2007

Neurobiology Meets Social Psychology: An Explanation of Feminists' Attitudes Toward Abuse

Christen D. Hazlett
University of North Florida

Neurobiology Meets Social Psychology: An Explanation of Feminists' Attitudes Toward Abuse

Christen D. Hazlett

Faculty Sponsors:

LouAnne B. Hawkins, RN, MA,
Coordinator, Undergraduate Research

Dr. Christopher Leone,
Professor of Psychology

After the second Great Awakening, which was a spreading of religious enthusiasm from 1800 to 1840, women became more politically active. Women worked toward social reform in churches and other charitable organizations. They taught in Sunday school and encouraged abolition and temperance. The majority of women at the time did not consider fighting for their rights to vote, own property, or work outside the home. Some women even thought that a "women's movement" was too radical and was socially inappropriate (Coclanis & Bruchey, 1999). One such woman, South Carolinian Louisa McCord, felt that women who demanded the right to vote shamed themselves and embarrassed women who did not demand the right to vote. McCord called those who were involved in the women's movement "petticoated despisers of their sex" (Coclanis & Bruchey, 1999). Many equated the women's rights movement with an abolition movement. They feared that granting women suffrage would be a step towards granting African-Americans suffrage (Coclanis & Bruchey, 1999).

Even while they faced such strong opposition and harsh criticism, women's rights activists fervently pressed toward the goal of women's suffrage. Among the leaders of this group of activists were Elizabeth Cady Stanton and Mary Wollstonecraft. Some individuals believe that Wollstonecraft might have been the founder of what is now known as liberal feminism or radical feminism. Wollstonecraft felt strongly that women's obsession with their looks and with romantic thoughts would eventually lead to the demise of society. Wollstonecraft believed that a male-dominated society was a direct result of the obsession that women had over their appearance. She called women's vanity "adornment and frivolity" (Coclanis & Bruchey, 1999). Wollstonecraft thought that women would lose influence and credibility in their communities and would become exploited by and dependent upon men as a result of their vanity (Coclanis & Bruchey, 1999). Wollstonecraft believed that relationships between men and women should be exclusively for friendship, entertainment, and intellectual purposes (Coclanis & Bruchey, 1999).

In addition to the feminist movement, many early feminists were instrumental in starting what has become the animal rights movement. Animal abuse in the late eighteenth and early nineteenth centuries was common and virtually unchecked. Even though the abuse of animals was technically illegal, judges usually excused without penalty those who were accused of animal abuse by citing loss of temper, economic pressure, and obedience to superiors as legitimate reasons for abusive behavior (Ferguson, 1998). Women such as Elizabeth Heyrick, Frances Power Cobbe, Sarah Trimmer, and Susanna Watts were not only vocal feminists but also protested vehemently against the abuse of animals that was so common in their era (Ferguson, 1998).

Elizabeth Heyrick did not identify herself as a feminist, but she held many of the core values of a feminist in her day, such as the belief in women's right to vote and have a voice in public issues (Ferguson, 1998). She was a very assertive woman who fought passionately for the cessation of bull baiting. Bull baiting was the bloody practice of

provoking a fight to the death between a dog and a bull. A rope was tied around the bull's horns and dogs were let loose. The dog would fight the bull until either the dog died or the bull became too weak to fight. It was at this point that the bull's owners slaughtered the bull. Heyrick was known for going door-to-door trying to persuade people to stop the barbaric act of bull baiting. She also wrote two pamphlets in 1809 that advocated the outlawing of bull baiting. Later, Heyrick wrote another pamphlet called "A Warning Recommended to the Serious Attention of all Christians and Lovers of Their Country," in which she argued that bull baiting was an indication of the end of morality in her country (Ferguson, 1998). Susanna Watts was a long-time friend of Elizabeth Heyrick, and the two went together door-to-door protesting bull baiting and asking people to sign petitions to end slavery (Ferguson, 1998). Susanna Watts was an Anglican author who also wrote stories and poems in protest of English society's practices of insect collecting, the use of hounds in hunting, as well as hare and fox hunting as sport (Ferguson, 1998).

Another feminist and animal rights activist was Frances Power Cobbe. She advocated against a male-dominated society by stating that this type of society had forced women into roles of slave-like servitude. She was also a vocal antivivisectionist, which meant that she strongly opposed the use of animals in scientific experimentation. She said, "When we behold a cultivated and gifted gentleman selecting freely for his life-work the daily mangling of dogs and cats, we are quite at a loss to qualify the grandeur of this voluntary martyrdom" (Ferguson, 1998). Another feminist and animal rights activist was Sarah Trimmer. In 1786, she wrote *Fabulous Histories: Designed for the Instruction of Children Respecting Their Treatment of Animals*. Nine more editions of this book have been published since 1811, and reprints were still being made through the nineteen hundreds (Ferguson, 1998). This book was a mythical story about a family of robins. It was a fantasy set in England during a time in which freedom and peace prevailed. The book was intended by Trimmer to be a gentle reminder for children regarding the proper treatment of animals and it advocated the humane treatment and preservation of wild and domestic animals (Ferguson, 1998).

The original purpose of the feminist movement was to gain civil rights for women, such as the right to vote, own property, and make one's own decisions. During the 1960s and 1970s, people viewed feminism and feminists relatively positively (Rickabaugh, 1995). Contemporary views of feminism have, however, changed. The backlash of the 1980s resulted in the "ugly feminist" stereotype (Faludi, 1991). Widespread cultural stereotypes of feminists developed because of conservative social critics such as Rush Limbaugh. Limbaugh's claim that, "Feminism was established so that unattractive women could have easier access to the mainstream of society" (1993, p.200) strengthened the "ugly feminist" stereotype. Feminists became stereotyped as angry radicals fighting for principles that are egoistic (Faludi, 1991). Consequently, people began to think of feminists as lesbians or man-hating women (Faludi, 1991). Feminists are typically stereotyped as lesbian, anti-male, anti-child, anti-traditional role individuals (Burn, 2000). Even the United States media portrays feminists as homosexuals against motherhood, men, and traditional gender and family roles (Burn, 2000).

