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Aggression: Relationships with Sex, Gender-Role Identity, and Gender-Role Stress

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A thesis

presented to

the faculty of the Department of Psychology

East Tennessee State University

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In partial fulfillment

of the requirements for the degree

of the Master of Arts in Psychology

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August 2005

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Keywords: Gender, Gender-Roles, Aggression

ABSTRACT

Aggression: Relationships with Sex, Gender-Role Identity, and Gender-Role Stress

by

Robin L. Leonard

Sex, gender-role identity, and gender-role stress were assessed in terms of their relationship to observed gender differences in self- reported aggression. Physical and verbal aggression were explored, as well as the affective component of anger and cognitive component of hostility. The role of emotional intelligence in these relationships was also evaluated as a possible correlate to the gender-related variables. The results indicated that both gender-role stress and gender-role identification were significantly associated with all components of aggression; however, only physical aggression was related to sex. Emotional intelligence was linked to sex and gender-role identity but not with gender-role stress. The results also suggested that emotional intelligence predicts physical aggression, anger, and hostility in addition to the variance explained by gender variables, presenting negative relationships with each of these variables.

DEDICATIONS

I would like to dedicate this manuscript to my family. How did I ever get so lucky?

To Mom: I wouldn't be here without you…in more ways than one! Thank you for my life. Thank you for EVERYTHING!

To Lara, the Smartest Woman I Know: You are a constant source of inspiration. Thank you for always believing in me, even when I didn't believe in myself.

To Amy: You are always there when I need you, giving me your love and support. Thanks for being you and adding spice to my life.

To Tim and Isaac, My Incredible Nephews: The world through your eyes is beautiful. Thanks for keeping me young!

And Above All, For Now and For Always,

To Alexander: Your love is the light of my life. You fill my heart and mind with love, pride, and joy. You are my ultimate inspiration.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

In today's society, everywhere we turn we are greeted with yet another tale of violence against our fellow man. From civil wars to international disputes, lovers quarrels to community violence, child abuse to school shootings, violent behavior destroys lives every day. Aggression is a natural biological drive found in all animals, but, unlike other animals, humans have the unique ability to control their primitive drives and urges. Human aggression is a multi-faceted response system that has an enormous impact on society, and if people can learn to exercise control over their hunger and their sexual drives, then it seems plausible that humans could gain control over their aggressive tendencies as well. Unfortunately, as with all human behaviors, it is not that simple. Because of man's capacity to think and to reason, multiple influences are at work in the creation of behavioral response systems such as aggression. We might be able to eliminate inappropriate responses if we could eventually identify the factors driving these responses.

Of course, aggression is not all bad. There is no denying that mankind would not have survived through its evolutionary history if it were not for man's aggressive skills. Evolutionary theory suggests that only those best adapted to their environment will survive to pass on their genes, and it seems plausible that in the early history of mankind, intelligent aggression would have been a very adaptable trait (Darwin, 1859). Even in today's society, corporate magnates and self-made business-people, as well as other professionals, need to possess a certain level of aggression to reach their goals. Masculine gender-role traits, such as aggression, assertiveness, and willingness to stand up for one's beliefs, have been associated with success and self-actualization (Faulkender, 1991). Distinctions have been made between hostile aggression, which is performed for the sole purpose of causing harm or destruction, and instrumental

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aggression, which is done to achieve another goal. While instrumental aggression can be used in a negative way, such as when a bully is aggressive for the purpose of getting his way, instrumental aggression was also used in a positive way when securing our freedom as a nation, freeing the Germans and most of Europe from the regime of Adolph Hitler, and maintaining freedom and peace for a variety of civilizations. While diplomatic resolutions must be considered exhaustively, sometimes it seems that aggression is the only way to resolve a society's conflicts. So, while aggressive behavior can provide benefits to the individual man, as well as society, this beneficial side of aggression will not be explored in this research. Rather, the focus of this paper is to evaluate possible variables that are related to the negative aspects of instrumental aggression as well as aggression that is intended to harm without other goals or rewards.

As stated, aggression is multi-faceted, and a large number of variables seem to be related to it. However, it may be that there are a few underlying variables that mediate aggression. Sex has been associated with violence in our society, and the average layperson would probably concur with the view that man is the more aggressive of the sexes. However, it appears that gender itself may be multi-faceted, perhaps shaped by more than the influence of biology.

The hormone, testosterone, has been associated with aggression, but review of the literature produces conflicting results. For every study that find an association between testosterone and aggression (Chance, Brown, Dabbs, & Casey, 2000; Maras, et al., 2003), there is another one that does not (Constantino et al., 1993; van Goozen, Matthys, Cohen-Kettines, Thijssen, & van Engeland, 1998). In every age group and across multiple populations, inconsistencies exist in the research on the effect of testosterone on aggression, even within the same age group or population, which unfortunately has left more questions than answers (Book, Starzyk, & Quinsey, 2001; Ramirez, 2003).

Another gender concept is gender-role identification. Society has a set of unspoken rules, or guidelines, concerning what is and is not appropriate behavior for all types of people in all situations, and gender is no different. *Gender-role norms* is the term that refers to rules that deeply infiltrate us and govern our behavior. People either identify with a particular gender, and thus are classified as either masculine or feminine, or they display a mix of masculine and feminine traits and are classified as androgynous or undifferentiated (Bem, 1974, 1981a, 1981b). Identification with a particular gender-role influences a person's behavior, especially the person who strongly identifies with one role and strictly adheres to the rules (norms) associated with this group.

This process of identifying with a particular gender-role is shaped by parents, teachers, coaches, and society at large. From the time of birth, boys and girls are treated differently in almost every setting they encounter (Campagnola, 1995; Rothbart & Maccoby, 1966). These guidelines are heard by children, and they tend to respond in accord with what they believe is expected of them (Fagot & Leinbach, 1995; Sandnabba & Ahlberg, 1999). Emotional responses are also socialized. Men are socialized to have ultimate control over emotions representing vulnerability or to simply not have them. At the same time, anger and aggression are not only tolerated in men, but are expected of them. Women on the other hand have another set of emotional demands to fill; they are expected to carry most of the sympathy and empathy in the world. While this characterization may be simplified, it is a phenomenon that researchers have verified (Fivush, Brotman, Buckner, & Goodman, 2000; Stapley & Haviland, 1989; Zeman & Shipman, 1996).

Children and adults who have been socialized heavily to a particular gender-role often feel stress when life places them in situations that violate the norms for that role (Eisler & Skidmore,

1987; Gillespie & Eisler, 1992). This stress is yet another variable in the gender system and can affect how one responds in the situation. *Gender-role stress* has been studied in men and has been implicated in intimate partner abuse (Eisler, Franchina, Moore, Honeycutt, & Rhatigan, 2000; Francina, Eisler, & Moore, 2001) and in a variety of other improprieties attributed to men (McCreary et al., 1996).

As noted, the concept of gender is far more complex than one at first realizes, and the differences that one observes between men and women in various personality and behavioral traits are a product of a great number of variables. The purpose of this research was to study three variables in the gender system, *sex*, *gender-role identity*, and *gender-role stress*, in terms of their relationship to interpersonal aggression. The role of emotional intelligence will be examined in these relationships as well.

Theories of Aggression

Biological Perspectives

Aggression and sex are variables that are linked to biology, and many biological theories have been developed to explain this relationship. Darwin (1859) was among the first to suggest that aggression was a necessary inborn characteristic. Fighting for territory and resources is one of the fundamental laws of nature (Wolman, 1980). If life depends on the survival of the strongest and the fittest, and if there are predators that are stronger and fitter, our ancestors had to be aggressive to survive. If men were the hunters, they needed to be aggressive to survive, and, if successful, their skills would be passed on to the next generation.

Freud speculated that every human being perpetuates self-destructiveness, which is fueled by Thanatos, or the death instinct, which must destroy things and other people to survive (Wolman, 1980). Freud said that we also have another instinct for love, called Eros. Given the evolutionary

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history of humankind, it seems likely that Ares is genetically older than Eros and much stronger, made evident by the fact that all animals can eat, but not all of them have the capacity for love (Wolman). Lorenz (1967) also saw aggression as an instinctual behavior, but he saw it as having adaptive value rather than being self-destructive. He also realized that instinctual behavior needs to be released, and that attacking one's neighbor, instead of one's mate, has a distinct survival value. He speculated that perhaps humanity has unwittingly fortified its natural capacity for destruction without working to enhance its natural abilities to inhibit aggression.

A thorough look at the relationship between biology and gender differences in aggression cannot omit the role of biochemistry. There is no doubt that testosterone, estrogen, and other androgens are principal agents in the physical differences between women and men. Some people would argue that testosterone and related hormones are solely responsible for the aggression that is observed in men. However, findings have been highly inconsistent, and meta-analyses suggest that there is a very small positive correlation between testosterone levels and aggressive behavior (Book et al., 2001; Ramirez, 2003). The relationship between testosterone and behavior has also been conceptualized as reciprocal, while increased testosterone may intensify aggression, aggressive acts themselves may also boost testosterone levels (Mazur & Booth, 1998).

While biological influences on aggression are undeniable, the human animal has displayed the ability to control its instinctual urges. This power over biology goes beyond controlling one's anger. Humans routinely resist their hunger drive, and they diet; and they also have command of their sexual drives. Indeed, there is something uniquely human that cannot allow for a wholly biological interpretation of gender differences in aggression.

Social-Cognitive Theories

Cognitive theories suggest that children will not begin to demonstrate any gender-typed behaviors until they are old enough to have an understanding of what it means to be a girl or a boy. The gender schema theory proposed by Bem (1974) suggested that children acquire environmental input and then organize it schematically by categorizing this information as best they can. Children who acquire and store information that is congruent with sex-role stereotypes will limit their behavior in accord with these concepts. For example, the traditional masculine stereotype depicts men as forceful, aggressive, and willing to take risks (Bem), and boys and men who adhere to this gender-role are prone to act more aggressively than their androgynous counterparts, who display an equal number of both masculine and feminine characteristics (Hong, 2000; Mosher & Tomkins, 1988). Social learning theory suggests that the information children attain and process regarding gender-roles comes from observing their same sexed parents, peers, and other societal models (Bandura & Walters, 1963). Aggressive models are widely available in today's society, found in the family, the subculture, and in the mass media; boys especially seem to be bombarded with models that depict man as dominant (Goodey, 1997; Murray, 1999). Behaviors are also acquired through learning associations between actions and consequences (Bandura & Walters). Behavior that is rewarded will increase in frequency, and behavior that is punished will decrease in frequency. Bandura, Ross, and Ross (1963) also showed that these associations do not have to be learned directly, rather they could be learned vicariously by examining the consequences of others' behavior. Frequently, media models portray situations in which they are rewarded for their aggressive or destructive behavior. Lacking the discernment and evaluative capabilities of adults, children often take these "lessons" as an indicator that they can "get away with murder." Aggression, and the illusion of power that

accompanies it, often becomes its own reward (Wolman, 1980). The fact that acts of destruction generally require little power, influence, or ability to achieve objectives makes them especially appealing to immature and insecure individuals who are rewarded by the illusion of power and control they experience when being the aggressor.

As noted, a variety of suppositions exist for human aggression and its prevalence in men. However, theories alone are insufficient. Empirical support is needed. Review of the supporting literature may lead to a better understanding of the validity of the theories of aggression.

<div align="center">*Research*</div>

Sex and Aggression

Research on the influence of biology on aggression has focused on testosterone, as it has been identified as the most powerful biological determinant of masculinization in both physical appearance and behavioral responses (Ramirez, 2003; Schaal, Tremblay, Soussignan, & Susman, 1996). The effect of testosterone on behavior has been studied at every stage of childhood and young adulthood. Research with preschoolers indicated that high levels of testosterone in small children, both boys and girls, is positively associated with giving and receiving aggression in competitive social interactions but not in free play (Sanchez-Martin et al., 2000). Research involving primary-school-aged children has focused on the interaction of testosterone and aggression in boys with behavioral disorders and discrepancies that exist between boys with and without a history of behavioral or psychological conflict (Chance et al., 2000; Constantino et al., 1993; van Goozen et al., 1998). In a study that compared boys aged 5 to 11 with behavior disorders to normal boys, Chance et al. found a significant positive relationship between testosterone levels and externalizing psychopathological symptoms and negative relationships between testosterone and social and academic functioning, suggesting that perhaps testosterone

plays a role in delinquent behaviors. However, other comparisons among children in the same age group have not found a significant relationship between testosterone and aggression. Constantino et al. did not find a difference in testosterone levels between normal boys and boys who were hospitalized specifically for violent or unmanageable behavior. A similar finding was reported by van Goozen et al. in a comparison of normal boys to boys diagnosed with oppositional defiant disorder and/or conduct disorder, disorders that are linked to aggressive and delinquent behavior in children.

A completely unexpected relationship was obtained in a very thorough longitudinal study of 178 boys followed from age 5 until age 13 (Schaal et al., 1996). Physical aggression was assessed every year of school by both teacher and peers, and social dominance and testosterone were assessed in a laboratory setting when the boys were 13. Results indicated that, contradictory to normal expectations, boys who had a history of physical aggression throughout elementary school had lower levels of testosterone at age 13 than boys with no history of physical aggression. High aggression boys were also having problems in both academic and social arenas. In contrast, boys who were perceived as socially dominant and who emerged as leaders of their peer group had the highest levels of testosterone. Thus, this study seemed to support the idea that testosterone is linked to social success rather than physical aggression. However, a similar longitudinal study followed a group of children from birth to age 14 and found that high testosterone levels at age 14 were significantly related to elevated scores of externalizing behavior for young boys but not for young girls (Maras et al., 2003). On the other hand, the majority of this sample consisted of at risk youth who had experienced pre- and perinatal complications, lived in families with psychosocial problems, and were of low socioeconomic status. Although the authors of the study controlled for these obvious risk factors statistically,

perhaps there was some other attribute of this population, possibly a sense of helplessness and frustration with their circumstances that contributed to this difference.

Without regard to testosterone, men score significantly higher on scales of physical aggression than women (Harris & Knight-Bohnoff, 1996). Increasing age has been demonstrated to have a negative relationship with aggression scores, perhaps indicating that elusive testosterone connection because increasing age has also been shown to have a negative relationship testosterone levels (Mazur & Booth, 1998). In an interesting testosterone study with adult men, participants received weekly injections of testosterone for eight weeks (O'Connor, Archer, Hair, & Wu, 2002). Participants were given a variety of measures designed to measure mood, aggression, and impulsivity at baseline, four weeks, and eight weeks. The results indicated that from a number of possible predictors, trait impulsivity accounted for the most variance in a variety of aggression scores. Aggression level scores did not relate to increases in testosterone levels, nor were there any related mood effects. If this finding is verified, it would lend support to the unpopular idea that testosterone has nothing at all to do with aggression because if aggression is caused by testosterone, then these participants would have automatically and involuntarily become more aggressive over the course of the study. Another study that followed the menstrual cycles of women also found that testosterone levels had no relationship with aggressive responding to provocation (Dougherty, Bjork, Moeller, & Swann, 1997). Plasma testosterone levels in women are known to fluctuate with the menstrual cycle, increasing significantly during the ovulatory phase. Regardless of these fluctuations, however, women tended to respond with the same level of aggression to provocation from an imaginary opponent across the entire menstrual cycle.

Inconsistent results on the relationship of testosterone and aggression have been found across all age groups and across a variety of populations (Book et al., 2001; Ramirez, 2003). Could the ambiguous relationship between testosterone and aggression be a problem with methodology rather than actual effect (Ramirez)? Testosterone levels vary widely from individual to individual even when those individuals are of the same age. In studies evaluating a wide age range, especially with children, results can be very misleading due to variance across participants. Also, testosterone production fluctuates as a circadian rhythm; therefore, levels can be higher or lower depending on the time of day and the participant's level of arousal. Many studies take only one saliva sample at one point in time, potentially underestimating or overestimating an individual participant's true average level of testosterone (Ramirez). Regardless of what some of the literature suggests, it is likely that there is a biological basis for some of the variance that has been observed between men and women in aggression. However, other nonbiological factors likely relate to the gender difference in aggression.

Gender-Role Identity and Aggression

Gender-role refers to a set of behavioral norms that are differentially associated with men and women. Individuals who hold strictly to these gender rules can be said to have either a masculine or feminine *gender-role identity* (Bem, 1974, 1981a). The effects of gender-role identity, both positive and negative, have been widely reported (Murnen, Wright, & Kaluzny, 2002). Specifically, the role of the traditional masculine gender-role in human expression of aggression has been widely studied, and results indicate that gender-role stereotypes begin to influence the behavior and attitudes of children at a young age (Cobb, Cairns, Miles, & Cairns, 1995; Goodey, 1997; Levy, Taylor, & Gelman, 1995). Young children seem to be especially governed by the "rules" for appropriate gender behavior and consider transgressions against them to be more

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severe than transgressions of moral rules (Levy et al.). The Levy et al. cohort study provided evidence that preschool age children have the most rigid view of correct gender behavior, which becomes increasingly more flexible with increasing age. Before these rigid gender-roles begin to relax, however, expectations of traditional gender-role behavior can have a negative effect on the young. Goodey showed that boys who yield to a dominating masculine ideal are more likely to inhibit their natural feelings of fear and vulnerability, perhaps leading to exaggerated masculinities that often results in unpredictable, risky, or antisocial behavior. Indeed, without regard to the level of masculinity, adolescent boys report more serious personal injuries and "close calls" or "near accidents" than girls and describe more instances of risk-taking behavior associated with injuries and "close calls," such as driving over the speed limit (Cobb et al.).

