\_\_\_\_17. I believe that using evolutionary psychology theory to explain gender differences will not result in a backlash to the progress made from the women's movement. (reverse)

\_\_\_\_\_18. Psychologists who believe psychological processes are the result of evolution, support the status quo with regard to relations between classes.

\_\_\_\_\_19. I believe it is helpful to explore anatomical or physical differences between men and women. (reverse)

APPENDIX D  
Recruitment Letter

Greetings!

You are being invited to participate in a research study for Laura Cowan's dissertation at Texas Woman's University. The purpose of the current study is to examine the relationship between the fields of feminism and evolutionary psychology. The research is intended to provide clarity about women psychologists' perceptions of evolutionary psychology. Completion of the survey takes approximately 20 minutes. You are only permitted to participate once in the current study.

Eligibility requirements for participants include:

- (a) Must be at least 18 years old.
- (b) Must have completed doctorate within field of psychology.
- (c) The study is limited to women. It is NOT necessary that you identify as a feminist or as an evolutionary psychologist to participate in the study.

This study has been approved by the Texas Woman's University Institutional Review Board. Please click on the following link to view the informed consent document and to participate in the study:

<https://www.psychdata.com/s.asp?SID=152857>

Thank you! I appreciate your time.

APPENDIX E

Informed Consent Form



**TEXAS WOMAN'S UNIVERSITY**

**CONSENT TO PARTICIPATE IN RESEARCH**

Title: Feminist Perceptions of Evolutionary Psychology: An Empirical Study

Investigators: Laura Cowan, M.A. (512)762-8922    lcowan@twu.edu

Linda Rubin, Ph.D. (940)898-2314    lrubin@twu.edu

Explanation and Purpose of the Research

You are being asked to participate in a psychological research study at Texas Woman's University. The purpose of this research study is to explore the relationship between feminist identity and women psychologists' attitudes toward evolutionary psychology. In particular, you will be asked to answer questions on a survey about your identification with certain aspects of feminism and your beliefs about evolutionary psychology. Also, you will be asked to provide basic demographic information. You will provide this information in a single point in time and the entire survey should take approximately twenty minutes to complete. The aim of this study is to examine the relationship between the fields of feminism and evolutionary psychology. It is not necessary that you identify as a feminist or an evolutionary psychologist to participate in this study.

Research Procedures

In this study, you will be presented with various statements. After you read each statement you will indicate your degree of agreement with each on a survey. You will also be asked to provide information about your basic demographic information. Your

maximum total time commitment in this study is twenty minutes and most people take no longer than fifteen minutes to complete the survey.

#### Participation and Benefits

Your involvement in this research study is completely voluntary, and you may discontinue your participation in this study at any time without penalty. The only direct benefits of this study to you are that you are helping a graduate student collect data for her dissertation and are welcome to inquire about the results of the study. The researchers will benefit from this study by learning more about psychologists' beliefs about evolutionary psychology. If you wish to receive information about the results of this study, please request that information by email from the researcher listed at the top of this form.

#### Potential Risks

The following are risks related to your participation in this study and steps that the researcher will take to minimize those risks:

There is a risk of loss confidentiality. You will not use your name or any other identifying information. You may risk a loss of confidentiality if you choose to email the researcher to ask for results of the study. If you choose to email the researcher, then the researcher will immediately delete such emails after responding to them. Confidentiality will be protected to the extent that is allowed by law. There is a potential risk of loss of confidentiality in all email, downloading, and internet transactions.

There is a risk of loss of time. You will lose up to 20 minutes of your time by participating in this study. Your participation is completely voluntary, and you may terminate your participation in this study at any time without penalty.

There is a risk of fatigue and/or emotional discomfort. Participants may take a break or discontinue their participation in the study without any negative consequences. If you do feel distressed or experience emotional discomfort, please use the following information to seek support:

Online referrals for counseling services in your area:

American Psychological Association

Psychologist Locator Service

<http://locator.apa.org/>

There is a risk of loss of anonymity. You will complete the questionnaire packet online. There may or may not be other people in the room where you are completing the survey. If other people in the room recognize you, you will lose your anonymity. If this causes you emotional discomfort, you may terminate your participation or seek counseling from the above noted counseling service providers.

The researchers will try to prevent any problems that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Questions Regarding the Study

If you have any questions about the study, please contact the principle investigator at lcowan@twu.edu. If you have questions about your rights as a participant in the research or regarding how the study was conducted, feel free to contact the Texas Woman's University Office of Research and Sponsored Programs at 940-898-3378 or via email at IRB@twu.edu.

**I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this study and understand that I have the right to withdraw from the study at any time without in any way affecting my person. I hereby consent to participate in the study.**

**1)**

By clicking on the option "I agree", you will be consenting to participate in the study.

I agree \_\_\_\_

I DO NOT agree \_\_\_\_