Contemporary views of feminists as haters of men, unattractive, and highly aggressive (Kamen, 1991) may be a result of the terminology used to describe the feminist movement (Burn, Aboud, & Moyles, 2000). The wording used to describe feminists can affect the attitudes of people toward feminists. Opinions regarding the nature of feminism depend on whether the movement is described as "feminism" or is described as the "women's movement." Although many individuals identify with the feminists' agenda and values, they are hesitant to call themselves feminists, which may be due to a fear of being associated with an unpopular stereotype (e.g., Buschman &Lenart, 1996;

Cowan, Mestlin, & Masek, 1992; Renzetti, 1987; Williams & Wittig, 1997). Williams and Wittig (1997) discovered that stereotypes of feminists, particularly as lesbians or radicals, resulted in a rejection of the feminist label even among women who supported feminist ideals. Most young, single, heterosexual, college women are pursuing a mainstream, heterosexual lifestyle and may avoid the feminist label out of fear of the implications that the label may carry (Williams & Wittig, 1997).

Although stereotypes might not be true for all feminists, they are not completely without evidence. Lott asked the question, "Who wants the children?" (Lott, 1973). Many prominent spokeswomen promoting women's liberation saw no reason for having children and reportedly believed that the most ambitious, worthy, and fulfilling roles are reserved for men (Lott, 1973). According to these spokeswomen, motherhood steals women's opportunities for creativity and individuality (Lott, 1973). Consequently, vocal, radical feminists degraded the role of child rearing and considered it similar to doing household chores (Lott, 1973). Children became viewed as nuisances and hindrances to women wanting anything besides the life of a housewife (Lott, 1973). Lott (1973) also noted that many feminists speak clinically and unemotionally about children and call motherhood a "second-class existence" (Lott, 1973). Lott conceded that some positive views of feminists regarding motherhood can be found, but the most common view seems to be that motherhood is burdensome and lacking in creativity. The most positive feminist view of motherhood cited by Lott was that of Germaine Greer, who wished to have a child and leave him or her with an Italian farm family, only to visit the child periodically (Lott, 1973).

In all fairness to feminists, however, Lott predicted that feminists are not the only people to view child rearing as burdensome. She believed that society portrays motherhood as a drab, uninteresting, unchallenging job and that feminists are only reflecting that portrayal (Lott, 1973). Lott stated that the legalization of abortion and contraception support her assertions that society has devalued and disdained the role of motherhood. She also ventured to predict that tasks typically viewed as women's tasks, such as flower arranging, when performed by women are undervalued and disdained by society, but that if a man were to do these tasks they would be appreciated and praised by society (Lott, 1973).

If feminism is so unpopular, then why do some individuals still strongly identify themselves as feminists? Traumatic experiences are related to identification with feminism. People who go through traumatic experiences such as sexual harassment, for example, are more likely to identify themselves with feminism. Similarly, people who are abused as children are more likely to become radical feminists (Burn et al., 2000). These feminists are also less likely to desire children (Gerson, 1986). Childhood happiness, as judged by happy memories, attentiveness of parents, and having less demanding parents, is an indicator of who will desire children as an adult (Gerson, 1986). Individuals with happy childhood memories tend to desire children. Individuals with unhappy or traumatic memories tend not to desire children. Women whose fathers showed them affection when they were children tend to have a more intense desire for children than do women whose fathers showed them little affection when they were children (Gerson, 1986). Women with affectionate fathers are also less likely to grow up to be radical feminism supporters than are women with aloof fathers (Burn et al., 2000).

Consistent with previous research, Hawkins and Leone (unpublished data) noted that a history of severe child abuse is significantly correlated with feminism. Of a sample of one hundred and eleven female participants, 11% reported no history of child abuse, 31 % reported a history of mild child abuse, 49% reported a history of moderate child abuse, and 9% reported a history of severe child abuse. An analysis of variance was conducted to determine if the history of

severe abuse predicted radical feminist ideology. There was no statistically significant difference in mean scores on the Revised Attitudes Toward Women Scale for individuals with a history of no child abuse, a history of mild child abuse, and a history of moderate child abuse. There was, however, a statistically significant difference in mean scores on the Revised Attitudes Toward Women Scale for individuals with a history of severe child abuse and individuals with a history of no child abuse, mild child abuse, and moderate child abuse, $F(3,107)=2.92$, $p=.037$.

Why might traumatic events during childhood, such as child abuse, be related to strong identification with more radical feminist beliefs? One explanation may lie in the changes in morphology and physiology of the brain in individuals with a history of child abuse. These changes in the limbic system specifically may influence cognition, affect, and behaviors that are consistent with radical feminist ideology.

Consequences and Prevalence of Childhood Maltreatment

Twelve out of every one thousand children in the United States are victims of maltreatment annually. Eight thousand forty-two children are reported as having been abused or neglected each day (Children's Defense Fund, 1997), In other words, every year in America there are more than three million reported cases of child abuse and at least one third of these cases are validated (Teicher, 2002; U.S. Department of Health and Human Services, 2002). Approximately twelve thousand children die of abuse or neglect each year (U.S. Department of Health and Human Services, 2002).

Individuals with a reported history of childhood abuse have high incidences of pathology and emotional distress (see Brown & Finkelhor, 1986 for a review of the literature). Silverman, Reinherz, and Giaconia (1996) noted in a seventeen-year longitudinal study of three hundred seventy-five adolescents, approximately 11% of the participants reported having been physically or sexually abused. Of those individuals reporting abuse, approximately 80% met DSM-III-R criteria for at least one psychiatric disorder at age twenty-one. Abused children and adolescents are also at significant risk for psychological pathology including emotional as well as behavioral problems, psychiatric disorders, suicidal ideation, and suicidal attempts in later life than are nonabused children and adolescents (Silverman, Reinherz, & Giaconia, 1996).

Borderline personality disorder (BPD), post traumatic stress disorder (PTSD), and temporal lobe epilepsy (TLE) have also been linked to child abuse (Teicher, 2002). As late as the early 1990s, it was assumed by many mental health professionals that these mental and emotional problems were solely due to psychological reasons. Doctors treating patients with mental or emotional issues frequently subscribed to a “get over it” attitude to address the patients with these disorders. It is now suspected, however, that disorders such as borderline personality disorder (BPD), post traumatic stress disorder (PTSD), and temporal lobe epilepsy (TLE) stem from changes in morphology and physiology in the limbic system due to early childhood traumatic experiences, such as neglect, physical abuse, or sexual abuse (Teicher, 2002).