The effects of the traditional masculine gender-role on the behavior of boys continue to young adulthood, and hypermasculinity has been associated with abuse against and negative attitudes toward groups of people who exhibit feminine characteristics (Parrot, Adams, & Zeichner, 2002). Weisbuch, Beal, and O'Neal (1999) reiterated that aggression is a main component of the masculine stereotype in our society and is reflected in the number of adjectives on the BSRI directly related to aggression (e.g. aggressive, dominant, forceful). Using a noise blast procedure in which participants could regulate both the intensity and duration of a putatively delivered noise blast, they demonstrated that men high in masculinity retaliated against an opponent with significantly more overt aggression than low masculinity or androgynous men, and that men who were not as masculine as they thought they ought to be responded with more covertly aggressive means. This and other research suggests that traditional masculine gender-roles continue to affect social interaction, even with strangers, for men who firmly adhere to these ideals. Murnen et al. (2002) found that men who conform to a traditional

patriarch ideology are more likely to be sexually aggressive toward women, although this effect is mediated by other factors. Research on the homophobic attitude suggests that it does not stem from a negative evaluation of or a moral objection to gay men but rather exists as a result of the interplay between hypermasculinity and misogynistic attitudes (Parrot et al.). Parrot et al. proposed that it is likely that any encounter with femininity, whether displayed by a man or a woman, may trigger a negative response in the homophobic man, and that there is also an underlying anti-feminine disposition in the homophobic man that relates to his hypermasculine ideals.

If masculinity were indeed the factor that mediates the relationship between gender and aggression, then women with a masculine gender identity would be as aggressive as their male counterparts. However, the majority of research has not confirmed this proposition. Dietz and Jasinski's (2003) hypothesis that women who endorse masculine traits are more inclined toward violence was not supported, and their results indicated that self-esteem might be a confounding variable in the relationship between gender identity and aggression. Research with British students investigating an increased societal phenomenon the British have called "laddishness," or masculine behavior in young women whom they term "ladettes," also failed to establish a relationship between masculinity in women and aggression (Muncer, Campbell, Jervis, & Lewis, 2001). "Laddishness" was not related to several measures of aggression. Women high in masculinity have been shown to behave more aggressively in ambiguous situations (Kogut, Langley, & O' Neal, 1992). Women were asked to take a placebo pill about which they were given either concrete or ambiguous information about the pill's effects. They were then provoked and given a chance to retaliate. High masculinity women did retaliate more aggressively than low masculinity women but only in the ambiguous drug condition.

As with sex and aggression, not all of the literature confirms the relationship between the masculine gender-role and aggression. Faulkender (1991) found that masculinity is a significant predictor of self-actualizing behaviors in young men and women. Maslow's idea of striving for your own personal best did not incorporate the idea of aggression as a means to get to the top. On the contrary, according to Maslow's theory, people who aggress against one another are probably some of the least self-actualized individuals in society. Smith, Ellis, and Benson (2001) failed to find an association between gender-roles and aggression. They found that although men score higher than women do on measures of violence, there were no significant relationships between gender-role groups and aggression.

Critics of research on sex and gender-role differences have suggested that gender differences are evident in aggression research because research has failed to evaluate types of aggression that are more evident in women and girls (Crick & Grotpeter, 1995). Girls and women differ from men in their behavioral expression of aggression, with girls displaying more interpersonal aggression than boys do. When girls become angry, they retaliate by subtle, less physical means, such as excluding the enemy from their peer group and social activities (Crick, 1986; Crick & Grotpeter). They may also spread rumors about the friend and try to get others on their side. This punishment is usually a lengthy process, lasting several days, while boys just get it out and get it over with. This passive-aggressive type of aggression has substantial negative consequences upon a child's social adjustment. Dietz and Jasinski (2003) observed that women who identified strongly with traditional feminine gender-roles were more likely to engage in psychological aggression than their masculine or androgynous counterparts. Rather than contradicting research supporting the influence of gender-roles on aggression, this line of research provides a deeper look into the complexity of the interaction between gender-role ideology and aggression.

The difference between masculinity and femininity on physical aggression has been widely supported as it pertains to men, but the effect of gender-roles on aggression in its entirety is inconsistently supported by research. The inconsistent findings for masculine women and the reports of positive aspects of masculinity suggest that additional research is needed to clarify the relationships. It seems that the differential behavioral responses of women and men cannot be fully explained by sex or by gender-role identity. Perhaps, one answer lies in the role of culture in the construction and maintenance of beliefs about gender, and the stress that results from interacting in a society that encourages stereotypical gender behavior.

The Socialization of Gender-Role Identity

Societal expectations concerning gender-related behavior have been well documented. Numerous studies indicate that the culture promotes the idea that masculine behavior in girls is permissible, while effeminate behavior in boys is not acceptable in society (Antill, 1987; Feinman, 1981; Leonard & Clements, in preparation; Sandnabba & Ahlberg, 1999). Parents have significantly more traditional gender-role expectations for boys than for girls, and this effect seems to be stronger among fathers (Leonard & Clements, in preparation). Sandnabba and Ahlberg found that girls who were labeled as boyish were considered by parents to be much more accepted in society and psychologically healthy with good prospects for the future. "Girlish" boys, on the other hand, were viewed much more negatively by parents, who thought that this cross gender behavior would result in future psychological difficulties. Parents thought that cross-gender boys had a greater likelihood of being gay in adulthood. No similar ideas were reported in reference to cross-gender girls becoming lesbians. Antill found a similar result in fathers, who thought that it was significantly more likely that cross gender children would grow up to be homosexual, especially boys. Antill did not observe these same effects in mothers.

Feinman offered a possible explanation of this phenomenon based on the status characteristic approach. He postulated that a woman's move into a man's role is considered acceptable because it is seen as being a move up in the world. On the other hand, a man's movement toward the less valued feminine role is viewed more negatively.

Parents begin socializing their young child into the appropriate gender-role basically from birth. It is not merely a matter of pink sleepers and blue blankets, parents also have been shown to interact differently with their male and female children, both verbally and nonverbal, in play and in discipline (Campagnola, 1995; Fivush et al., 2000; Lindsey, Mize, & Pettit, 1997; Rothbart & Maccoby, 1966). Rothbart and Maccoby were among the first to demonstrate the differential treatment of children by parents, who appear to react to their children based upon their own gender and the gender of their children. Their results indicated that fathers were more permissive with a daughter's undesirable behavior, and mothers more permissive with their son's undesirable behavior. Campagnola investigated sex-differentiated parent-child interactions with the parents of one-year-old opposite-sex twins. He observed that both mothers and fathers inhibited the boy twins more than the girls: fathers encouraged more gender appropriate play in both girls and boys, while mothers encouraged more neutral play in their sons. Another recent study involving the differential play patterns of children discovered that overall girls engaged in more pretense play, while boys were more involved in physical play. However, boys participated in pretense play more frequently when in the company of their mothers, and fathers and sons engaged in physical play more than any other parent-child dyad. The results of this study suggest that children may adjust their behavior to the parent with whom they are interacting (Lindsey et al.). Fivush et al. reported that parents also interact differently with their male and female children during verbal communication, especially when discussing feelings or emotional events.

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Parents conversed with their child about four past events when the child had felt emotion, and conversations were rated on the basis of emotional content. Mother-child conversations were longer, and mothers talked more about the emotion and causes of the emotion with both sons and daughters, than did the fathers. However, both parents used fewer emotion words and more autonomous, or impersonal, themes when conversing with sons than when they were conversing with daughters.

Children may pick-up on these subtle cues quickly and begin to adjust their behavior accordingly at a very young age. Comparing egalitarian versus traditional parents, Fagot and Leinbach (1995) found that children from egalitarian homes acquired gender labels significantly later, i.e. the ability to correctly identify males and females of all ages, and demonstrated less gender-related knowledge, such as being able to sort clothes and occupations into gender-related categories, at the age of four than children with traditional parents. These gender labels affect the types of toys with which children play and play behaviors in which children engage. Parents who report more traditional gender-role values label a significantly larger number of children's play things as being intended for girls only, but the same effect is not seen for toys intended for boys (Leonard & Clements, in preparation). These *gender restrictions* may influence small children, and sway their subsequent toy choices even when away from their parents (Raag & Rackliff, 1998). Preschoolers were offered toy dishes and toy tools. Children who reported that someone they knew would think that playing with the opposite gender's toys was bad spent significantly less time playing with these toys. Boys who believed that their fathers would think that playing with the items was bad refused to play with them at all, even if they reported liking the toys. These observations suggest that yet another gender-related phenomenon, *gender-role stress*, begins to affect choices and behavior at a young age. Gender-role stress refers to the amount of

stress that an individual feels when confronted with a situation that contradicts his/her adopted gender-role.

Parents' differential verbal communication with their children is also socialized early, and boys and girls report dissimilar emotional experiences and display opposing methods of dealing with emotions. Garner, Robertson, and Smith (1997) investigated the emotional expression of preschoolers and concluded that girls display more positive emotions, such as happiness, satisfaction, and love, while boys tend to display more negative emotions, such as anger. They found that anger is tolerated more in boys than in girls, and girls are expected to have more emotional control; moreover, the parents reported knowingly using different emotional socialization practices with their children. These gender differences in emotional experience and expression appear to remain stable throughout childhood. In evaluations of elementary school children, Hubbard (2001) reported that boys expressed more anger than girls and that primary-aged girls reported using verbal methods to communicate emotions more often than boys. Zeman & Shipman (1996) also stated that boys reported using mildly aggressive techniques to communicate emotions. Results for middle and high schoolers have been similar (Stapley & Haviland, 1989). Adolescent girls reported a broader spectrum of emotional experience than did boys, who reported more negative emotions. Adolescent boys found more emotional fulfillment in achievement, while girls found social affiliations to be more satisfying.

These differences in emotional experience may relate to gender-role attitudes. Conway (2000) found that masculinity was significantly related to lower levels of emotional awareness in college students. Pollack (1998) has referred to this masculine restriction of emotion as the "gender straitjacket," (p. 40) in which society does not allow boys to express their emotions and certainly does not teach them how to deal with them. He speculates that this boy code, along

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with increased exposure to media violence, access to weapons, and absence of parents, is responsible for the recent outbreaks in school violence among adolescent boys. Glazer (1999) seconded this opinion iterating that boys are not without emotion and that many boys report suppressing emotions due to societal pressures in adolescence, possibly leading to an increase in hostility and anger. Ko (1999) conducted one on one interviews with high school boys who reported that fighting and violence are ways in which they can prove their masculinity. Ko speculated that this also provided an outlet for emotions that were not allowed to be expressed.

These rules to follow, particular ways to behave, and display rules for emotions possibly contribute to the observed differences in aggression between boys and girls. The stress to conform to an ideal that may or may not be representative of the young boy's true feelings most likely affects the way in which he interacts with the world, especially when it seems the world is saying, "Aggression is manly."

Gender-Role Stress and Aggression

The degree of masculine gender-role socialization affects the amount of stress that men feel in particular gender relevant situations (Eisler & Skidmore, 1987). Masculine gender-role stress arises in situations in which individuals feel that their masculinity is being threatened, such as being physically inadequate, being unable to express feelings, being subordinate to women, feeling intellectually inferior, and being unable to perform in work or sex (Eisler & Skidmore). Men who experience high levels of gender-role stress are at an increased risk for anger, anxiety and other health-related problems (Eisler, Skidmore, & Ward, 1988). Both masculine gender-role stress and masculinity are significant predictors of anger and anxiety, but gender-role stress and masculinity are unrelated and each make a unique contribution to the variance observed in anger and anxiety. Men high in gender-role stress also report a higher incidence of unhealthy lifestyle

habits such as poor diet, lack of exercise, and tobacco and alcohol use. It has also been determined that masculine gender-role stress significantly predicts men's levels of anxiety and hostility independent from their gender, while women who report high levels of masculine gender-role stress have higher levels of depression (McCreary et al., 1996). Men and women as a whole do not differ significantly in terms of hostility and anxiety, but when compared on the basis of masculine gender-role stress, significant differences become apparent. These results indicate that masculine gender-role stress is indeed a unique construct that has differential effects on men and women.

High levels of masculine gender-role stress have also been linked to intimate partner abuse (Eisler et al., 2000; Franchina et al., 2001). Men who report high levels of gender-role stress are more likely to attribute negative intent to their partner's behavior in conflict situations. They also report more feelings of irritation, anger, and jealousy. Men with high levels of gender-role stress also endorse verbal and physical aggression as conflict resolution strategies more than men who are low in gender-role stress. Alcohol and drug abuse are often defenses used to alleviate stress by men who experience high levels of gender-role stress, and this combination contributes to partner abuse among these men (Copenhaver, Lash, & Eisler, 2000). Men with higher gender-role stress reported more instances of partner abuse, but this effect was also related to trait anger, suggesting a possible construct overlap between masculine gender-role stress and anger. Alcohol and drug abuse increased verbal aggression but not physical aggression as was expected. Efthim, Kenny, and Mahalik (2001) found that for men gender-role stress produced externalizing behaviors as well as feelings of shame and guilt, while women only experience shame as a result of violating social gender-role norms. Jakupcak (2003) looked at the interaction of masculine gender-role stress and men's fear of emotions, with the idea that emotional fear is a contributing

factor in some men's violent responses. He found that, after controlling for masculine gender-role stress and family income, fear of emotion was still a significant contributor to the variance in aggression and violence scores. When entered together in a regression model, both masculine gender-role stress and fear of emotion were found to be significant contributors to men's self reports of aggression and violence.

Feminine gender-role stress has also been established as a construct independent from femininity (Gillespie & Eisler, 1992). The concept behind feminine gender-role stress is similar to that of masculine gender-role stress. Women who feel an increased need to conform to traditional feminine gender-roles often experience stress when confronted with situations in which their behavior cannot fulfill their stereotypical guidelines. Feminine gender-role stress has been conceptualized to consist of five types of situations that cause women to experience stress: unemotional relationships, physical unattractiveness, victimization, behaving assertively, and failure in nurturing (Gillespie & Eisler). Both femininity and feminine gender-role stress have been associated with a variety of negative outcomes for women, including depression, eating disorders, body satisfaction, and somatic problems (Martz, Handley, & Eisler, 1995; Schmitz-Sciborski, 2001; Silverstein & Blumenthal, 1997). Feminine gender-role stress has also been associated with feelings of shame and guilt in women (Efthim, 1997), and femininity has been implicated as reducing motivation for personal success in women who feel bound by their gender-role (Morinaga, Frieze, & Ferligoj, 1993). This information suggests that men are not the only ones to feel pressure about conforming to societal norms for their gender.

The Current Study

Statement of the Problem

Human aggression against other humans is possibly the biggest threat that faces humankind today. Throughout history and still today, the majority of individuals who perpetuate violence are men. Many researchers have speculated about the exact cause of this gender difference. Of course, biology must play a role, but it is important to understand the effects of stereotypes and behavioral norms on a person's behavior, as well as the stress one feels to adhere to these expectations. Therefore, gender differences in aggression appear to result from a complex interaction among biology, cognition, and socialization, which leads to the question of whether one of these has more influence on the observed outcome of aggression than the others. If we can clarify that these factors are related to the male tendency toward aggression, then appropriate, targeted education programs can be used to verify their causality.

Socialization also affects emotional responses as well as the ability to manage those responses, that is, to moderate the emotions. It remains unclear however, whether emotional awareness and management (i.e. emotional intelligence) result from the same gender processes that produce aggression, or whether it is an additional variable that is related to aggression. To gain a better understanding of the interplay between gender processes, emotional intelligence, and aggression, the current study was designed to define the relative contributions of several gender variables to the levels of aggression and emotional intelligence.

Objectives of the Current Study

The current research focused on two main questions. Are men more aggressive and violent just since they are males, or are other factors involved? This study examined the predictive contribution of biological sex, gender-role identity, and gender-role stress on aggression in an

attempt to determine which was the strongest predictor of human aggression. Emotional intelligence is a construct that also seems to be related to both gender and aggression, although the relationship thus far has not been clearly defined. A second focus of this study was to determine if emotional intelligence was a significant predictor of aggression beyond that accounted for by sex, gender-role identity, and gender-role stress, or if, as suspected, it was a by-product of these gender-related variables itself.

Variables

Biological sex was determined on a demographic questionnaire. This sample consisted of 167 men and 282 women. Gender-role identity was assessed with the Bem Sex Role Inventory short form (Bem, 1974, 1981b). The median split technique suggested by Bem was employed to separate participants into four groups based on their gender-role orientation. Participants with both masculinity and femininity scores above the median were classified as androgynous, and participants with both scores below the median were categorized as undifferentiated. Individuals with masculinity scores above the median and femininity scores below the median were classified as masculine, and individuals with femininity scores above the median and masculine scores below the median were classified as feminine. For this sample, 100 participants identified themselves as androgynous, 104 as feminine, 112 as androgynous, and 133 as undifferentiated.

Gender-role stress was assessed with the Feminine Gender-Role Stress Scale (FGRS) for women (Gillespie & Eisler, 1992) and the Masculine Gender-Role Stress Scale (MGRS) for men (Eisler & Skidmore, 1987). Participants were classified as having either low, medium, or high gender-role stress based on a sample-dependent tertiary split. The highest 33.3% of scores were classified as high stress, the middle 33.3% as average, and the bottom 33.3% as low. As men and women were analyzed by separate measures for this variable, this split also provided the

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advantage of helping to maintain comparable cell sizes. For this sample, 107 participants reported having low gender-role stress; 141 reported moderate levels of gender role stress; and 201 reported having high gender-role stress.

Two dependent variables were also assessed for this study. Aggression was measured by the Buss-Perry Aggression Questionnaire (AQ). This measure produces scores on four dimensions of aggression. The verbal aggression and physical aggression subscales measure behavioral responses, while the hostility and anger subscales measure cognitive and affective responses, respectively. Emotional intelligence was measured by the Scale of Emotional Intelligence (SEI) which assesses emotional perception and expression, emotional management, and emotional utilization (Schutte et al., 1998). For the first analysis, the raw scores of the SEI were analyzed as a dependent variable. Emotional intelligence was evaluated as a dependent variable in the analysis because it was decided that, although emotional intelligence by definition would be considered a predictor of aggression, it would also be influenced by the gender variables. For the second analysis, a tertiary split procedure, as described above, was used to categorize participants as high, average, or low in emotional intelligence.

Hypotheses

Main Effect of Sex

During the development of the AQ, Buss and Perry (1992) conducted numerous evaluations of the aggression scales and reported that men tended to score higher than women did on verbal and physical aggression as well as hostility. They reported no sex differences for anger. Several studies have confirmed their findings concerning physical aggression in men and boys (Archer, 2004; Crick & Grotpeter, 1995), while results on studies of hostility, anger, and verbal aggression have been mixed (Archer, 2004; Hubbard, 2001; Woodall & Matthews, 1993).

Consistent with the majority of the research, it was expected that men would have significantly higher scores than women on overall aggression and on the physical, verbal, and anger subscales of the AQ, and that women would have higher levels of hostility than would men. In harmony with the bulk of research, which suggests that men score lower than women in emotional intelligence, it was also hypothesized that men would have lower scores than women on the SEI (Ciarrochi, Chan, & Caputi, 2000; Schutte et al., 1998).

Main Effect of Gender-Role

Masculine gender-role identity has been linked to aggression in a variety of studies (Murray, 1999; Weisbuch et al., 1999). Murnen et al. (2002) found that masculine ideology is related to both hostility and sexual aggression. Higher levels of anger have also been associated with masculinity, and it as been speculated that this effect occurs because anger is the only acceptable emotion expression associated with the masculine gender (Murray). High levels of masculinity have also been linked to higher levels of physical aggression in women in ambiguous situations, although anger levels were not significantly higher than women with low levels of masculinity (Kogut et al., 1992). Femininity has been linked to increased emotionality and cognitive instability, especially depression (Efthim et al., 2001; Silverstein & Blumenthal, 1997); therefore, it is possible that femininity could also be associated with hostility. Androgyny has been associated with numerous positive behavioral, affective, and cognitive outcomes, including increased helping behavior, higher self-esteem, greater adaptability, and increased motivation (Fagot & Leinbach, 1995; Morinaga et al., 1993; Senneker & Hendrick, 1983; Witt, 1997). Based on these results, it was hypothesized that masculinity would be associated with higher levels of physical and verbal aggression, as well as anger. Femininity was thought to relate to

higher levels of hostility, and androgynous individuals were expected to have the lowest levels on all components of aggression.

Previous research has indicated that men high in masculinity tend to report a truncated emotional range, and emotional intelligence is considered by many to be a feminine attribute (Jakupcak, Salters, Gratz, & Roemer, 2003; Petrides, Furnham, & Martin, 2004); thus, it was hypothesized that masculinity would be related to lower emotional intelligence scores. Guastello and Guastello (2003) found a significant positive relationship among the indicators of androgyny and emotional intelligence. Considering this, as well as the perceived association between femininity and emotional intelligence (Petrides et al.), it was hypothesized that androgynous individuals and individuals who identify themselves as feminine would have significantly higher scores than individuals who identified themselves as masculine. It was expected that there would be no significant differences between androgynous and feminine individuals on scores of emotional intelligence.

Main Effect of Gender-Role Stress

Masculine gender-role stress has been linked to higher levels of physical and verbal aggression, as well as anger (Copenhaver, 2000; Eisler et al., 2000; Franchina et al., 2001; Jakupcak, 2003). McCreary et al. (1996) also found a positive correlation between masculine gender-roles stress and hostility. No previous associations have been found between feminine gender-role stress and the aspects of aggression, though feminine gender-role stress has been linked to shame-proneness and depression, which may be conceptually linked to higher levels of hostility and anger (Efthim et al., 2001; Gillespie & Eisler, 1992; Siverstein & Blumenthal, 1997). Based on these findings, it was hypothesized that men high in gender-role stress would score higher on both behavioral dimensions of aggression, physical and verbal. Given the

shortage of research on the relationship between feminine gender-role stress and aggression and the inconsistent results concerning the relationship between masculine gender-role stress and the affective and cognitive components of aggression, it was hypothesized that gender-role stress would be associated with anger and hostility, but the direction of this relationship was not specified. Jakupcak et al. (2003) found a positive relationship between masculine gender-role stress and a man's fear of emotion, which would likely affect a man's level of emotional intelligence. Therefore, it was hypothesized that men who are high in gender-role stress will score lower on emotional intelligence. As feminine gender-role stress has been associated with negative outcomes for women (Efthim et al.; Gillespie & Eisler), it was further hypothesized that women high in feminine gender-role stress would also score low on emotional intelligence.

Interaction Effects

Possible interactions among the gender-related variables were also explored in this project, but information was considered too limited to be specific about the nature of these interactions. Overall, it was expected that significant interaction effects, if any, would be consistent with the directions specified in the hypotheses of the main effects. For example, for the three-way interaction between biological gender, gender-role, and gender-role stress, it was expected that masculine men with high levels of masculine gender-role stress would have the highest overall aggression scores, highest scores on the verbal, physical, and anger components of aggression, and the lowest emotional intelligence scores, while androgynous women with low or moderate gender-role stress would have the lowest overall aggression scores, lowest scores on all subscales of aggression, and the highest levels of emotional intelligence.

Regression Analysis

It was further hypothesized that emotional intelligence, although a moderator of aggressive responding, would not be a significant contributor to aggression levels beyond that explained by the gender variables. Rather, the opinion was that emotional intelligence itself is a product of the interaction between sex, gender-role, and gender-role stress just as aggression is, as observed in the testing of the previous hypotheses. Therefore, it was considered that, once the variation in aggression scores accounted for by the gender variables was held constant, emotional intelligence would provide no additional predictive value to the aggression scores. In short, it was assumed that variations in both aggression and its moderating variable of emotional intelligence would be accounted for by the gender variables.

CHAPTER 2

METHOD

Participants

Undergraduate students (167 men and 282 women) from lower level general education courses at a mid-sized southeastern university participated in this research. The sample sizes for each cell of the design are provided in Figure 1.

		M	F	A	U		
	Low	17	8	18	19		
Men	Mod	11	5	14	16	Low = 107	M = Masculine
167	High	23	4	10	22		F = Feminine
	Low	12	6	11	16	Mod = 141	A = Androgynous
Women	Mod	31	17	16	31		U = Undifferentiated
282	High	44	26	43	29	High = 201	
		100	104	112	133		

Figure 1. Sample Sizes for Each Level of the Organismic Variables and for Each Cell of the Research Design

The goal was to have at least 20 participants for each cell of the design. However, it was expected that there would be fewer male participants and that it would be difficult to obtain this number in certain cells of the design, such as feminine men with high masculine gender-role stress. Also, due to the small number of women with low feminine gender-role stress, these cell sizes were smaller than desired as well. However, the obtained cell sizes were adequate for the analysis given the robustness of the MANOVA procedure concerning unequal and small cell sizes (Tabachnick & Fidell, 2001).

The majority of the students reported being college freshmen (49.3%); 22.5% were sophomores; 14.7% were juniors; and 13.2 % were college seniors. The participants ranged from 18 to 59 years of age, with a median age of 19 years. Students were offered extra credit toward their course grade for participating. Students who did not wish to participate were given the opportunity to complete an alternative assignment for the same amount of extra credit. The type of alternative assignment offered was left to the discretion of the course professor.

<p style="text-align:center">*Materials*</p>

The research booklet consisted of a cover-sheet (see Appendix A), a demographic questionnaire (see Appendix B), measures of gender-role identity (see appendix C) and gender-role stress (see Appendixes D & E), an aggression measure (see Appendix F), and a measure of emotional intelligence (see Appendix G). It was recognized that social desirability could influence participants to misrepresent themselves on these questionnaires, and the limitations of self-report data were considered in the interpretation of the analyses.

Instructions and Demographic Questionnaire

The top sheet of the research booklet provided an overview of the participant's confidentiality rights, a reminder (in bold) to refrain from including any identifying information on the survey, and a request to complete the book in the order in which it was presented. Following the cover sheet, a short demographic questionnaire requested relevant background information from the participants. Gender was requested to determine the participants' categorization for the variable of sex. Various demographic queries were included to obtain a comprehensive description of participants. Other items such as socioeconomic status, type of family unit, religious affiliation, and degree of fundamentalism were requested due to their documented relationships with gender-role identity and aggression. Race was not requested due

to the small minority population within this university, which might have made it possible for the researcher to identify individual students.

Measure of Gender-Role Identity

The short form of the *Bem Sex Role Inventory* (BSRI-SF) was used to assess the participant's gender-role identity (Bem, 1974, 1981b). The BSRI was designed for the purpose of discriminating between individuals who strictly adhere to the sex role stereotypes associated with their gender (i.e. masculine and feminine) from those who exhibit an equal number of traits and behaviors associated with both gender-roles (i.e. androgynous and undifferentiated). The BSRI possesses good internal consistency, having a Cronbach's alpha of 0.84 for the femininity scale and 0.86 for the masculinity scale. Test-retest reliability has been demonstrated for both scales, with femininity coefficients of 0.85 and masculinity coefficients of 0.91. The BSRI has been widely used in gender-role research for three decades. This has led some researchers to be concerned about the validity of the original adjectives given the change in gender-roles for both men and women during this time period. Holt and Ellis (1998) addressed these concerns and demonstrated that all of the masculine adjectives are still rated as significantly more desirable for men, and all of the feminine characteristics except two are also still valid. Of the two feminine characteristics that were no longer associated with the feminine gender-role (loyal and childlike), neither appears on the short form of the BSRI. Scores on the masculinity and femininity scales of the BSRI-SF are generated by the participant's rating of each adjective on a scale from 1 (*never, or almost never, true*) to 7 (*always, or almost always, true*). Higher scores are associated with a more stringent adherence to traditional gender-role stereotypes. A median split procedure is used to categorize individuals into four gender-role categories: masculine, feminine, androgynous, and undifferentiated.

Measures of Gender-Role Stress

Masculine gender-role stress was assessed using the Masculine Gender-Role Stress Scale (MGRS) developed by Eisler and Skidmore (1987). It is a 40-item scale in which each item depicts a situation that would cause stress in men with a strict traditional viewpoint of masculinity. Each item is rated on a six-point Likert scale, with responses ranging from 0 (not at all stressful) to 5 (extremely stressful). The maximum score is 200 points with higher scores indicating higher levels of gender-role stress. Feminine gender-role stress was measured with Gillespie and Eisler's (1992) Feminine Gender-role Stress Scale (FGRS). The scale was modeled after the MGRS and also contains situations perceived as stressful to someone who maintains a traditional feminine gender-role ideology. The rating scale used to evaluate the items is the same as for the MGRS, and score interpretation remains the same. However, the FGRS only has 39 items, and thus its maximum score is 195.

Measure of Aggression

The Buss-Perry Aggression Questionnaire (AQ) was used to measure aggression (Buss & Perry, 1992). The overall scale has good internal consistency, Cronbach's alpha 0.89, and test-retest reliability, $r = 0.80$. To generate scores on the AQ, participants are asked to rate a series of statements on a five-point Likert scale, with one corresponding to extremely uncharacteristic of me and five, extremely characteristic of me. Total aggression scores range from 29 to 145, and higher scores indicate a tendency to react or behave in a more aggressive manner. For this sample, the scores ranged from 33 to 131, with $M = 69.59$ and $SD = 18.27$.

The AQ is divided into four subscales designed to measure the behavioral, cognitive, and affective aspects of aggression. The Physical Aggression and Verbal Aggression subscales are designed to measure the behavioral component of aggression, while the Hostility subscale is

designed to measure the cognitive element of aggression, and the Anger scale, the affective constituent. All of the subscales have been shown to demonstrate high levels of internal consistency and to yield good test-retest coefficients.

Nine items make up the physical aggression subscale, yielding potential scores from 9 to 45, which was the range displayed in this sample. The mean and standard deviation for the physical aggression scale were $M = 20.82, SD = 7.64$. The verbal scale consists of five items that generate possible scores from 5 to 25, and again the full range of scores was represented in this sample. The mean for the verbal scale was *13.81*, with a standard deviation of *4.08*. The anger scale is comprised of seven items, and the possible range of scores is from 7 to 35. Scores for this sample ranged from 7 to 33, with $M = 15.29$ and $SD = 5.34$. Eight items make up the hostility scale, with possible scores ranging from 8 to 40. This samples' scores encompassed the whole range, and the mean hostility score was *19.66,* with a standard deviation of *6.34*.

Measure of Emotional Intelligence

The Scale of Emotional Intelligence Scale (SEI) (Schutte et al., 1998) was designed to measure the construct of emotional intelligence as modeled by Salovey and Mayer (1990). The three main aspects of Salovey and Mayer's model (appraisal and expression of emotion, regulation of emotion, and use of emotion) are assessed. The scale has good internal consistency, Cronbach's Alpha 0.90, and two-week test-retest reliability is adequate, $r = 0.78$. The scale consists of 33 statements that are rated on a five-point Likert scale, with 1 corresponding to *extremely uncharacteristic of me,* and 5 *extremely characteristic of me.* Scores range from 33 to 165, with higher scores indicating of higher levels of emotional intelligence. The range of scores for this sample was 35 to 159. The mean emotional intelligence score was *119.58*, with a standard deviation of *17.30*.

Procedure

Participants were asked to be involved in a study designed to assess personality characteristics and behavioral responses. Before distributing research booklets, the experimenter gave detailed instructions, including an overview of the confidentiality procedures, the risks and benefits of participation, and the extra credit policy. All participants were clearly advised of the voluntary nature of participation and instructed of their rights to omit any objectionable question and/or to cease participating at any time. Research booklets were then distributed with a reminder to read all instructions carefully and to refrain from providing a name anywhere in the booklet. Research booklets were completed and returned to the experimenter.

To mitigate possible overload and order effects, the measures in the research booklets were counterbalanced; so, each survey was presented in each possible position (1st through 5th) an equal number of times. Thus, all measures were equally likely to be incomplete or completed without regard to the research booklet content order.

Research Design

Multivariate Analysis of Variance

A 2 x 3 x 4 between-subjects factorial MANOVA with unequal cell sizes was used in the analysis of the data. Overall aggression, physical aggression, verbal aggression, anger, hostility, and emotional intelligence were examined in relation to the levels of the design. This design produced 33 means that could be compared (Figure 2).

		M	F	A	U
Men	Low				
	Mod				
	High				
Women	Low				
	Mod				
	High				

M = Masculine
F = Feminine
A = Androgynous
U = Undifferentiated

Figure 2. Graphical Representation of the 2 x 3 x 4 Factorial Design

Data were analyzed by a total of 7 *F* tests: three main effects, one 3-way interaction, and three 2-way interactions (Table 1). The assumptions for this design, including interval/ratio level data, normal distribution of the dependent variables, homogeneity of variance, and random selection, were considered. Random selection was not performed; rather, a convenience sample was used, violating the assumption of random sampling.

Table 1

Source Table for the 2 x 3 x 4 Factorial Design

Source Table		
Main Effects	Gender	F
	Gender Role	F
	Gender Stress	F
Interactions	Gender x Gender Role x Gender Stress	F
	Gender x Gender Role	F
	Gender x Gender Stress	F
	Gender Role x Gender Stress	F

The Roy-Bargman step-down analysis was used to analyze the unique contribution of each independent variable to the observed variance in the dependent variables (Tabachnick & Fidell, 2001). The Roy-Bargman test was chosen because it accounts for correlations in the dependent variable(s), holding the contribution of each related dependent variable constant while examining

the contributions of the independent variables. Games Howell post hoc procedures were

employed to analyze any significant main effects of gender-role identity or gender-role stress,

and Tukey's HSD was used to perform post hoc comparisons of significant interactions.

Univariate Analysis of Variance

Total scores on the aggression questionnaire are a composite of the scores from its four

subscales, making it linearly dependent with those scales. This produces singularity among the

dependent variables, violating one of the assumptions for the MANOVA analysis. Therefore,

total aggression scores were explored in a separate univariate analysis of variance.

Regression Analysis

After the MANOVA analysis, emotional intelligence scores were categorized into low,

average, and high based on a sample dependent tertiary split. This new categorical variable was

then entered into a regression equation, along with the gender variables, to determine if

emotional intelligence provided a distinctive contribution to the variance in the aggression

scores.

CHAPTER 3

RESULTS

A 2 x 3 x 4 between subjects multivariate analysis of variance was performed on physical

and verbal aggression, anger, and hostility, all related to aggression, and another dependent

variable, emotional intelligence, which was projected to be negatively correlated with the

aggression variables. Independent variables included sex, gender-role identity, and gender-role

stress. Issues relating to unequal cell sizes and missing data were evaluated and resolved in the

presentation that follows. Assumptions for multivariate normality, linearity, outliers,

homogeneity of variance-covariance matrices, homogeneity of regression, and multicollinearity

and singularity were also tested following the guidelines laid out by Tabachnick and Fidell

(2001).

Evaluation of Assumptions

Missing Data

The initial step was to eliminate any cases that were missing data for one or more entire

surveys. Out of 455 survey packets completed, six cases were deleted for this reason, leaving 449

cases for the final analysis. Of the 449 cases left in the analysis, several were missing values for

some survey items. In order to retain and analyze all 449 participants as complete cases, a

regression technique was used to estimate the missing values. The linear trend of the

participants' responses at the point of the omitted response was used to predict the missing value.

As all reverse scored items had been transformed at this point in the analysis, it was judged that

the best estimate for these omitted items was this estimate from the linear trend of the nearby

points. For categorical variables with missing information, a category of "no response" was

created to complete the data set and to analyze possible trends in the types of personal

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information that participants failed to disclose. Analysis was carried out with both the complete

data set and the data with missing values, and it was determined that, aside from Ns, the results

from the complete data set were almost exactly the same as the results from the missing data set.

Therefore, the complete data set was used for the remainder of the analysis. Both data sets were

retained for permanent record.