Neurobiological Consequences of Childhood Maltreatment

Teicher (2002) noted that early childhood trauma leads to physiological underdevelopment in some parts of the brain, which could eventually lead to psychological problems such as BPD, PTSD, or TLE-like symptoms. Specific structures in the brain appear to be at greater risk from early childhood trauma. The limbic system is a set of structures responsible for the behaviors necessary for survival including behaviors such as feeding, the so-called “fight or flight” response, and for drives to reproduce (Pitkahen, et al. 1997).

The limbic system is also responsible for the regulation of human emotion and memory. The limbic system is an area of the brain that

is composed of interconnected neural bodies and contains the hippocampus, the amygdala, and the corpus callosum. These parts are found below the cortex in the temporal lobe of the brain (Teicher, 2002). The disturbance of the limbic system's homeostasis caused by child abuse could be responsible for inducing constant fear-related responses in the limbic system. This disturbance of the limbic system could cause altered behavior and thought in individuals with a history of child abuse (Perry & Pollard, 1998). The increase in the concentration of stress hormones, such as cortisol, during the continuous traumatic events that occur during child abuse may cause over excitation of the limbic system (McEwen, 2003). The resulting damage to the limbic system during childhood developmental years could cause an array of disorders such as dissociative identity disorders, hypertrophied dendrites, obesity, type II Diabetes, hypertension, increased suicidal tendencies, and the alteration of the morphology and physiology of the structures of the limbic system (Hornstein, et al. 1996; McEwen, 2003). Alterations in morphology and physiology of the limbic structures could lead to altered interpretation of stimuli and alterations in behavioral responses to high-stress situations (McEwen, 2003).

One area of the limbic system that is greatly affected by child abuse is the amygdala. The amygdala is an almond-shaped structure found in the anterior temporal lobe of the brain. The amygdala is responsible for the formation of memories that are related to emotional experiences. In 2002, Teicher and his research team investigated whether child abuse causes an increase in electrochemical irritability of the amygdala due to the increase exposure to stress hormones. Teicher hypothesized that child abuse victims would experience Temporal Lobe Epilepsy-like symptoms because of harm done to the hippocampus and amygdala in response to the increased level of stress hormones released during a series of traumatic events, such as child abuse (Teicher, 2002). TLE interrupts the normal functioning of the brain cells' nuclei, causing patients to experience uncontrollable symptoms such as seizures, tingling, numbness of limbs, staring or twitching, flushing, nausea, hallucinations, or distortions of vision. In a study of 253 adult patients of a mental health clinic, TLE symptoms were much more common in patients who had experienced childhood abuse (including physical and/or sexual abuse) than in patients who had never experienced childhood abuse (Teicher, 2002).

The traumatic stimulus causes increased concentrations of stress hormones, which reach the amygdala. The amygdala then becomes electrically stimulated through a series of neurological pathways. These electrical stimuli then reach the amygdaloid nuclei, leading to activation of survival behaviors in the individual experiencing the traumatic situation (Pitkanen, et al., 1997). If too many of these severe traumatic responses occur during the developmental years of an individual, the size of the amygdala could be significantly reduced. The alteration in the morphology of the amygdala could lead to physiological alterations of the amygdala, which could eventually lead to depression, irritability, and hostility in the abuse victim (Teicher et al., 2002).

Another part of the limbic system that is significantly impacted by child abuse is the hippocampus. The hippocampus is found in the medial temporal lobes of the brain and is necessary for the formation and retrieval of verbal and emotional memories. Because the hippocampus develops slowly, it is possible that it is more susceptible to damage than other parts of the brain. Another reason for the sensitivity of the hippocampus is that it has a relatively large number of cortisol receptors, which means that it is very sensitive to the concentration of the stress hormone cortisol in the blood. Stress hormones can decrease the number of new granule cells produced in the hippocampus after birth. These stress hormones can kill or alter the morphology of the large neurons that are formed in the hippocampus. This could be the mechanism for the alteration of the hippocampus during child abuse (Teicher et al., 2002)

In a study performed by Bremner in 1999, verbal memory tests were given to a group of people with histories of child abuse and to a group of people with no histories of child abuse. Those individuals with histories of abuse scored significantly lower on the verbal memory tests than did individuals with no histories of abuse. In abused individuals the hippocampus, which is necessary for the retrieval of memories, was underdeveloped. This underdevelopment of the hippocampus likely accounted for the inability of abused individuals to score higher on the verbal memory tests (Bremner, 1999).

Alterations of the hippocampus may also result in altered perceptions of people or situations. For example, the hippocampus gives an individual the ability to compare present circumstances to past circumstances and decide if the present circumstance poses a threat. To a person with an altered hippocampus, it may be impossible for the new situation to be linked to the past situations and it is, therefore, impossible to decide whether the current situation is a threat. This inability to link past to present situations coupled with increased fight or flight response could lead to an overgeneralization of fear response.

In another study, Teicher used electroencephalograms (EEG) to mathematically depict the brain wave activity of certain parts of the brain in several people who were victims of child abuse. The EEGs of the victims of child abuse were compared to EEGs of a control group that had never experienced child abuse. There was abnormal brain wave activity in 54% of those who had been victims of child abuse, but there was abnormal brain wave activity in only 27% of those who had never been victims of child abuse (Teicher, 2002).

Further evidence of the morphological impact of child abuse on the hippocampus was noted in a study using magnetic resonance imaging (MRI) (Stein, 1997) MRI was performed on 21 adult females with a history of childhood sexual abuse. These females had significant decreases in the volume of the left hippocampus, but the volume of the right hippocampus was unaffected. The traumatic experiences of the participants led to an increase of stress hormones which in turn led to the underdevelopment of the left hippocampus in each female abuse victim (Teicher, 2002). Consistent with these findings, Driessen (2001) of Gilead Hospital in Bielefeld, Germany found a 16% reduction in the size of the hippocampus and an 8% reduction in the size of the amygdala in females who had borderline personality disorder (BPD) with a history of child abuse (Teicher, 2002).

The corpus callosum is another area in the brain that is affected by child abuse. Teicher (2002) noted that victims of child abuse possess right cortexes that are more developed than are left cortexes. This was true even though the child abuse victims were right handed and thus left hemisphere-dominant. Those participants who had histories of abuse possessed right hemispheres of normal size in relation to those participants who had no histories of abuse. Those participants who had histories of child abuse possessed left hemispheres that were significantly smaller than the left hemispheres of those participants who had no histories of child abuse (Teicher, 2002). Children with a history of child abuse used their left hemispheres to recall pleasant memories and used their right hemispheres to recall traumatic or unpleasant memories. This finding was interesting, because the control group of participants, which contained participants who had no history of child abuse, used both the right and left hemispheres to recall pleasant and unpleasant memories. This suggested to Teicher and his colleagues that the interaction that is normally seen between right and left hemispheres was significantly decreased in those who had histories of child abuse (Teicher, 2002). The smaller corpus callosum and poor integration between the left and right hemispheres of the brain may put individuals with a history of abuse at greater risk for abrupt shifts between left hemispheric dominated states and right hemispheric dominated states (Teicher et al., 2002).

Individuals experiencing polarized hemispheric dominance would be more likely to view family, friends, and acquaintances in a more positive fashion in one state and a more negative fashion in another state (Teicher, Ito, Glod, Schiffer, & Gelbard, 1994). This type of behavior is a hallmark for borderline personality disorder, which is correlated with histories of child abuse (Herman, Perry, & van der Kolk, 1989). The physical findings associated with child abuse may provide one explanation for the development of borderline personality disorder in individuals with a history of abuse.

Clearly society has come to view the resulting psychological consequences of child abuse – such as, posttraumatic stress disorder, dissociative disorders, borderline personality disorder – as maladaptive. Putnam and Trickett (1993) suggest that both prospective and retrospective studies support the premise that early stress interferes with normal brain development and leads to enduring psychological problems. The brain is developing at such an accelerated rate early in life that experiences during childhood have greater potential to disrupt homeostasis in numerous areas in the brain (Perry & Pollard, 1998). The result may be persistence of fear related neurophysiological patterns influencing cognition, affect, and behavior. Schwarz and Perry (1994) note that childhood violence can result in permanent consequences for brain structure and function as well as the human psyche. But are the changes in the brain that result from child abuse actually maladaptive or are they in fact adaptations to a hostile environment?

Ordeals early in life were routine during human ancestral development and the brain evolved to be influenced by experience. It may be more plausible, then, that exposure to early stress and resulting alterations to neural development are adaptive and prepare the adult who has endured child abuse to survive and reproduce in a perilous environment. The hypervigilance and dissociation associated with child abuse victimization may permit the child to endure, evade, and survive the abuse. Thus, the victim of child abuse may be more likely to survive into reproductive years and may even increase in sexual promiscuity as a result of abuse (Finkelhor, 1986). Both of these consequences of abuse are essential for evolutionary success.

McEwen (2003), however, argues that the resulting chemical imbalances in the brain and dysregulation of hormones affect the interpretation of stimuli and alter hormonal and behavioral responses to possibly stressful situations. The structural changes in the limbic system may characterize changes that take place throughout the brain. The chronic stress of child abuse and resulting over activation of stress hormones and neurotransmitters may cause dendrite debranching and hypertrophy, cell proliferation, and synaptic remodeling (McEwen, 2003). Chronic over activation of the stress response is associated with obesity, type II diabetes, hypertension, increased suicidal ideation and attempts, as well as degeneration of the hippocampus and other brain structures (McEwen, 2003). Clearly the pathology associated with these diseases is not conducive to survival and reproduction.

Children raised in the absence of the intense chronic stress associated with child abuse may be more likely to have healthier brain development and better brain hemisphere integration. As adults, individuals raised in a nurturing, safe environment may be more emotionally stable, less aggressive, more social, and more empathetic. Consequently, these individuals may be better able to develop healthier social relationships and to utilize their potential. In terms of survival and reproduction, relationships and self-efficacy may be as important as endurance. Clearly, contemporary researchers have provided compelling evidence that child abuse influences the morphology and physiology of the limbic system. The resulting cognitive, affective, and behavioral changes are consistent with the divergent beliefs, values, and reactions of radical feminists toward children and abuse of oppressed groups such as animals. Many

radical feminists have rejected the roles of motherhood and wives and have chosen to live lives without having children (Lott, 1973). In contrast to their attitudes toward children, radical feminists' have continued to champion animal rights (Buchey & Coclanis, 1999).

Severe child abuse is predictive of extreme feminist ideology. Child abuse is also associated with disturbances in the morphology and physiology of the limbic system. It is, therefore, plausible that radical feminists, because of their greater propensity for having been abused as a child, will have alterations in the limbic system. The alterations in the limbic system are associated with hypervigilance due to over activation of the amygdale, which may be expressed as over generalization of fear and concern for situations of abuse. Consequently, radical feminists may express greater concern over abuse than will traditional and moderate women. The reduction of the midsection of the corpus collasum and resulting lack of integration between the brain hemispheres may result in dissociation of previous experiences of abuse and current experiences of observed abuse. Consequently, radical feminists may be less able to differentiate the gravity of child abuse and animal abuse than will traditional and moderate women.

It is, therefore hypothesized that radical feminist participants with extreme scores on a measure of feminist ideology will express greater concern and willingness to intervene in cases of abuse in general than will traditional and moderate participants. It is further hypothesized that radical feminists' concern and willingness to intervene will be relatively equal in instances of animal abuse and child abuse. In other words participants with extreme scores on a measure of feminist ideology will express equal willingness to intervene in cases of animal abuse and in cases of child abuse.

Method

Participants

Seventy-eight female students enrolled in undergraduate courses at the University of North Florida were recruited to participate in a study entitled "Perceptions of Social Issues". The purpose of the study was to explore the effects of radical feminism on attitudes toward child abuse. Students were offered extra credit in their undergraduate courses in exchange for their participation. Alternative means of earning extra credit were also offered by students' professors in order to avoid coercion.

The majority of the participants were white women between the ages of 18 and 24 years who had never been married. Complete demographic information about the sample is provided in Table 1. Participation in the study was limited to females because women tend to be more vested in feminist consciousness (Henderson-King & Zhermer, 2003). All participants completed the study.

Table 1. Demographics.