Cell Size

Cell size was a concern going into this analysis, as it was realized that certain cells would

have few participants (e.g. feminine men with high gender-role stress). However, MANOVA is

robust with regard to unequal and small sample sizes, so long as the smallest cell has more

participants than dependent variables. As expected, the cell associated with feminine men with

high gender-role stress fell short of this goal, as did the cell related to feminine men with

moderate gender-role stress. The MANOVA analysis consisted of five dependent variables. Only

four participants met the requirements for the high stress, feminine men cell, and only five

participants met the requirements for the moderate stress, feminine men cell. Due to this

problem, homogeneity of variance-covariance matrices was affected, and will be discussed in

more detail. Because this problem only affected two out of 24 cells in the design, it was

reasonable that the analysis was still valid if certain precautions, such as using more stringent

statistics, were taken. Pillai's Trace was used as the criterion for both the multivariate main

effects and the interaction effects, as it provides the most conservative alpha levels of the

multivariate statistics. Games-Howell post hoc tests were employed to test for main effects. It

was felt that any inflation in alpha rates due to the inadequate size of these cells would be

compensated for by the use of these procedures (Tabachnick & Fidell, 2001). Considering the

small percentage of the sample these cells represents (0.89% and 1.11%, respectively), it was

judged that further data collection, even with extensive efforts, would only add one or two participants to these groups, which would unlikely affect the results but would further increase the discrepancies between the number of participants in these versus other cells in the design.

Multivariate Normality

Examination of the mean, median, skewness values, and histograms indicated that multivariate normality was not violated. Mean and median values were similar, considering the range, across all dependent variables. Skewness values were negligible, with none being higher than 1.0, and they were roughly the same across variables. Table 2 provides relevant information for each dependent variable.

Table 2

Mean, Median, and Skewness Values for All Dependent Variables

	Emotional Intelligence	Total Aggression	Physical Aggression	Verbal Aggression	Anger	Hostility
Mean	119.58	69.59	20.82	13.81	15.29	19.66
Median	121.00	67.00	20.00	14.00	14.00	20.00
Skewness	-0.97	0.56	0.64	0.29	0.75	0.36

These results indicated that the highest level of skewness was for the emotional intelligence scores at -0.97, but the distance between the mean and the median was only 1.42, with the range of scores equaling 123. This was considered to be an inconsequential difference. Skewness values for all aggression variables were negligible, ranging in value from 0.29 to 0.75, and were similar across each of the subscales.

Visual inspection of the normal curve is always helpful in determining normality when skewness values are small, and histograms with the normal curve superimposed are provided in Figure 3. Graphical representation provided additional certainty to the normality of these

variables. Skewness seemed to be caused by a very small number of outliers, and the majority of

participants were normally distributed on each variable.
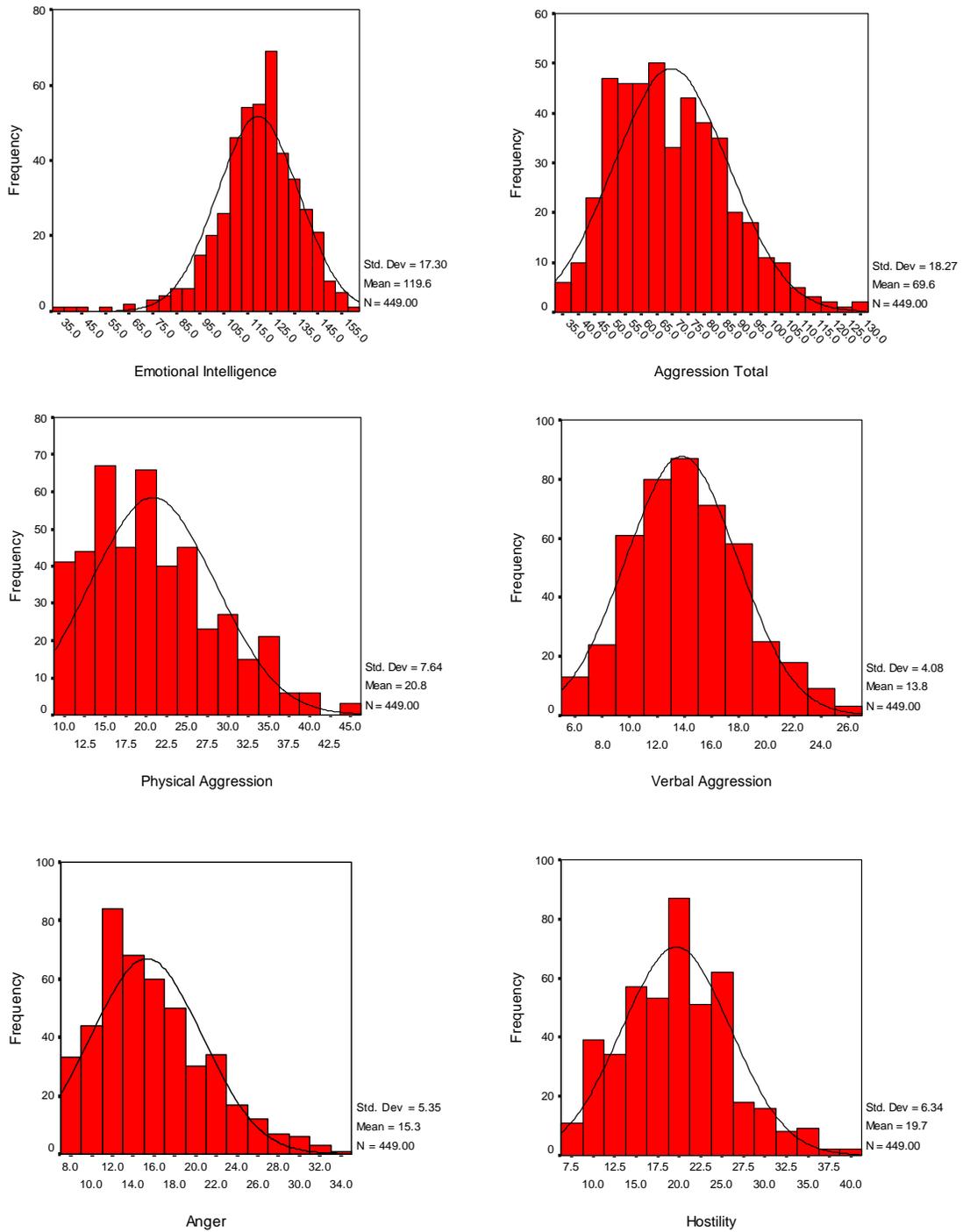
Figure 3. Distributions of the Dependent Variables

Linearity and Multivariate Outliers

Linearity of the dependent variables can be assumed when all variables have a reasonable normal distribution of scores. Examination of scatterplots revealed the expected linear trends among the variables, with emotional intelligence having a negative linear relationship with aggression, and subscales of the aggression questionnaire having moderate positive relationships. Figure 4 provides a representative sample of these linear combinations, although all are not presented here due to the number of possible combinations.
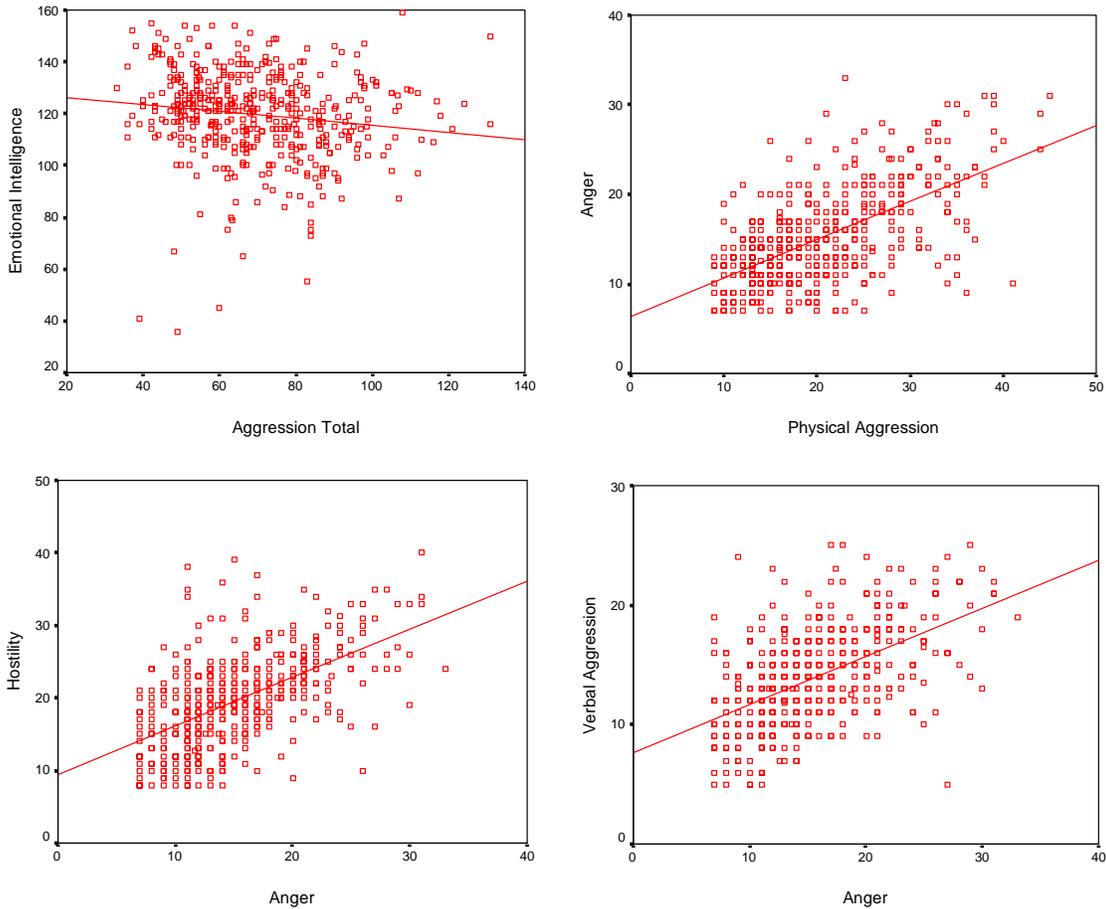
Figure 4. Linear Relationships between Select Dependent Variables

Mahalanobis distance values were calculated across all independent variables. No multivariate outliers were detected at $\alpha = .001$ for the levels of sex, gender-role, or gender-role stress. The Mahalonobis distance statistic produced the ten most outlying cases for each group, and scrutiny of these cases revealed no cases too extreme to be tolerated.

Homogeneity of Variance-Covariance Matrices

As previously discussed, the presence of a cell or cells that do not have more participants than dependent variables can affect the overall homogeneity of variance calculations. Thus, this data set produced a significant result for homogeneity of variance, *Box's M = 487.03, p < .001*, violating this assumption. However, MANOVA is robust to violations of cell size, when the violations are few, and can still be interpreted using more stringent statistics, such as the Pillai's Trace criterion for the multivariate effects and Games-Howell for the post hoc analysis.

Homogeneity of Regression

Roy-Bargman stepdown analysis uses the average regression to adjust for the covariates at every step of the analysis. Thus, in order for this analysis to be interpretable, the regression between the covariates and dependent variables in one group needs to be similar to the regression in the other groups; in other words, one must have homogeneity of regression. Analysis revealed that this assumption was met for this data set at every step of the analysis. For the first step of the analysis the physical aggression dependent variable was held constant, *F = .86, p = .522*. In the second step, the both physical and verbal aggression were held constant, *F = 1.03, p = .429*. At the third step, physical and verbal aggression, as well as anger was held constant, *F = 1.32, p = .109*. At the final step, all of the aggression variables were held constant while the effects of the independent variables on emotional intelligence were evaluated, *F = .95, p = .574*. Based on the

results of this analysis, it was determined that this assumption had not been violated and that the Roy-Bargman stepdown analysis was fully interpretable.

Multicollinearity and Singularity

*S*ingularity can occur in a data set whenever one dependent variable is a linear combination of the others. Therefore, in order to maintain this assumption, the total aggression score was not included in the multivariate analysis because it was nothing more than a combination of its subscales, but was rather analyzed in a separate univariate analysis of variance. Multicollinearity can occur when two or more dependent variables are very highly correlated (at 0.90 and above). Examinations of the correlations between the dependent variables revealed that the highest correlations were between anger and hostility, $r = 0.569, p = .000$, and anger and physical aggression, $r = 0.567, p = .000$. These values fall well within the moderate positive range at which MANOVA functions best. Another measure of multicollinearity is analysis of the log determinant for the pooled covariance matrix of dependent variables. When multicollinearity has been violated, this determinant is a number close to zero. For these data, the log determinant of the pooled covariance was 17.84, which is well away from zero, providing further assurance that this assumption had not been violated.

<div align="center">

Multivariate Analysis of Variance

</div>

Multivariate Tests

Using the Pillai's Trace criterion for comparison, the combined independent variables were found to be significantly related to the combined dependent variables, $F(5, 425) = 16.90, p < .001$. Analysis of the main effects for each of the independent variables on the combined dependent variables revealed significance across all variables: for sex, $F(5,421) = 13.33, p < .001$; for gender-role identity, $F(15,1269) = 10.65, p < .001$; for gender-role stress, $F(10, 844) =$

4.63, p < .001. For the combined dependent variables, there was a significant interaction between sex and gender-role identity, *F(15, 1269) = 1.90, p = .019*, and between sex and gender-role stress, *F(10, 844) = 2.72, p = .003*. For the combined dependent variables, there was no significant interaction between gender-role identity and gender-role stress or for the three-way interaction.

Main Effect of Sex

The multivariate analysis revealed that the main effect of sex was only significant for physical aggression, *F (1, 425) = 41.78, p < .001*, and emotional intelligence, *F(1, 425) = 6.57, p = .011*. There were no significant effects for sex on the verbal aggression, anger, or hostility subscales. Table 3 provides the *F* values and significance levels for all dependent variables.

Table 3

Univariate Fs for the Main Effect of Sex

Source	Dependent Variable	df	Mean Square	F	Sig.
SEX	Emot. Intel.	1.00	206.41	6.57	0.01
	Physical	1.00	1090.78	41.78	0.00
	Verbal	1.00	2.78	1.15	0.28
	Anger	1.00	0.02	0.14	0.71
	Hostility	1.00	49.87	0.01	0.91
ERROR	Emot.Intel.	425.00	246.71		
	Physical	425.00	49.64		
	Verbal	425.00	14.60		
	Anger	425.00	26.10		
	Hostility	425.00	36.10		

Comparison of the means for each group showed that men scored significantly higher on physical aggression than did women, and that women scored significantly higher on emotional intelligence than did men. Means and standard deviations for both sexes on all dependent variables are provided in Table 4, and graphical representation of the range of scores is presented in Figure 5.

Table 4

Means and Standard Deviations for Men and Women on All Dependent Measures

	Men		Women	
	M	SD	M	SD
Emot. Intel	117.11	17.04	121.04	17.31
Physical	23.62	7.42	19.17	7.30
Verbal	14.06	3.87	16.67	4.19
Anger	15.41	5.41	15.22	5.32
Hostility	19.62	6.09	19.69	6.49
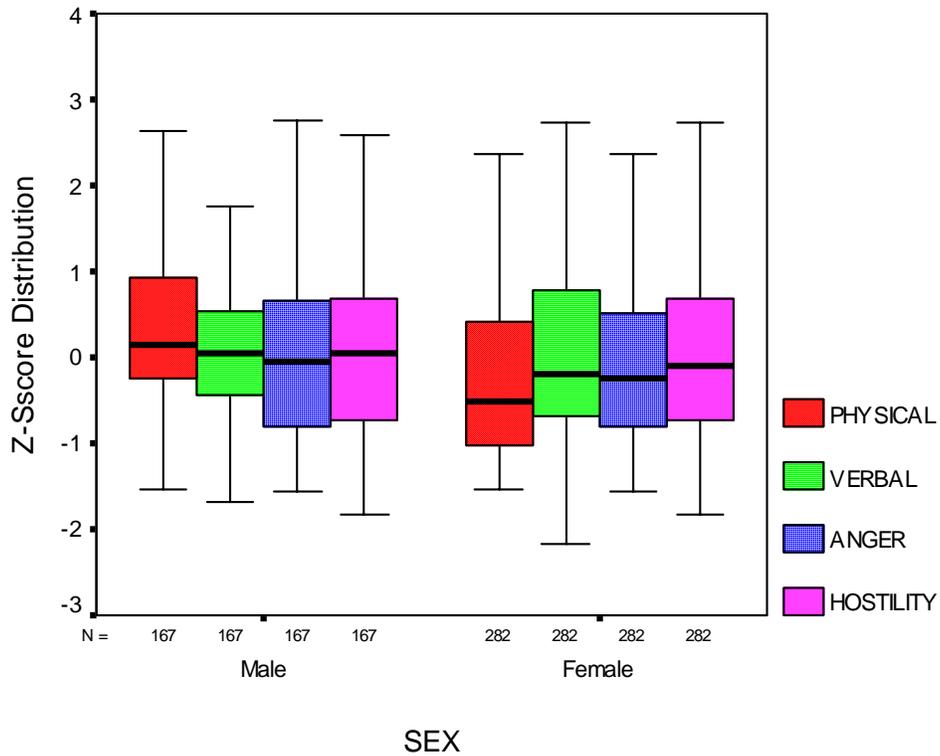
Figure 5. Z-Score Distributions for All Aggression Measures for Both Sexes

These statistics illustrate that, for this sample, on the basis of sex alone, men and women are very similar in verbal aggression, anger, and hostility. Figure 6 provides visual representation of the significant effects.
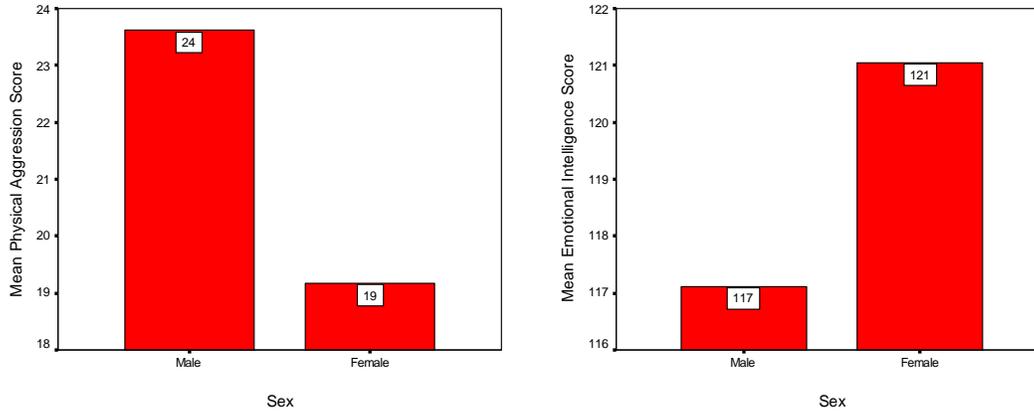
Figure 6. Mean Physical Aggression and Emotional Intelligence Scores between the Sexes

Following analysis of the significant main effect, Roy-Bargman stepdown analysis was conducted to evaluate the contribution of sex to the variance observed in the dependent variables, when the variance accounted for by the other dependent variables is held constant. Analysis indicated that there is an effect on physical aggression scores due to sex, *F(1, 425) = 41.78, p < .001*. When the effects of physical aggression are held constant, there is no effect for sex on the verbal aggression variable, *F(1, 424) = 1.08, p = .299*. However, when both physical and verbal aggression score are entered as covariates, there is a significant effect for anger that is accounted for by sex, *F(1, 423) = 16.70, p < .001*. Again, when the pooled variance of the physical, verbal, and anger scores are held constant, there are no gender differences for hostility scores, *F(1, 422) = .82, p = .366*. When all of the aggression variables are held constant, sex is significantly related to emotional intelligence, *F(1, 421) = 4.25, p = .04*.