Age		Race		Marital Status	
18 – 24	74.4%	White	70.5%	Single	83.3%
25 – 31	15.4%	Black	10.3%	Divorced	6.4%
32 – 38	5.1%	Hispanic/Latino	5.1%	Married once	6.4%
39 – 45	1.3%	Asian/Pacific Islander	9.0%	Remarried	3.8%
Over 45	3.8%	Other	5.1%	Widowed	0%

Before they were permitted to participate in the study, the experimenter informed participants of the purpose of the study and the possible risk of emotional distress from reading the scenarios. The experimenter informed them about their right to end their participation at any time without penalty and informed them that their answers to the questionnaires would be completely confidential and anonymous. Following this information session, participants were given the opportunity to ask questions. Informed consent was obtained in writing and collected prior to distribution of the questionnaires. Participants were treated in accordance with the American Psychological Association Ethical Principles and Code of Conduct (American Psychological Association, 2002)

Procedure

After completing the informed consent process, participants were randomly assigned to read one of two series of scenarios entitled *Perception of Social Issues Survey*: a series of scenarios in which a child is abused or a series of scenarios in which an animal is abused. To reduce plausible alternative explanations for differences in responses, descriptions of the events in the scenarios were identical with the exception of manipulating the target of the abuse. After reading each of the scenarios, the participants completed a measure of attitudes toward the specific cases of abuse. Participants then completed several individual difference measures including the *Liberal Feminist Attitude and Ideology Scale* (Morgan, 1996) and the *Neosexism Scale* (Tougas, Brown, Beaton, & Joly, 1995). Participants responded using a 5-point Likert scale. Responses options included *strongly disagree*, *disagree*, *undecided/uncertain*, *agree*, and *strongly agree*.

The *Perception of Social Issues Survey* is a measure designed specifically for this study to determine the extent to which participants would be willing to intervene in cases of abuse. In the first scenario either a child or a dog had sustained fractures to the front limbs that appeared to have been purposely inflicted. In the second scenario either a group of children or a group of chimpanzees had been enslaved. In the third scenario either a child or a dog had been found dead in a car after being left alone in the heat while the driver was at the beach. After reading each scenario, participants are asked to respond to eleven items indicating what they would be willing to do were they to have witnessed the event (e.g., "If I witnessed this incident, I would personally confront the individual who hurt the animal (child)."). Negatively worded items (e.g., "If I witnessed this incident, I would be reluctant to call the police.") are reverse scored so that higher scores indicate more favorable attitudes toward intervening in cases of abuse. After reverse scoring negatively worded items, scores on each item are summed to obtain a total score. High scores are indicative of maximal willingness to intervene in the case of abuse. Low scores are indicative of minimal willingness to intervene in the case of abuse. In this sample, a Cronbach's α of .81 was obtained for responses to the scenarios.

The *Liberal Feminist Attitude and Ideology Scale (LFAIS)* (Morgan, 1996) is an 11-item self-report instrument developed to measure individuals' feminist attitudes (e.g., "Women should have the same job opportunities as men."). Items that espouse less feminist attitudes (e.g. "Although women make good leaders, men make better leaders.") are reverse scored so that a higher score indicates more feminist attitudes. After reverse scoring negatively worded items, scores on each item are summed to obtain a total score. High scores are indicative of more feminist attitudes. Low scores are indicative of less feminist attitudes. Cronbach's α for the LFAIS has ranged from .94 with a college undergraduate sample to .83 with a small declared feminist sample (Morgan, 1996). Test-retest reliability for the LFAIS has been demonstrated (r = .83) with a small college sample after a four-week interval between testing (Morgan, 1996). In this sample, a

Cronbach's α of .81 was obtained for the LFAIS.

The *Neosexism Scale* (*NS*) (Tougas, Brown, Beaton, & Jolly, 1995) is an 11-item self-report instrument developed to measure attitudes toward feminist political policies (e.g. "In a fair employment system, men and women would be considered equal."). Items that espouse less feminist political attitudes (e.g. "Due to social pressure, firms frequently have to hire under-qualified women.") are reverse scored so that a higher score indicates more positive attitudes toward feminist political policies. After reverse scoring negatively worded items, scores on each item are summed to obtain a total score. High scores are indicative of more feminist political attitudes. Low scores are indicative of less feminist political attitudes. The *Neosexism Scale* has demonstrated internal consistency (Cronbach's α = .76) (Tougas et al., 1995). Test-retest reliability for the *Neosexism Scale* has also been demonstrated (r_{tt} = .84, p < .01) (Tougas et al., 1995). In this sample, a Cronbach's α of .71 was obtained for the NS.

Following the completion of these individual differences inventories, participants answered demographic questions including their sex, age, and ethnic background. All participants were given the chance to ask the experimenter any questions regarding the study or their participation. Participants were provided with written debriefing information including referral for emotional support should they feel distressed at a later date and contact information for the experimenter were they to experience any adverse effects.

Results

Preliminary Analysis

Descriptive Statistics. We performed a preliminary analysis of the data to obtain the mean, standard deviation, and range of scores for each of the measures (see Table 2). We evaluated scores on each of the measures for skew and kurtosis. Scores on the *Perception of Social Issues Survey* and the *Neosexism Scale* had skew and kurtosis coefficients near zero indicating that the scores on these scales did not violate assumptions of normality (Marcoulides & Hershberger, 1997). Scores on the *Liberal Feminist Attitude and Ideology Scale* were leptokurtic (peaked) and negatively skewed.

Table 2. Descriptive Statistics.

Measure	*M*	*SD*	Range
Liberal Feminist Attitude and Ideology Scale	40.77	5.78	20 – 50
Neosexism Scale	44.55	5.51	30 – 55
Perception of Social Issues Survey	39.26	7.83	18 – 54

Bivariate Analysis. We computed bivariate correlations for measures of attitudes toward feminism to evaluate construct validity of the *Neosexism Scale* and the *Liberal Feminist Attitude and Ideology Scale*. Higher scores on both the *Neosexism Scale* and the *Liberal Feminist Attitude and Ideology Scale* indicate more favorable attitudes toward feminist ideology. Scores on the *Neosexism Scale* were significantly correlated with scores on *the Liberal Feminist Attitude and Ideology Scale*, r = .72, p < .01. Because scores on the *Neosexism Scale* were significantly correlated with scores on a measure of another theoretically related construct, there was confidence that the

Neosexism Scale was a valid measure of attitudes toward feminist ideology. Because the *Neosexism Scale* is used more frequently than is the *Liberal Feminist Attitude and Ideology Scale* in previous research and because the *Liberal Feminist Attitude and Ideology Scale* scores were negatively skewed and leptokurtic, the *Neosexism Scale* was used for the main analysis.

Manipulation Check. The final item on the survey read, "The scenarios that you read in the first part of the study were". Responses included: *about animal abuse, about child abuse, about elder abuse, not about abuse*, and *I don't remember*. If the manipulation (child abuse scenarios versus animal abuse scenarios) was effective, participants were expected to accurately identify the type of scenarios that they had read. There was a statistically significant correlation between participants' reports of the types of scenarios they had read and the types of scenarios to which they had actually been assigned, $r=.95$, $p<.01$. Participants were able to consistently correctly identify the types of scenarios that they had read indicating that the manipulation was effective.

Main Analysis

The study was a 3 (traditional vs. moderate vs. radical feminist) x 2 (child abuse vs. animal abuse) factorial design. The independent variable was condition (child abuse versus animal abuse). The predictor variable was feminism as measured by the *Neosexism Scale*. Individuals scoring one or more standard deviations below the mean on the *Neosexism Scale* were categorized as traditional. Individuals scoring between one standard deviation below the mean and one standard deviation above the mean on the *Neosexism Scale* were categorized as moderate. Individuals scoring one or more standard deviations above the mean on the *Neosexism Scale* were categorized as radically feminist. The criterion variable was attitudes about abuse as measured by the *Perception of Social Issues Survey.* The *Perception of Social Issues Survey* was intended to determine individuals' attitudes toward specific forms of abuse by measuring their willingness to intervene in cases of abuse. Greater willingness to intervene was scored as more favorable attitudes or a concern for the abuse. An alpha level of .05 was used for all statistical analysis.

There was an interaction of level of feminism and condition predicting attitudes toward abuse (Figure 1.). In the child abuse condition, traditional, moderate, and radically feminist participants reported equally concerned attitudes toward abuse. In the animal abuse condition, radically feminist participants and moderate participants reported more concerned attitudes toward abuse than did traditional participants. In fact, radically feminist participants in the animal abuse condition ($M=46.89$, $SD=2.80$) and radically feminist participants in the child abuse condition ($M=45.43$, $SD=4.68$) reported nearly equally concerned attitudes toward abuse.

Radically feminist participants in the child abuse condition were expected to report concerned attitudes (a willingness to intervene) toward abuse equal to or less than the concerned attitudes reported by traditional participants and moderate participants in the child abuse condition. Feminist participants in the child abuse condition did in fact report equally concerned attitudes toward child abuse as did the traditional and moderate participants in the child abuse condition. There was no statistically significant difference between the means of attitudes toward abuse for traditional, moderate, or radically feminist individuals in the child abuse condition, $F(2,35)=1.48$, $p=.242$.

Radically feminist participants in the animal abuse condition were expected to report concerned attitudes (a willingness to intervene) toward abuse greater than the concerned attitudes reported by traditional participants and moderate participants in the animal abuse condition. Feminist participants in the child abuse condition did report more concerned attitudes toward abuse than did the traditional participants in the child abuse condition. Feminist participants in the child abuse condition did not, however, report

statistically significant more concerned attitudes toward abuse than did the moderate participants in the child abuse condition. There was a statistically significant difference between the means of attitudes toward abuse for individuals in the animal abuse condition dependent upon whether or not they were traditional, moderate, or radically feminist, $F(2,37)=7.73$, $p=.002$. There was a significant difference in attitudes toward abuse in the animal abuse condition between traditional individuals ($M=27.61$, $SD=8.05$) and radically feminist individuals ($M=46.89$, $SD=2.80$) as well as between traditional individuals and moderate individuals ($M=37.57$, $SD=7.41$). There was, however, no statistically significant difference in attitudes toward abuse between moderate individuals and radically feminist individuals in the animal abuse condition.

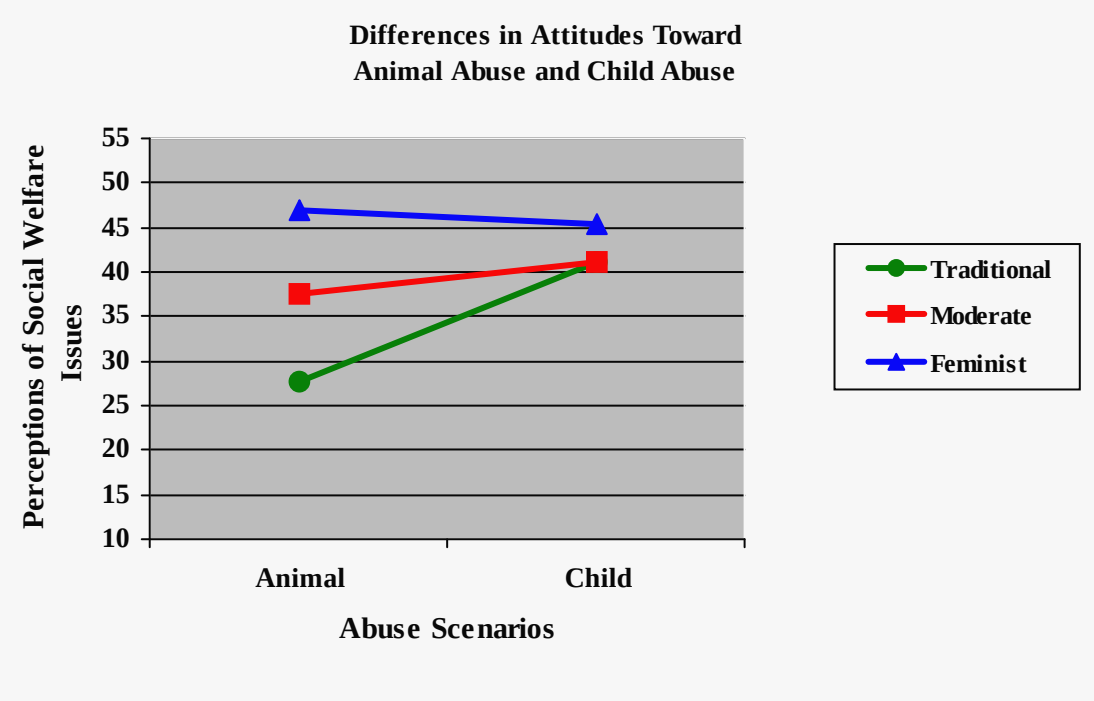

Figure 1. Differences in traditional, moderate, and feminist participants willingness to intervene in instances of child abuse and animal abuse.