Main Effect of Gender-Role Identity

Gender-role identity produced significant relationships with all of the dependent variables. For the gender-role effect on emotional intelligence, *F(3, 425) = 27.66, p < .001*; for gender-role and physical aggression, *F(3, 425) = 10.28, p < .001*; for gender-role and verbal aggression, *F(3,*

425) = 16.46, p < .001; for gender-role and anger, *F(3, 425) = 7.54, p < .001*; and for gender-role and hostility, *F(3, 425) = 7.42, p < .001*. A summary of these data is provided in Table 5, and visualization of the range of scores for each gender-role category is presented in Figure 7.

Table 5

Univariate Fs for the Main Effect of Gender-Role Identity

Source	Dependent Variable	df	Mean Square	F	Sig.
GEN_ROL	Emot. Intel.	3.00	4737.66	19.20	0.000
	Physical	3.00	324.14	6.53	0.000
	Verbal	3.00	120.06	8.22	0.000
	Anger	3.00	116.32	4.46	0.004
	Hostility	3.00	144.33	4.00	0.008
ERROR	Emot.Intel.	425.00	246.71		
	Physical	425.00	49.64		
	Verbal	425.00	14.60		
	Anger	425.00	26.10		
	Hostility	425.00	36.10		
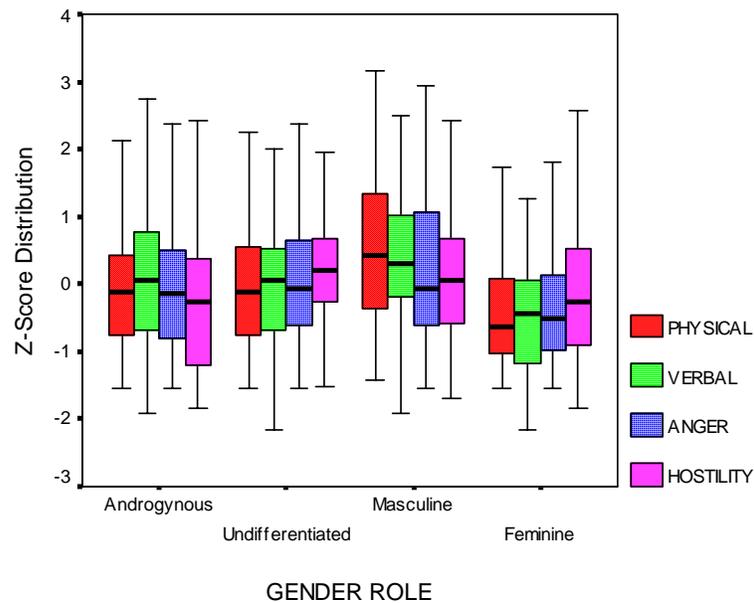
Figure 7. Z-Score Distributions for All Aggression Measures across the Categories of Gender-Role Identity

Roy-Bargman stepdown analysis revealed that physical aggression scores were significantly related to the levels of the gender-role variable, $F(3, 425) = 10.28, p < .001$. After holding the effects of physical aggression constant, verbal aggression was still significantly related to gender-roles. After adjustment for the physical and verbal aggression scores, there was no significant effect between gender-role and anger, $F(3, 424) = 1.24, p = .295$, suggesting that all of the variance found in the anger scores had been previously accounted for in the physical and verbal scores. However, after adjustment for physical, verbal, and anger, hostility could still be predicted by gender-role identity, $F(3, 422) = 8.91, p < .001$, and after correction for all of the variance accounted for by the aggression subscales, emotional intelligence was significantly related to the gender-role variable, $F(3, 421) = 23.38, p < .001$.

To analyze the significant effects of gender-role identification on each dependent variable, Games-Howell post hoc procedures were performed. Games-Howell was chosen as the appropriate post hoc procedure since the assumption for homogeneity of variance was not met for the planned analysis, and Games-Howell provides a more stringent statistical criterion in order to help protect against inflated Type I error rate. A summary of the means and standard deviations that were analyzed in all of the post hoc comparisons is provided in Table 6.

Table 6

Means and Standard Deviations for All Dependent Measures across Gender-Role Categories

	Masculine		Feminine		Androgynous		Undifferentiated	
	M	SD	M	SD	M	SD	M	SD
Emot. Intel	115.84	16.95	122.60	15.96	129.46	16.16	111.72	14.79
Physical	24.53	8.35	17.78	6.67	20.52	7.25	20.67	7.01
Verbal	15.43	4.06	11.81	3.61	14.48	4.21	13.60	3.66
Anger	16.89	5.71	13.57	4.70	15.14	5.45	15.57	5.09
Hostility	20.41	6.58	18.59	6.22	18.11	6.69	21.24	5.49

For the effect of gender-role on emotional intelligence, post hoc analysis indicated that, for this sample, androgynous individuals were significantly higher on emotional intelligence scores than all other gender-role categories. Between androgynous and undifferentiated, $MD = 17.74$, $p < .001$; between androgynous and masculine, $MD = 13.62$, $p < .001$; and between androgynous and feminine, $MD = 6.86$, $p = .01$. Feminine individuals also scored significantly higher in emotional intelligence than those who identified themselves as undifferentiated, $MD = 10.88$, $p < .001$, and also masculine oriented participants, $MD = 6.76$, $p = .02$. The nature of this relationship can be seen in Figure 8.
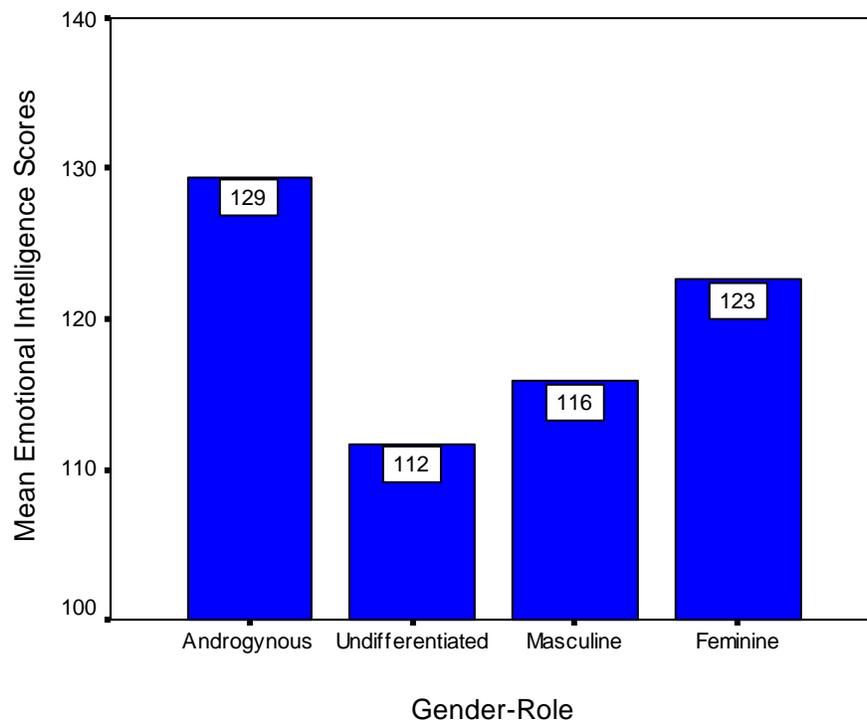
Figure 8. Mean Emotional Intelligence Scores across the Categories of Gender-Role Identity

Analysis of the significant relationships among gender-role categories and physical aggression revealed that participants who identified themselves as masculine were significantly

higher in physical aggression than all other gender-role groups. For masculine and androgynous, *MD = 4.01, p = .002*; for masculine and undifferentiated, *MD = 3.86, p = .001*; and for masculine and feminine, *MD = 6.75, p < .001*. Results also indicated that feminine participants had significantly lower levels of physical aggression than both androgynous individuals, *MD = - 2.74, p = .022*, and undifferentiated persons, *MD = -2.89, p = .008*. Graphical representation of this relationship can be seen in Figure 9.
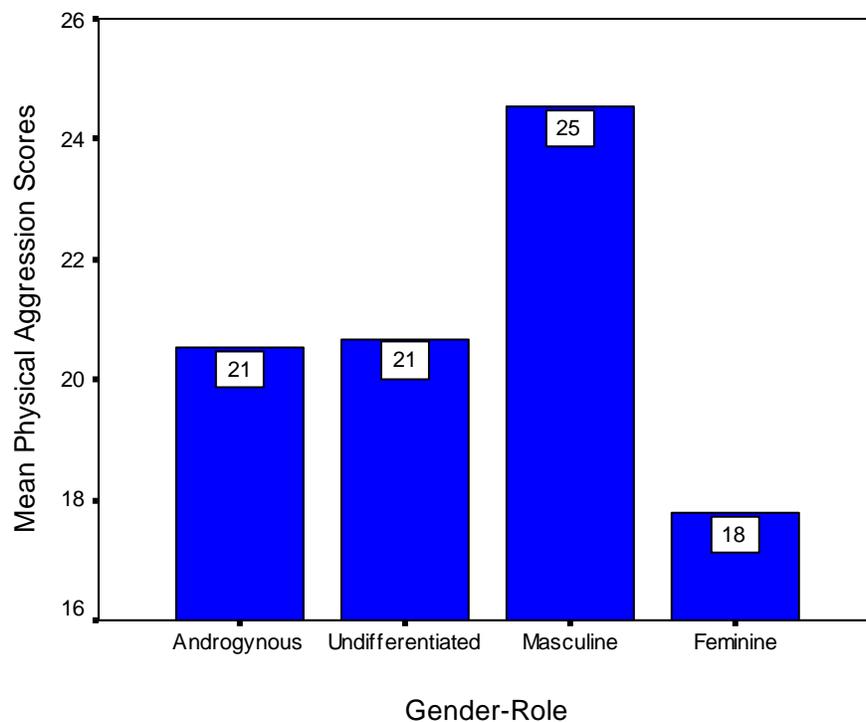
Figure 9. Mean Physical Aggression Scores across Gender-Role Categories

The effects of gender-role on verbal aggression were also analyzed. Results suggested that feminine individuals had the lowest levels of verbal aggression, scoring significantly lower than all other gender-role categories. Comparing feminine participants to androgynous, *MD = -2.67, p < .001*; for the comparison between feminine and undifferentiated individuals, *MD = -1.78, p =*

.001; and contrasting the feminine and masculine gender-roles, *MD = -3.62, p < .001*. Masculine individuals also had significantly higher levels of verbal aggression than undifferentiated persons, *MD = 1.83, p = .003*. The relationship between verbal aggression scores and gender-role categories is displayed in Figure 10.
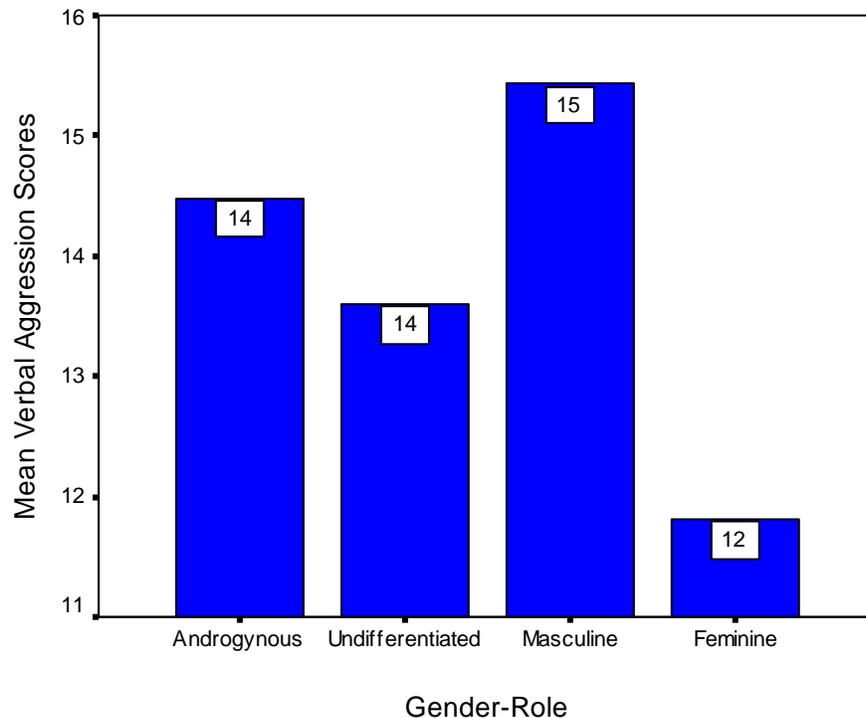
Figure 10. Mean Verbal Aggression Scores for the Levels of Gender-Role Identity

The only significant differences found upon the analysis of anger were that both masculine and undifferentiated participants had significantly higher levels of anger than feminine individuals. Between masculine and feminine, *MD = 3.32, p < .001*; and between undifferentiated and feminine, *MD = 2.00, p = .01*. Graphical representation of this relationship is provided in Figure 11.
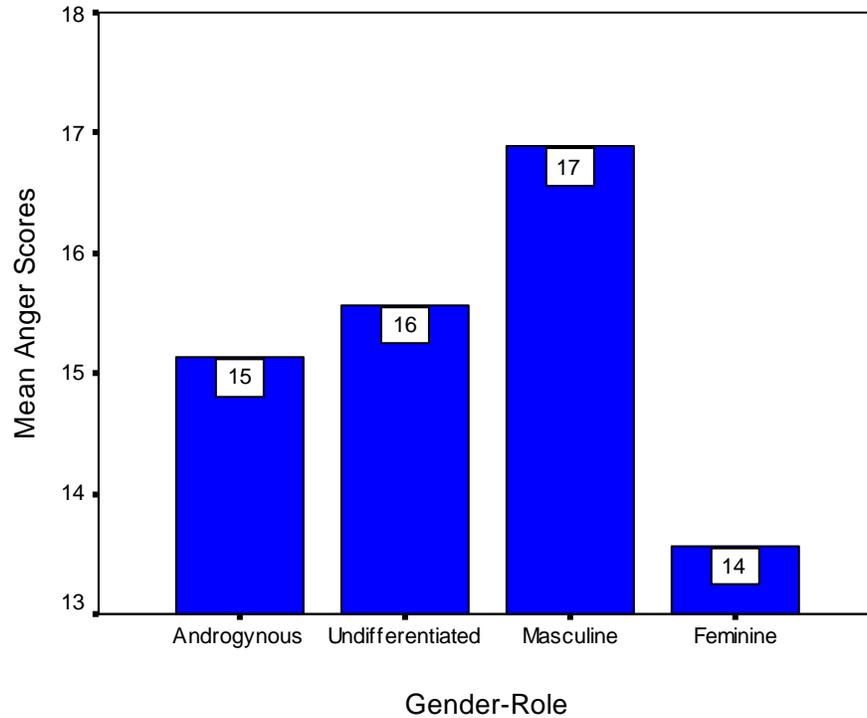
Figure 11. Mean Anger Scores for the Levels of Gender-Role Identity

The final post hoc comparison for the gender-role variable investigated its relationships with hostility scores. Results implied that undifferentiated individuals have significantly higher levels of hostility than both androgynous and feminine participants. Comparing undifferentiated to androgynous, the *MD = 3.13, p = .001*; and undifferentiated with feminine yielded a *MD = 2.65, p = .004*. The difference between masculine and androgynous individuals approached significance, *MD = 2.30, p = .06*, with masculine individuals having higher levels of hostility than androgynous persons. Figure 12 provides the mean hostility scores for each level of the gender-role variable.
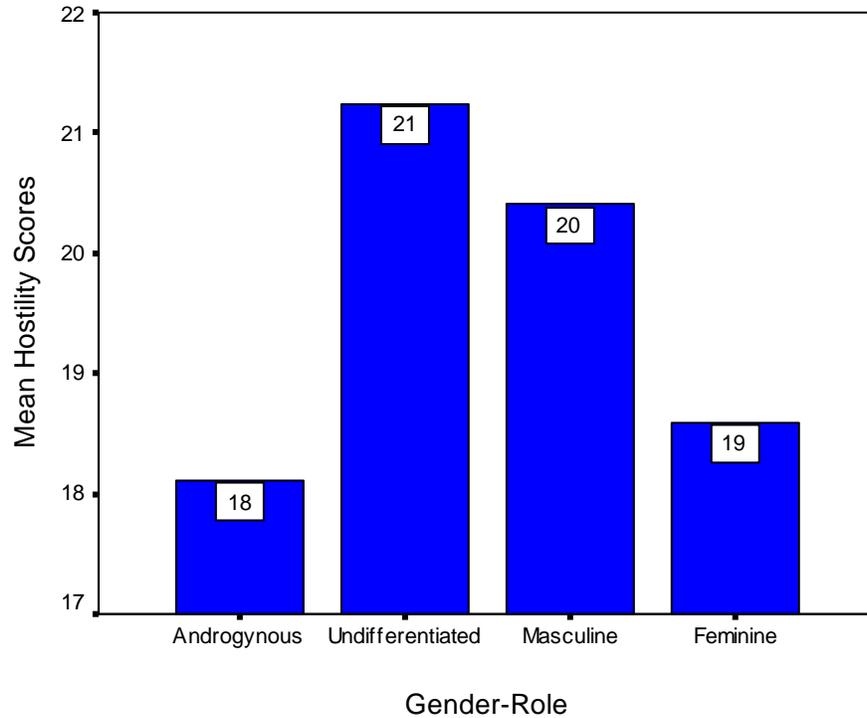
Figure 12. Mean Hostility Scores for Each Category of Gender-Role Identity

Main Effect of Gender-Role Stress

The main effect of gender-role stress revealed significant contributions to all of the aggression variables but did not significantly relate to emotional intelligence. Results indicated that for the relationship of gender-role stress with physical aggression, *F(2, 425) = 8.22, p = .000*; for gender-role stress and verbal aggression, *F(2, 425) = 7.57, p = .001*; for gender-role stress and anger, *F(2, 425) = 13.16, p < .001*; and for gender-role stress and hostility, *F(2, 425) = 14.81, p < .001*. A complete summary of the main effects statistics is presented in Table 7. The distributions of the dependent variables across the levels of gender-role stress are displayed in Figure 13.