There was also a statistically significant main effect for level of feminism on attitudes toward abuse, $F(2)=7.60$, $p=.001$ (Figure 2.). Feminist participants reported more concerned attitudes toward abuse ($M=45.87$, $SD=4.10$) than did moderate participants ($M=39.13$, $SD=7.17$) and traditional participants ($M=34.33$, $SD=7.22$). There was, however, no statistically significant difference in attitudes toward abuse for moderate participants and traditional participants.

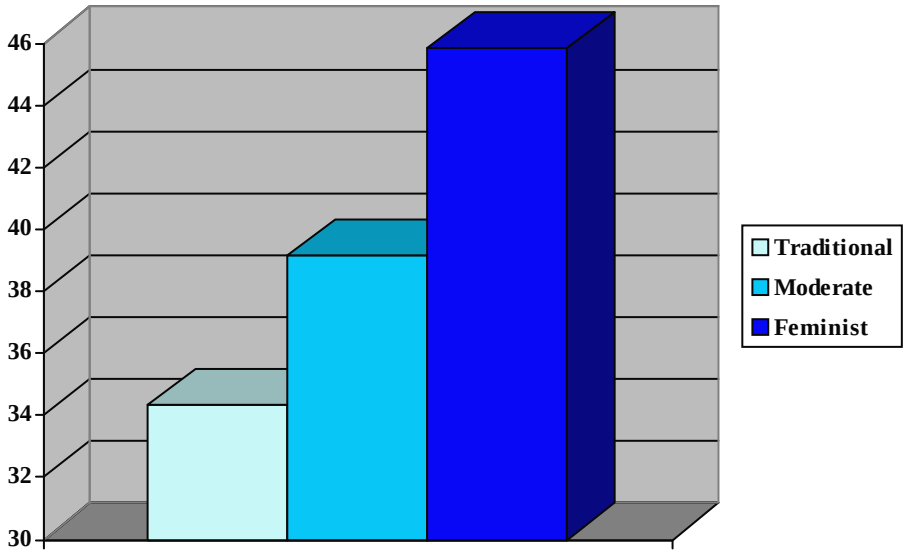

Figure 2. Traditional, moderate, and feminist participants' willingness to intervene in cases of abuse in general.

There was also a statistically significant main effect for type of scenario on attitudes toward abuse, $F(1)=5.90$, $p=.017$ (Figure 3.). Participants reported more concerned attitudes toward abuse for the child abuse scenarios ($M=41.87$, $SD=6.14$) than for the animal abuse scenarios ($M=36.78$, $SD=8.50$). Overall, participants reported that they were more willing to intervene in instances of child abuse than in instances of animal abuse.

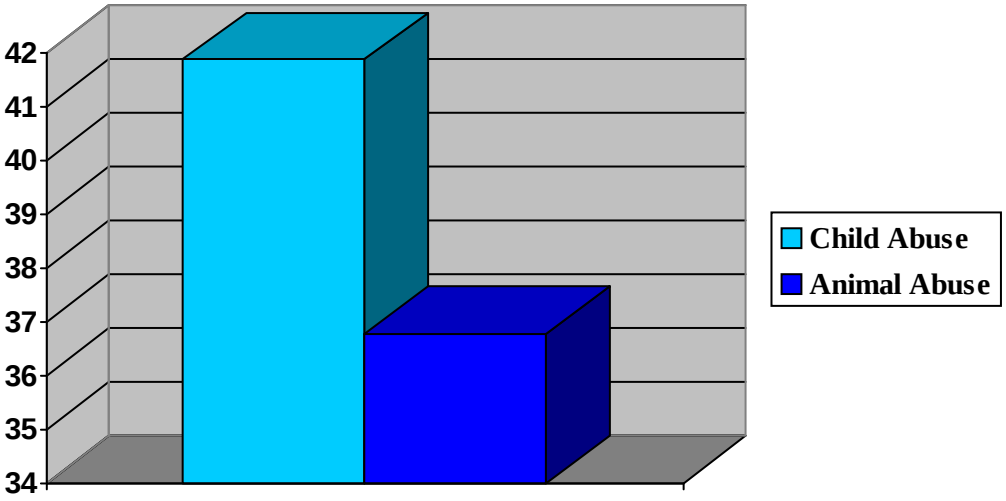

Figure 3. Participants' willingness to intervene in cases of child abuse versus cases of animal abuse.

Discussion

Participants scoring high on the scale that measured feminist attitudes also rated their willingness to intervene in cases of child abuse and cases of animal abuse equally. This is consistent with the expectation that many radically feminist participants were likely to have experienced forms of child abuse and would, therefore, be likely to have morphological and physiological changes in the limbic system. These alterations would explain the lack of integration between the right and left hemispheres of the brain, leading to the inability to discern differences in the gravity of the child abuse and the animal abuse scenarios. The limbic system alterations would also account for misperceptions of situations, which would lead these radical feminists to think that child abuse and animal abuse are more similar than would traditional and moderate women.

Sampling error could have influenced the findings in the study. Participants included exclusively women attending college. Sears (1986) noted that compared to older adults, college students have less well-formed attitudes, less well-developed senses of self, and more highly developed cognitive skills. Because of their high functioning capabilities, it is also likely that the college sample in this study may have been less likely to have experienced extreme forms of abuse than would have radical feminists in the general population. Additionally, it is likely that these participants hold relatively feminist beliefs given that they are taking advantage of access to education and are likely to pursue careers given their educational level. It is, therefore, possible that the results from this college sample would not generalize to a more representative sample of the general population. Additional research with a more representative sample may yield different findings.

It is also possible that the findings in this study were the result of measurement error. Recall that the measure of attitudes toward abuse was an ad hoc measure developed specifically for this study. It is, however, unlikely that measurement error was a significant issue in this study given the internal consistency of the *Perceptions of Social Issues Survey* as well as the *Neosexism Scale*.