Table 7

Univariate Fs for the Main Effect of Gender-Role Stress

Source	Dependent Variable	df	Mean Square	F	Sig.
GRS_CAT	Emot. Intel.	2.00	71.35	0.30	0.749
	Physical	2.00	408.09	8.22	0.000
	Verbal	2.00	110.49	7.57	0.001
	Anger	2.00	343.54	13.16	0.000
	Hostility	2.00	534.54	14.81	0.000
ERROR	Emot.Intel.	425.00	246.71		
	Physical	425.00	49.64		
	Verbal	425.00	14.60		
	Anger	425.00	26.10		
	Hostility	425.00	36.10		
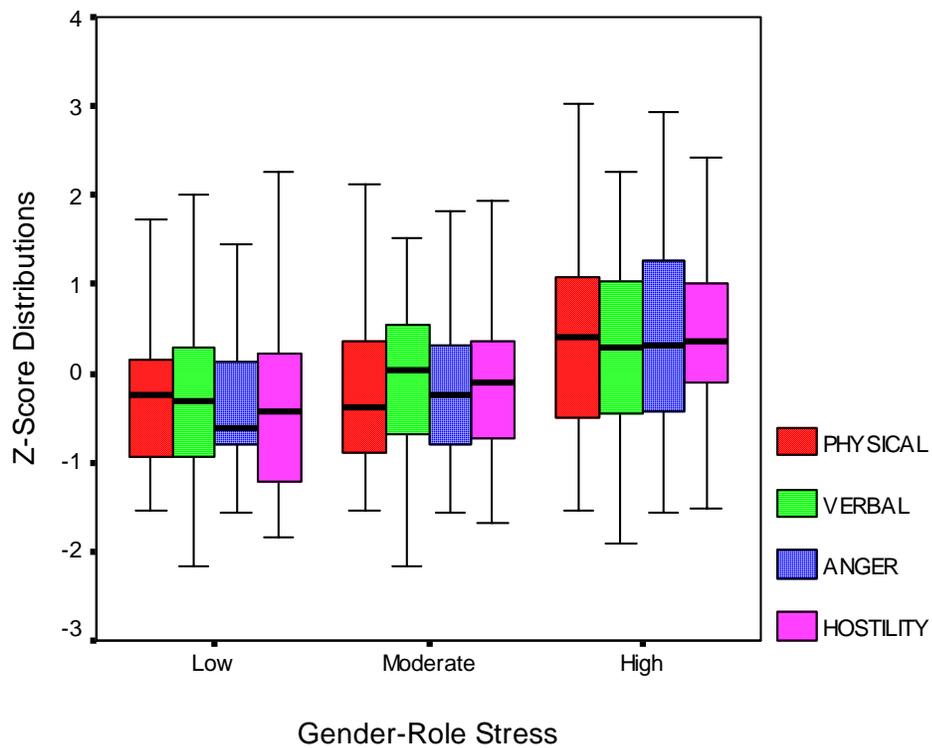
Figure 13. Z-Score Distributions for All Aggression Measures across the Levels of Gender-Role Stress

To determine which dependent variables were affected by the gender-role stress variable, Roy-Bargman stepdown analysis was conducted. Analysis revealed that all of the dependent variables were significantly affected by gender-role stress, even when the variance associated with the other dependent variables was held constant. In other words, even when the degree to which the dependent variables are measuring the same thing is eliminated, all variables were still influenced by gender-role stress. The stepdown statistics for each dependent variable are provided in Table 8.

Table 8

Roy-Bargman Stepdown Statistics for Gender-Role Stress

Variable	Stepdown F	Hypoth. DF	Error DF	Sig.
Physical	5.32	2.00	425.00	0.005
Verbal	4.66	2.00	424.00	0.010
Anger	4.89	2.00	423.00	0.008
Hostility	5.46	2.00	422.00	0.005
Emot. Intel.	2.94	2.00	421.00	0.054

Again, the significant effects of gender-role stress on the dependent variables were analyzed using the Games-Howell post hoc procedure. Due to the nonsignificant relationship found in the multivariate analysis, emotional intelligence was not interpreted. The means and standard deviations associated with gender-role stress are presented in Table 9.

Table 9

Means and Standard Deviations for Dependent Variables across Levels of Gender-Role Stress

	Low		Moderate		High	
	M	SD	M	SD	M	SD
Emot. Intel	118.48	20.55	117.46	15.84	121.66	16.21
Physical	20.50	7.24	19.71	7.01	21.78	8.18
Verbal	12.78	4.27	13.64	3.67	14.49	4.14
Anger	13.54	4.72	14.84	4.52	16.55	5.87
Hostility	17.50	6.51	18.96	5.23	21.31	6.55

Analysis of the relationship of gender-role stress with physical aggression indicated that

individuals who have high gender-role stress have higher levels of physical aggression than those

who have both low and moderate gender-role stress, *MD = 2.07, p = .033*. Figure 14 displays

this relationship.
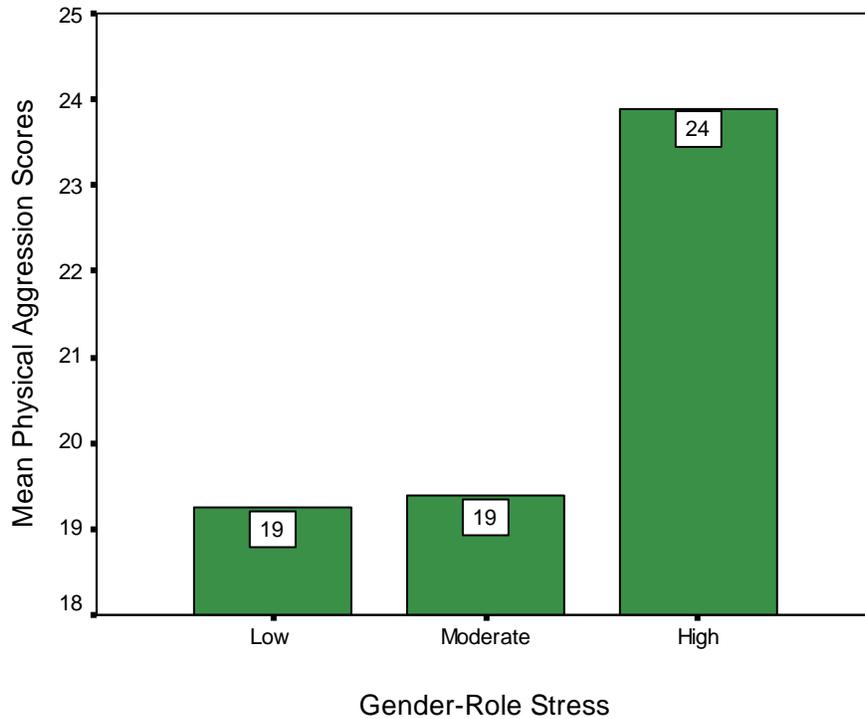
Figure 14. Mean Physical Aggression Scores across Levels of Gender-Role Stress

Individuals with high levels of gender-role stress also reported having higher levels of verbal

aggression than low stress persons, *MD = 1.71, p = .003*. The characteristics of this relationship

are portrayed in Figure 15.
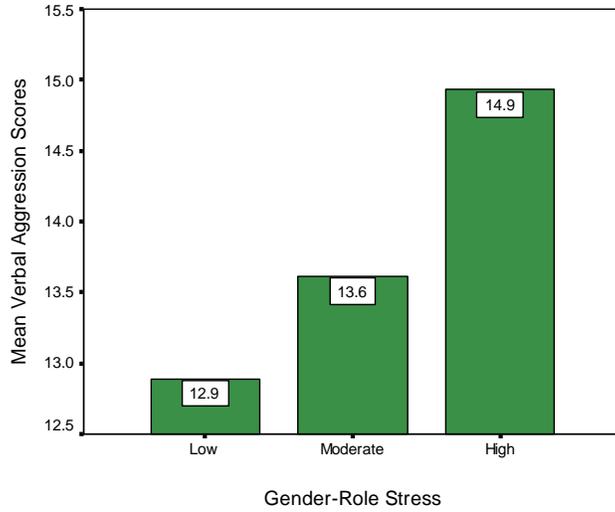
Figure 15. Mean Verbal Aggression Scores across the Levels of Gender-Role Stress

Higher stress also leads to significantly higher levels of anger, higher than both those who are low in gender-role stress, *MD = 3.01, p < .001*, and those who are moderate in gender-role stress, *MD = 1.71, p = .007*. Figure 16 displays the mean anger scores for each level of gender-role stress.
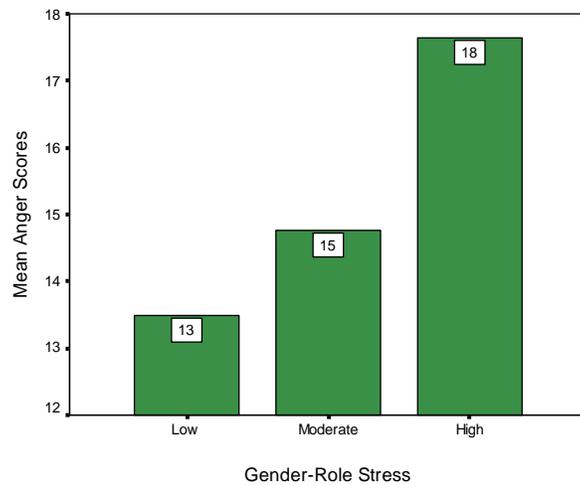
Figure 16. Mean Anger Scores across the Levels of Gender-Role Stress

High levels of gender-role stress are associated with increased hostility. Participants with high gender-role stress scored significantly higher on hostility than participants who were low in gender-role stress, *MD = 3.81, p < .001*, as well as participants who were moderate in gender-role stress, *MD = 2.35, p = .001*. Figure 17 denotes this relationship.
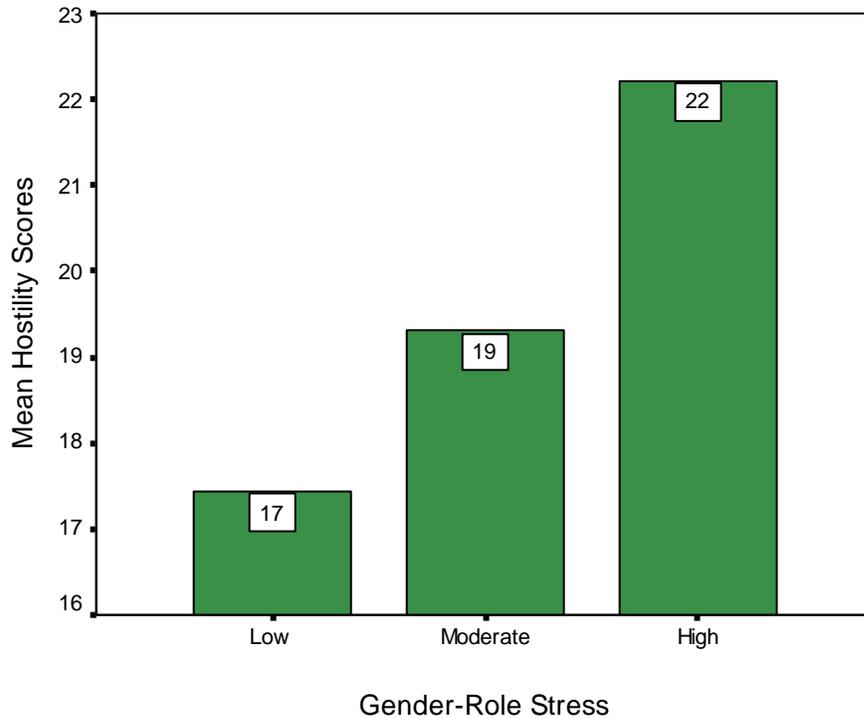
Figure 17. Mean Hostility Scores across the Levels of Gender-Role Stress

Interaction Effects

Interaction effects were explored for the various combinations of the independent variables, and a few significant results emerged. Overall, multivariate tests for the combined dependent variables yielded significant interaction between sex and gender-role, $F_{(15, 1269)} = 1.925, p = .018$, and between sex and gender-role stress, $F_{(10, 844)} = 2.10, p = .022$. Tests of the between-

subjects effects revealed that the source of the significant interaction between sex and gender-role was hostility scores. This interaction is represented in Figure 18.
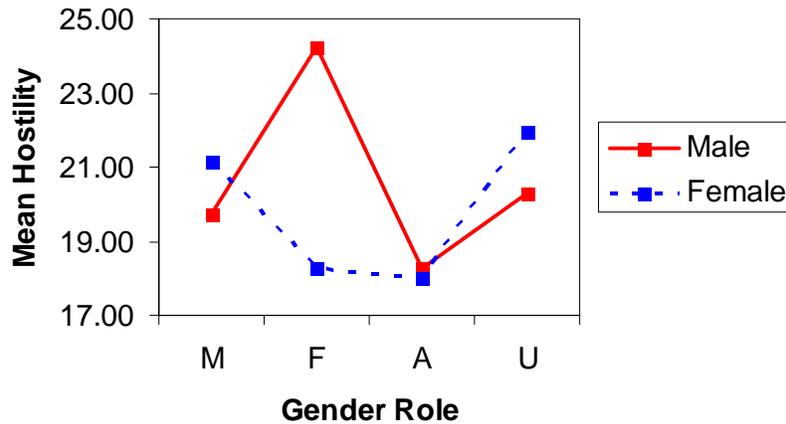
Figure 18. The Interaction of Sex and Gender-Role on Hostility Scores

Tukey post hoc revealed that the significance in hostility scores was due to high scores for undifferentiated females and feminine males. The scores for undifferentiated females were significantly higher than androgynous females (*MD = 3.95, p = .002*), feminine females (*MD = 3.7, p = .003*), and androgynous males (*MD = 3.67, p = .034*). The scores for feminine men were significantly higher than androgynous males *(MD = 5.97, p = .014)*, androgynous females *(MD = 6.25, p = .003)*, and feminine females *(MD = 6.00, p = .005)*. The means that were compared in this analysis are presented in Figure 19.

	M	F	A	U
Male	19.71	24.25	18.28	20.30
Female	21.13	18.25	18.00	21.96

Figure 19. Interaction Means for the Sex X Gender-Role Interaction on Hostility

Investigation into the interaction between sex and gender-role stress indicated that these variables interacted significantly with emotional intelligence scores, *F(10, 844) = 4.18, p = .016*, and physical aggression scores, *F(10, 844) = 4.71, p = .009*. Examination of the emotional intelligence scores indicated that the observed significance was due to the high scores obtained by women with high gender-role stress. These high stress women were significantly higher in emotional intelligence than both women with moderate gender stress (*MD = 7.77, p = .006*) and women with low gender-role stress (*MD = 9.33, p = .011*). Women with high gender stress were also significantly higher in emotional intelligence than men with high gender-role stress (*MD = 11.9, p < .001*). Males with high gender-role stress had the lowest scores on emotional intelligence than any other combination of gender and stress level (*M = 113.25, SD = 16.15*). All of the means analyzed for this interaction are presented in Figure 20. Figure 21 depicts the interaction between sex and gender-role stress on emotional intelligence scores.

	L	M	H
Male	120.40	117.63	113.25
Female	115.82	117.38	125.15

Figure 20. Interaction Means for the Sex X Gender-Role Stress Effect on the Emotional Intelligence Measure
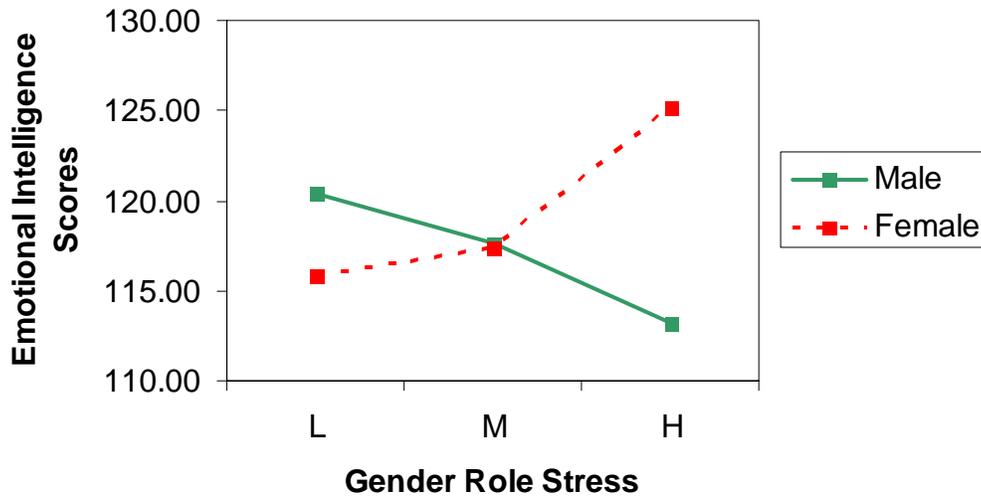
Figure 21. The Interaction between Sex and Gender-Role Stress on Emotional Intelligence

Scores

Tukey HSD analysis was also use to interpret the significant interaction between sex and gender-role stress on physical aggression scores. Analysis revealed that the interaction effect was due to the elevated physical aggression scores of men who were high in gender-role stress. Men with high gender-role stress had significantly higher physical aggression scores than all other possible groups created by the combination of sex and level of stress. High stress men differed from moderate stress men (*MD = 5.78, p = .001*), as well as low stress men (*MD = 5.61, p < .001*). Men with high gender-role stress also differed significantly from all of the female groups, including women with low gender-role stress (*MD = 8.62, p < .001*), moderate stress women (*MD = 8.95, p < .001*), and women with high gender-role stress (*MD = 7.8, p < .001*). Figure 22 illustrates the interaction between sex and gender-role stress on physical aggression scores. The means evaluated in this analysis are depicted in Figure 23.
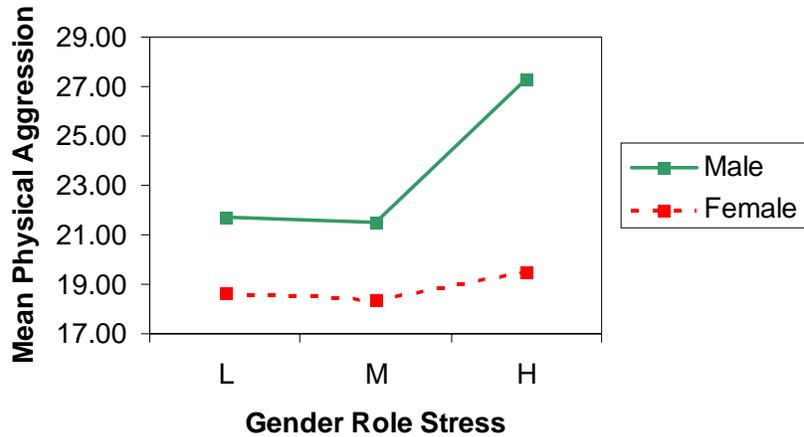
Figure 22. The Interaction Effect between Sex and Gender-Role Stress on Scores of Physical

Aggression

	L	M	H
Male	21.68	21.51	27.29
Female	18.67	18.34	19.49

Figure 23. Means for the Sex X Gender-Role Stress Interaction on Physical Aggression

   An interaction between gender-role identity and gender-role stress on verbal aggression

scores approached significance ($F = 1.90, p = .079$), and it was decide to investigate this

interaction further. The means that were evaluated in the total analysis are available in Figure 24.

Figure 25 depicts this interaction.

	M	F	A	U
Low	13.84	9.70	14.03	12.80
Mod	14.77	12.01	15.07	13.31
High	16.55	12.55	14.40	14.42

Figure 24. Mean Verbal Aggression Scores for the Two-Way Interaction between Gender-Role

Identity and Gender-Role Stress
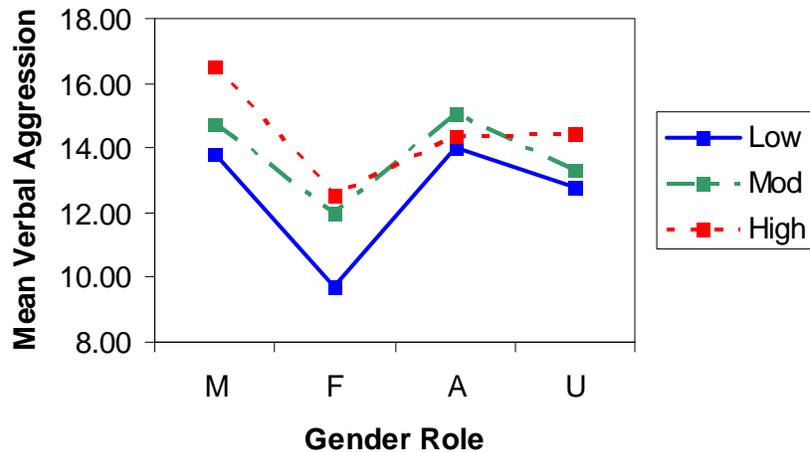
Figure 25. The Interaction between Gender-Role and Gender-Role Stress on Verbal Aggression

Post hoc results revealed that this difference was due to two groups. Masculine participants with high gender-role stress had the highest levels of verbal aggression (M = 16.55), while feminine participants with low gender-role stress had the lowest levels (M = 9.7). The high stress masculine group was significantly higher on reported verbal aggression than the low stress undifferentiated group (MD = 3.75, p = .001), the low stress feminine group (MD = 6.85, p < .001), the moderate stress undifferentiated group (MD = 3.24, p = 002), the moderate stress feminine group (MD = 4.54, p < .001), and the high stress feminine group MD = 4.0, p < .001). Feminine participants with low gender-role stress had the lowest verbal aggression scores, significantly lower than all groups except the moderate stress feminine group, the high stress feminine group, and the low stress undifferentiated group. The mean differences and their significance between the low stress feminine group and all other groups are provided in Table 10.

Table 10

Mean Differences between the Low Stress Feminine Group and All Other Groups

Stress	Gender Role	MD	Sig.
Low	Masculine	-4.14	0.022
	Androgynous	-4.34	0.006
	Undifferentiated	-3.10	0.147
Moderate	Masculine	-5.08	0.000
	Feminine	-2.31	0.574
	Androgynous	-5.37	0.000
	Undifferentiated	-3.61	0.022
High	Masculine	-6.85	0.000
	Feminine	-2.85	0.000
	Androgynous	-4.70	0.000
	Undifferentiated	-4.72	0.183

Univariate Analysis of Variance

Investigation into the main effects of the independent variables and their interactions on the total aggression scores was carried out using a univariate analysis of variance. For the main effect of sex, there was a significant effect, with men scoring significantly higher (*M = 72.71, SD = 17.08*) on overall aggression than women (*M = 67.74, SD = 18.72*). $F(1, 425) = 6.001$, *p = .015*. This effect is depicted in Figure 26.
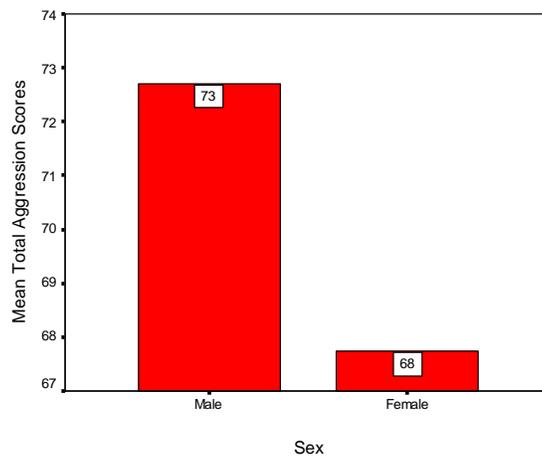
Figure 26. Mean Aggression Scores for Men and Women

For the main effect of gender-role identity, analysis also produced a significant result, $F(3, 425) = 5.955, p = .001$. Games-Howell post hoc tests revealed that masculine individuals have significantly higher overall aggression scores than all other gender-role categories. For the comparison between masculine and androgynous, $MD = 9.01, p = .004$; between masculine and undifferentiated, $MD = 6.17, p = .049$; and between masculine and feminine, $MD = 15.50, p < .001$. In addition, both androgynous and undifferentiated individuals have higher aggression scores than feminine participants, who scored significantly lower than all other groups. For the contrast between androgynous and feminine, the $MD = 6.49, p = .034$; and for the comparison between undifferentiated and feminine, $MD = 9.33, p < .001$. Figure 27 provides the mean aggression scores for each of the gender-role categories.
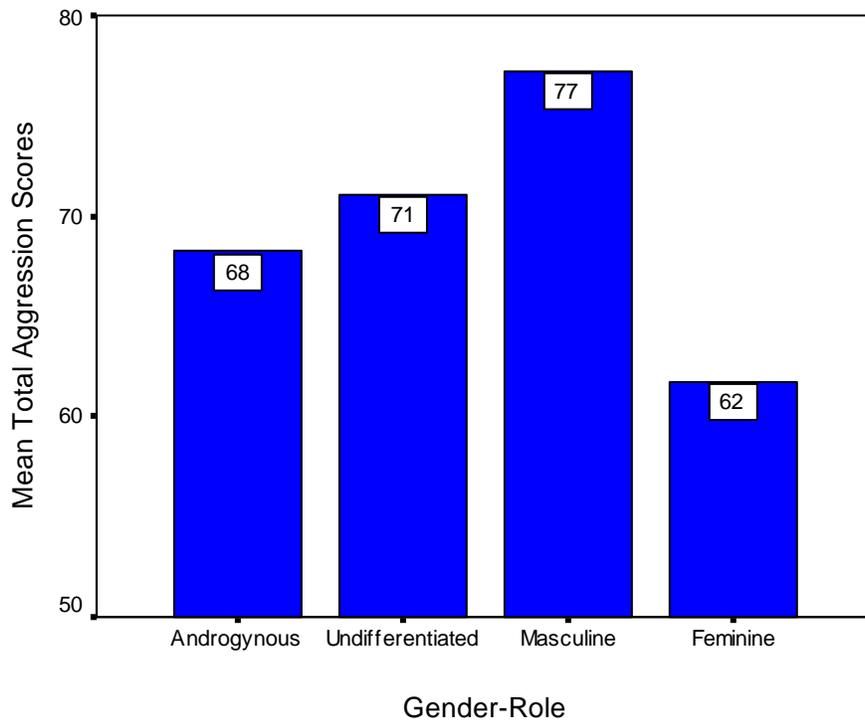
Figure 27. Mean Aggression Scores across Gender-Role Categories

Gender-role stress also produced a significant effect on the total aggression scores, $F(2, 425)$ = 17.51, p <. 001. Post hoc analyses indicated that individuals who are high in gender-role stress have significantly higher aggression scores than those who have moderate gender-role stress (*MD = 6.98, p = .001*) and those who have low gender-role stress (*MD = 9.81, p < .001*). Graphical representation of this relationship is provided in Figure 28.
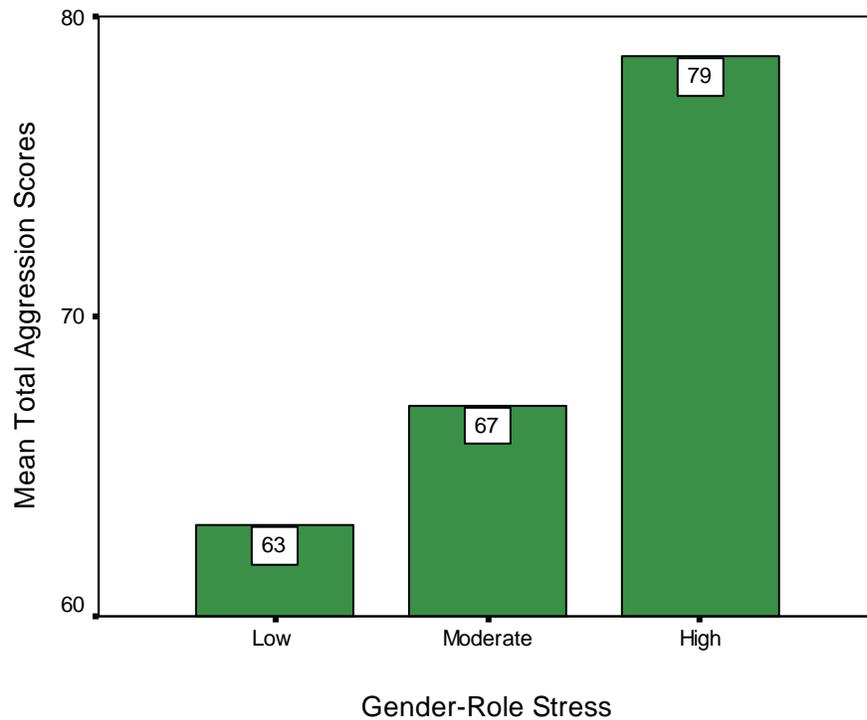
Figure 28. Mean Aggression Scores across Levels of Gender-Role Stress

For the two-way interactions between sex and gender-role, sex and gender-role stress, and gender-role and gender-role stress, no significant effects were detected. The three-way interaction between sex, gender-role, and gender-role stress was also nonsignificant.

Regression Analysis

A multiple regression analysis was performed with measures of aggression (i.e. total aggression, physical aggression, verbal aggression, anger, and hostility) as the dependent variables and sex, gender-role identity, gender-role stress, and emotional intelligence as independent variables. The role of emotional intelligence as a predictor was of primary interest in this investigation. To analyze all of the dependent variables, the regression analysis had to be conducted several times. To combat the inflated Type I error rate associated with multiple analyses, a Bonferoni correction was applied to the alpha level and variables had to reach a probability of less than or equal to .01 in order to be considered significant.

The combination of the gender variables produced a significant regression equation in relation to the total aggression score. Sex ($t = -3.57, p < .001$), gender-role stress ($t = 5.95, p < .001$), and emotional intelligence ($t = -3.63, p < .001$) were all significant predictors of total aggression scores. Gender-role identity did not make a significant contribution to the prediction of total aggression ($t = -1.98, p = .048$).

The combination of predictors also produced significant variation in physical aggression, $F(4, 444) = 15.09, p < .001$. Significant predictors were again sex ($t = -6.45, p < .001$), gender-role stress ($t = 3.419, p = .001$), and emotional intelligence ($t = 3.001, p = .003$). Again, after adjustment for the contribution of all other variables, gender-role identity did not add to the predictive ability of this combination of variables ($t = -1.023, p = .307$).

The only variables that contributed significantly to the variation in verbal aggression scores were gender-role identification (t = -3.41, p = .001) and gender-role stress (t = 4.01, p < .001). Sex (t = -1.49, p = .136) and emotional intelligence (t = .61, p = .545) made no additional

contributions to the prediction. The overall regression equation for verbal aggression was significant, $F_{(4, 444)} = 7.405$, $p < .001$.

Gender-role stress ($t = 5.39$, $p < .001$) and emotional intelligence ($t = -3.443$, $p = .001$) were significant predictors in the regression equation for anger. No additional variation in anger was accounted for by the addition of sex ($t = -.98$, $p = .328$) or gender-role identification ($t = -2.105$, $p = .045$). The overall regression equation for the full model for anger was significant, $F_{(4, 444)} = 10.53$, $p < .001$.

The final analysis revealed that the regression equation for hostility was also significant, $F_{(4, 444)} = 12.34$, $p < .001$. Again, both gender-role stress ($t = 5.713$, $p < .001$) and emotional intelligence ($t = -4.257$, $p < .001$) were significant predictors in this model. No additional variance was accounted for by sex ($t = -.692$, $p = .49$) or gender-role identity ($t = -.489$, $p = .625$).

CHAPTER 4

DISCUSSION

Interpretation of the Results

Main Effect of Sex

In reference to biological sex, it was hypothesized that men would score higher than women on the overall aggression, physical aggression, verbal aggression and anger and that they would score lower on emotional intelligence. Women were expected to have higher scores than men on the hostility scale. These hypotheses were only partially supported. For this sample, men scored significantly higher than women on overall aggression and physical aggression, as expected. Consistent with previous research it was found that men are more physically aggressive (Archer, 2004; Buss & Perry, 1992; Crick & Grotpeter, 1995).

Aside from studies that have examined sex as a product of hormonal levels, most previous research citing sex differences in aggression has based their findings only on participants' response to a question regarding their sex, not taking into account possible mediating variables, such as gender-role, that might account for this phenomenon. Of course, it is entirely possible that the effect that is seen with sex and physical aggression is based purely in biology. However, research into this area that has examined the differences in aggression in relation to hormonal differences has not confirmed this common perception (Book et al., 2001; Ramirez, 2003). Increasing testosterone levels by method of injection has been reported to have no effect on aggression levels (O'Connor et al., 2002), and an 8-year longitudinal study linked high levels of testosterone with prosocial behavior in adolescents (Schaal et al., 1996). While there are some studies that confirm the testosterone-aggression hypothesis (Chance et al., 2000; Maras et al.,

2003), the existence of sound contradictory results suggests that perhaps this relationship is not as strong as once thought.