As is the case with any survey research, it is also possible that the results of the study were not accurate representations of the participants' attitudes. Because the instruments were self-report measures of participants' feminist attitudes and attitudes toward abuse, participants may have felt compelled to answer in ways that they believed were socially appropriate. It is, however, unlikely that participants were concerned about appearing socially appropriate because the measures were completely anonymous and answers could, therefore, not be identified with individual participants.

The findings in this study offer some small support for the premise that feminists' ideologies may not exclusively reflect a social phenomenon, but rather reflect to some degree alterations in morphology and physiology of the brain brought about by an increased incidence of child abuse. Because of the established link between child abuse and radical feminism, a history of child abuse was assumed for this sample as well. It is, however, possible that this particular sample of feminists did not have a history of child abuse. It would, therefore, be valuable to replicate the study and determine the incidence of child abuse for the sample. If in fact this sample of feminists did have a history of child abuse, then their more espoused views of abuse may be a function of changes in the brain.

Future directions for this area of research should also include PET scans and MRIs to determine the actual areas of the brain that are functioning while traditional, moderate, and feminist participants with and without a history of child abuse ponder abusive situations involving children and animals. These forms of technology would make it possible to visualize which portions of the limbic systems are activated when considering abusive situations. It would then

be possible to determine if feminists' brains in fact function differently during these processes and if these differences are perhaps the result of a history of child abuse.

References

American Psychological Association. (2002). Ethical principles of psychologists and code of conduct. *American Psychologist, 57*, 1060-1073.

Bremner, J. D. (1999). Does stress damage the brain? *Biological Psychiatry, 45*(7), 797-805.

Brown, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the Research. *Psychological Bulletin, 99,* 66-77.

Burn, S.M., Aboud, R., & Moyles, C. (2000). The relationship between gender social Identity and support for feminism. *Sex Roles, 42,* 1081-1089.

Buschman, J. K., & Lenart, S. (1996). "I am not a feminist, but…": College women, feminism, and negative experiences. *Political Psychology, 17*, 59-75.

Children's Defense Fund (1997). Every day in America. *Children's Defense Funds Reports, 18* (2), 15.

Coclanis, P. A., & Bruchey, S. (1999). *Ideas, Ideologies, and Social Movements: The United States Experience Since 1800.* Columbia, S.C.: University of South Carolina Press.

Cowan, G., Mestlin, M., & Masek, J. (1992). Predictors of feminist self-labeling. *Sex Roles, 27*, 321-330.

Faludi, S. (1991). *Backlash: The undeclared war against American women.* New York: Crown Publishers.

Ferguson, M. (1998). *Animal Advocacy and English Women, 1780-1900: Patriots, Nation, and Empire.* Flint, Michigan: University of Michigan Press.

Gerson, M. J. (1986). The prospect of parenthood for men and women. *Psychology of Women Quarterly, 10(1),* 49-62.

Hornstein, N. L, & Putnam, F. W. (1996). Abuse and the development of dissociative symptoms and dissociative identity disorder. In C. R. Pfeffer (Ed.) *Severe stress and mental disturbance in children.* (pp. 449-473). Washington, DC: American Psychiatric Press.

Limbaugh, R. H., III. (1993). *See, I told you so.* New York: Pocket Star.

Lott, Bernice E. (1973). Who wants the children? Some relationships among attitudes toward children, parents, and the liberation of women. *American Psychologist. 28*, 573-582.

McEwen, B. S. (2003). Early life influences on life-long patterns of behavior and health. *Mental Retardation and Developmental Disabilities Research Review, 9*(3), 149-154.

Pitkanen, A., Savander, V., & LeDoux, J. E. (1997). Organization of intra-amygdaloid circuitries in the rat: An emerging framework for understanding functions of the amygdala. *Trends in Neurosciences, 20*(11), 517-523.

Putnam, F. W., & Trickett, P. K. (1993). Child sexual abuse: A model of chronic trauma. *sychiatry, 56*(1), 82-95.

Renzetti, C. M. (1987). New wave or second stage? Attitudes of college women toward feminism. *Sex Roles, 16*, 265-277.

Rickabaugh, C. A. (1995). College students' stereotypes of gender and political activism. *Basic and Applied Social Psychology, insert,* 319-331.

Schmahl, C. G., Vermetten, E., Elzinga, B.M., & Bremner, J.D. (2003). Magnetic resonance imaging of hippocampal and amygdala volume in women with childhood abuse and borderline personality disorder. *Psychiatry Research, 122*(3), 193-198.

Silverman, A. B., Reinherz, H.Z., & Giaconia, R.M. (1996). The long-term sequelae of child and adolescent abuse: A longitudinal community study. *Child Abuse and Neglect, 20,* 709-723.

Stein, M. B., Koverola, C., Hanna, C., Torchina, M.G., & McClarty, B. (1997). Hippocampal volume in women victimized by childhood sexual abuse. *Psychological Medicine, 27* (4), 951-959.

Teicher, Martin H. (2002). Scars that won't heal: The neurobiology of child abuse. *Scientific American.* 68-75.

Teicher, M. H., Andersen, S.L., Polcari, A., Anderson, C.M., & Navalta, C.P. (2002). Developmental neurobiology of childhood stress and trauma. *Psychiatric Clinics of North America. 25* (2), 397-426.

Teicher, M. H., Ito,Y., Glod, C. A., Schiffer, F., & Gelbard, H. A. (1994). Early abuse, limbic system dysfunction, and borderline personality disorder. In D. Speigel (Series Ed.) & K.R. Silk (Vol. Ed.) *Progress in psychiatry: Num 45. Biological and neurobehavioral studies of borderline personality disorder (177-207).* Washington, DC: American Psychiatric Press.

U.S. Department of Health and Human Services, Administration on Children, Youth and Families (2002). *Child Maltreatment 2000.* Washington, DC: U.S. Government Printing Office.

Wallace, H. (1998). *Victimology: legal, psychological, and social perspectives.* Boston: Allyn and Bacon.

Williams, R., & Wittig, M. A. (1997). "I'm not a feminist, but…": Factors contributing to the discrepancy between pro-feminist orientation and feminist social identity. Sex Roles, 37, 885-904.