Also in accordance with predictions, men scored significantly lower on emotional intelligence than women did. Emotional intelligence consists not only of the ability to understand, regulate, and channel one's own emotions but also of the ability to interpret and respond appropriately to others' emotions. Many studies have found that women are more adept at these tasks than are men (Ciarocchi et al., 2000; Schutte et al., 1998), and it has been suggested that people as a whole view emotional intelligence as a feminine trait (Petrides et al., 2004). Petrides and Furnham (2000) reported no significant differences between the sexes in emotional intelligence; and Guastello and Guastello (2003) identified differences between the sexes in emotional intelligence only in the older generation. Among college age students, emotional intelligence was relatively the same for both men and women. Ciarrochi, Chan, and Bajgar (2001) reported that adolescent girls are adept at understanding others' emotions but struggle with regulating their own emotions, but conceivably this finding could be due to the nature of adolescence. Perhaps these differing viewpoints reflect the role of other variables, such as gender-role and gender-role stress, that are active in affecting levels of emotional intelligence, and that affect men and women differently across subcultures. Again, the majority of studies that explored these relationships did not consider other gender-related variables that may relate to these effects.

Buss and Perry (1992) found throughout extensive research that men tend to score higher on the measures of verbal aggression and hostility, as well as physical aggression discussed previously. They also found no significant sex differences in relation to anger. Since then, studies have again produced mixed results. Archer (2004) reported that women show higher

values for anger, while Hubbard (2001) suggested that anger was higher in boys. Crick and

Grotpeter (1995) found that verbal aggression was higher in boys, but Archer (2004) found no

differences between the sexes in verbal aggression. Crick and Grotpeter suggested that girls

display their aggression differently, intending to harm others socially rather than physically.

These types of behaviors could be considered hostile, possibly making a case that women display

more hostility than men; however, Archer found no gender difference, and Buss and Perry

reported an opposite gender effect. Unfortunately, it seems that the results of this analysis do not

provide any assistance in either confirming or denying the existence of these sex differences.

Rather, predicted sex differences in verbal aggression, anger, and hostility were not confirmed,

and no significant results were obtained. As previously postulated, perhaps these aspects of

aggression are affected by gender differences that go beyond biology. Perhaps investigation into

the effects of gender-role identity and gender-role stress may lead to a clearer picture of how

gender, as a whole, not just as a sex, contributes to observed differences in the aggression levels

of men and women.

Main Effect of Gender-Role Identity

Upon analysis of the role of gender identity in the observed differences between men and

women in aggression and emotional intelligence, significant differences were obtained on every

measure. It was hypothesized that individuals with a masculine gender identity would report the

most physical aggression and androgynous individuals, the least. For this sample, masculine

individuals had significantly higher aggression scores than all other gender-roles, supporting the

idea that masculine persons are the most physically aggressive. Contrary to the hypothesis,

feminine individuals reported the lowest levels of physical aggression. Because androgynous

people display a wider variety and greater depth of personality characteristics, it was thought that

these individuals would have more response options available to them and would thus have the lowest levels of aggression. Perhaps the obtained result is due to the socialization of femininity and the possibility that women who are reared with traditional gender values are avidly discouraged from displaying any signs of violence.

Overt aggression, or aggression that is displayed openly, has been identified as being characteristic of men (Crick and Grotpeter, 1996; Weisbuch et al., 1999), and previous studies have linked increased verbal aggression to men (Buss & Perry, 1992). Therefore, masculinity was also hypothesized to be related to higher levels of verbal aggression, and androgynous individuals were expected to have the lowest levels of verbal aggression. This hypothesis was partially supported. Masculine individuals did report significantly more verbal aggression than all other gender-role groups, but this result was only significant when comparing masculine to undifferentiated and feminine participants. Again, contrary to the hypothesis, feminine individuals had the lowest levels of verbal aggression, significantly lower than all other groups. Again, perhaps this is due to a socialization process in the traditional families of some feminine woman, which suggests that proper women do not raise their voices or speak out of turn. It may also be that the reason that androgynous individuals do not differ from masculine individuals is due to an enculturation process as well, and that these individuals are raised in egalitarian homes where children are likely to be encouraged to speak their minds (Garren, 1998).

Concerning anger, again masculine individuals were hypothesized to have the highest levels, and androgynous individuals the lowest. Many researchers have implicated the masculine gender-role as hampering emotional expression and have suggested that anger is one of the few emotions tolerated by the traditional masculine gender-role (Glazer, 1999; Ko, 1999; Pollack, 1998). Increased anger in boys has been observed across a number of age groups (Garner et al.,

1997, Hubbard, 2001; Stapley & Haviland, 1989; Zeman & Shipley, 1996). Confirming previous research results, masculine participants in this study did have the highest levels of anger, although their anger was only significantly different from feminine individuals. Given that feminine women accounted for only 30% of female participants and that 70 % of female participants were not significantly different in anger from masculine participants (17% because they had a masculine gender identity themselves), it is plausible that Buss and Perry (1992) were correct in their observation that there are no gender-related differences in anger. It certainly seems to be the case for the participants of this study. Rather, the differences may be in how overtly anger is expressed. Perhaps the observed differences in the rate at which boys and girls express anger lies in the fact that displays of anger are tolerated in boys (Garner et al.), and girls either find more covert ways to express their anger or keep it inside, failing to express it at all. This would suggest that the feeling of anger is experienced equally by both sexes, but that the expression of anger differs, possibly as a result of gender-role identification.

There has been little investigation into the effect of gender-roles on hostility. Although some research has indicated that men have slightly higher levels of hostility (Buss & Perry, 1992; Woodall & Matthews, 1993), other studies have not observed a gender difference in hostility (Archer, 2004). All of these studies failed to look at gender-role identity as a catalyst in this effect. Femininity has been linked to a number of negative outcomes for women (Morinaga et al., 1993; Silverstein & Blumenthal, 1997), and it was thought that perhaps these outcomes were fueled by hostility that is possibly created by the feeling of being trapped in a particular gender-role. Therefore, it was hypothesized that femininity would relate to high levels of hostility and that androgyny would relate to low levels. For this sample, androgynous individuals did have the lowest levels of hostility, but they were not significantly lower than feminine

individuals. In contrast to the hypothesis, the feminine participants had the second lowest scores on hostility. Undifferentiated persons reported the highest levels of hostility, significantly different from both the androgynous and feminine gender groups but not from the masculine group. Perhaps there is an underlying characteristic related to the undifferentiated personality that produces this effect.

As total aggression is a composite of the subcomponents of aggression, and masculinity was expected to be related to higher levels on three of those components, it was hypothesized that masculinity would also be associated with increased levels of overall aggression, and again, that androgyny would be related to low levels. Masculine individuals did report significantly higher levels of aggression overall than all other groups, supporting the hypothesis, and confirming the majority of research on this topic (Archer, 2004; Buss & Perry, 1992; Murnen et al., 2002). However, once more the feminine gender-role category was associated with the lowest scores, having significantly lower overall aggression levels than all other gender-role groups. Yet again, this could be affected by feminine individuals' socialization to their gender-role, in which passivity is encouraged and overt displays of aggression are discouraged. Indeed, the feminine gender-role has been linked to decreased motivation, depression, somatic problems, and eating disorders (Morinaga et al., 1993, Silverstein & Blumenthal, 1997). It is possible that these symptoms are all side effects of the suppression of negative emotion. Just as the suppression of positive emotion and the expression of negative emotion have been linked to negative outcomes for men with a strong gender-role ideology, it may be that the suppression of negative emotions and the possibly forced expression of positive emotions are equally harmful to the women who feel trapped in their gender-role.

Review of the relationship between gender-role identification and aggression suggests that masculine and feminine gender-roles stress different types of emotional expression. Guastello and Guastello (2003) reported that the predictors of androgyny and high emotional intelligence were similar, and they reported that 30 to 35% of the variance obtained in their participants' emotional intelligence scores was attributable to their gender-role classification according to the BSRI and to their scores on the Sex Role Behavior Scale, indicating that emotional intelligence is influenced by gender-role beliefs. Due to these observed effects, it was hypothesized that masculine participants would have the lowest levels of emotional intelligence and that androgynous individuals would have the highest. However, feminine individuals were expected to have high levels of emotional intelligence as well and were not expected to differ significantly from androgynous persons in this respect. The results indicated that androgynous individuals did have the highest levels of emotional intelligence, significantly higher than all other groups, including the feminine group. This again may be due, in part, to the acculturation of gender-role that a child receives. Egalitarian parents have been found to be positive in their interactions with their children and to encourage freethinking, emotional expressiveness, and tolerance, thus producing more children with androgynous characteristics (Fagot & Leinbach, 1995; Garren, 1998). Androgyny has been linked to a number of positive outcomes such as higher self-esteem and greater adaptability, higher motivation and a greater desire for success, and higher levels of altruism and a greater likelihood of helping others (Morinaga et al., 1993; Senneker & Hendrick, 1983; Witt, 1997). All of these benefits could be conceptually linked to the androgynous individuals' capacity for emotional intelligence, as these children are encouraged to examine their feelings, feel them, and express them in a healthy manner, as well as to recognize the emotions of others, appreciate differences, and deal with emotional situations appropriately.

These abilities would likely carry across a broad range of situations, influencing and increasing the androgynous individuals' behavioral response choices.

As expected, the masculine group had significantly lower levels of emotional intelligence than both the feminine and androgynous groups; unexpectedly, however, they did not differ from the undifferentiated group, which had the lowest scores of all groups. These low scores in emotional intelligence could possibly account for the undifferentiated participants' high levels of hostility and anger, again suggesting that there are definite effects associated with this gender-role category, just as there are with the masculine, feminine, and androgynous categories; but, as yet, these associations have not been thoroughly defined. The masculine individuals' low levels of emotional intelligence did not come as a surprise, as multiple researchers have suggested that the masculine gender-role is associated with a truncated emotional repertoire, as well as a restricted range of expression (Conway, 2000; Goodey, 1997; Jakupcak et al., 2003). Evidence has also suggested that the traditional masculine gender-role stifles positive emotions, such as happiness, hope, and love, and distressful emotions, such as fear, vulnerability, and sadness, but leaves the full range of negative emotions, such as anger, resentment, guilt, and even hate (Conway; Goodey; Jakupcak et al.; Parrot et al., 2002). This phenomenon appears to begin in childhood, and parents restrict their use of emotional language when talking with their sons, sometimes knowingly (Fivush et al., 2000; Garner et al., 1997). Pollack (1998) has referred to this emotional constraint as the "gender straight-jacket," and he and other researchers have attributed the rise in violence among young men to this emotional restriction, arguing that they are not taught how to use or allowed to display appropriate responses to their emotions (Murray, 1999). Pollack was quoted as saying, "When we don't let boys cry tears, some will cry bullets" (Murray). It is plausible that if boys really are not allowed to experience their emotions, this lack

of an outlet for feelings of sadness, hurt, and fear could eventually lead to an explosion of one emotion that masculine men are permitted to express, anger. It is also plausible that if this buildup of emotion did result in an explosion of anger, that it could likely be accompanied by an act of violence.

Main Effect of Gender-Role Stress

Gender-role stress was significantly related to all of the aggression variables; however, in the MANOVA analysis, it provided no significant contributions to emotional intelligence scores. For the effect of gender-role stress on physical aggression scores, it was hypothesized that participants with high levels of gender-role stress would have significantly higher levels of physical aggression. This hypothesis was supported. High gender role stress participants did have significantly higher levels of physical aggression than those with either low or moderate gender role stress. This result supports earlier research that suggested a link between gender-role stress and aggression (Copenhaver, 2000; Eisler et al., 2000; Franchina et al., 2001; Jakupcak, 2003). It is possible that this effect is stimulated by the responding of men who feel pressured to prove their masculinity (Mosher & Tomkins, 1988). As aggression and dominance are believed to be part of the traditional masculine ideal, it seems logical that men who feel societal stress to conform to this ideal would have increased aggressive responding.

Due to the research linking high gender-role stress to overt expressions of aggression (Copenhaver, 2000; Eisler et al., 2000; Franchina et al., 2001; Jakupcak, 2003), for the effect of gender-role stress on verbal aggression, it was thought that individuals with high gender-role stress would also report more verbal aggression than their low and moderately stressed peers. This effect was verified between high stress and low stress individuals but not between high stress and moderately stressed persons. Perhaps this was because women with high gender–role

stress were low in verbal aggression due to their gender-role acculturation, and that the men with high gender-role stress and high levels of verbal aggression did not supersede this effect. Again, the analysis of masculine and feminine gender-role stress as separate variables would likely lead to more revealing results, possibly revealing that high masculine gender-role stress is related to increased verbal aggression, whereas high feminine gender-role stress is associated with decreased verbal aggression.

Research into the effect of gender-role stress on the emotional and cognitive components of aggression, anger and hostility, has been scarce. Therefore, it was felt that this was an exploratory analysis into an area that had not yet been investigated thoroughly, and the direction of the effects were not specified in the hypotheses. It was felt that there would be a significant effect on anger and hostility as a result of gender-role stress, but the type of effect was not specified. Results indicated that high gender role stress is also related to higher levels of anger, significantly higher than both moderate and low gender role stress levels. This same effect was seen for hostility, with the high gender role stress group having significantly higher levels of hostility than both other stress levels. These results suggest that gender-role stress is related to increased intensity in all facets of aggression. It is possible that the high gender-stressed individual would feel anger toward the rules to which they feel subjected by their gender-role, and that these conventions to which they must submit would be related to increased levels of hostility toward their environment.

Similar to the effect found for masculinity, research has suggested that high masculine gender-role stress is related to fear of emotions, and research has linked high feminine gender-role stress to similar negative outcomes, such as intensified shame and guilt, eating disorders, body dissatisfaction, and depression (Efthim, 1997; Gillespie & Eisler, 1992; Martz et al., 1995;

Schmitz-Sciborski, 2001). It was, therefore, hypothesized that high levels of gender-role stress would be associated with lower emotional intelligence when compared to moderate and low levels of gender-role stress. However, this hypothesis was not supported at all. Of course, previous research investigating this relationship has only focused on masculine gender-role stress and its effect on men's emotional intelligence, and this variable encompassed women with high gender-role stress as well. Therefore, it is possible that women with high gender-role stress would be high in emotional intelligence due to their stress to conform to the traditional feminine role which is empathetic, compassionate, and understanding. Additional analysis might reveal that there is an effect for men but not for women. Indeed, interaction analysis between these variables suggested that indeed there is a very strong effect of gender-role stress on emotional intelligence for men but none at all for women, which may account for the nonsignificant differences found here.

Interaction Effects

Interaction effects were approached in an exploratory manner in this analysis, and no firm hypotheses were formulated. It was generally expected that any significant relationships among the variables would be in the specified direction of the hypotheses for the main effects. The results produced several significant interactions.

A significant interaction was found between sex and gender-roles on hostility scores, and analysis revealed that feminine men and undifferentiated females had the highest levels of hostility and that both androgynous groups, men and women, had the lowest levels of hostility. As previously stated, the effect of the undifferentiated gender-role needs further exploration to understand its formation and effects. The other group with high levels of hostility, feminine men, created some interesting questions to which there are no immediate answers. Not, of course,

assuming that all feminine men are homosexual, it is still reasonable to think that the majority of them are. As well, this research was conducted in the south where there are hostile and unaccepting attitudes towards homosexuals. Therefore, it is possible that this relationship is produced as a response to a hostile environment. However, only 17 participants fell into the category of feminine men, and it could also be that there were not enough data to analyze this connection efficiently.

As previously discussed, an interaction emerged between sex and gender-role stress on emotional intelligence scores. Thorough examination of this relationship revealed that females with high gender role stress reported the highest levels of emotional intelligence. It could be that they reported higher levels because they felt feminine gender role stress to have these characteristics and were thus more likely to be affected by social desirability in their responding, or it could be that they really did have higher emotional intelligence, which would still likely be influenced by their level of gender-role stress. As well, in accordance with previous research that equated masculine gender-role stress with fear of emotions and a truncated number of emotions (Conway, 2000; Goodey, 1997; Jakupcak et al., 2003), results indicated that men with high gender-role stress do have the lowest levels of emotional intelligence.

Sex and gender-role stress also interacted significantly on levels of physical aggression. Analysis revealed that men with high gender-role stress have significantly higher levels of aggression than all other groups. This finding strengthens previous research findings that have reported a link between stress to conform to the traditional aggressive masculine gender-role and actual physical aggressiveness (Copenhaver, 2000; Eisler et al., 2000; Franchina et al., 2001; Jakupcak, 2003).

Initial analysis suggested a relationship between gender-role identity and gender-role stress on verbal aggression. Further analysis into this relationship indicated that masculine participants with high gender-role stress had the highest levels of verbal aggression and feminine participants with low gender-role stress had the lowest levels. The high stress masculine group was significantly different from all other groups except the other masculine groups, the androgynous groups, and the high stress undifferentiated group. It has already been speculated that perhaps androgynous individuals are more verbal due to family influence to express all feelings, both positive and negative. As well, the fact that high stress masculine individuals do not have more verbal aggression than other masculine groupings suggests that perhaps this effect is more of a masculinity effect than a gender-role stress effect. As well, low stress feminine participants were significantly lower in verbal aggression than all other groups except the feminine groups and the low stress undifferentiated group, again suggesting an effect only for femininity. It is thought that if the one gender-role stress variable in this analysis, which combines masculine and feminine gender-role stress, was separated into two variables, one for masculine gender-role stress and one for feminine gender-role stress, this interaction effect would disappear.

Roy-Bargman Stepdown Analysis

For the main effect of sex, in which each dependent variable was entered as a covariate for the next dependent variable, analysis revealed that sex not only contributed significantly to physical aggression and emotional intelligence, but that when the effects of physical and verbal aggression were held constant, sex also had an effect on anger. These results suggest that there is a great deal of shared variance between anger and either physical or verbal aggression, or both. Initial MANOVA analysis had revealed a difference in all dependent variables as an effect of gender-role. However, the stepdown analysis for gender-role revealed that gender-role does not

contribute significantly to variations in anger when physical and verbal effects are held constant, again suggesting shared variance with one of the covariates. Again, this suggests that perhaps the feeling of anger is equivalent between the sexes and across gender-roles, but that the expression of anger is what varies. Indeed, when the overt expressions of anger imbedded in physical and verbal aggression are held constant, sex and gender-roles are associated with anger.

In initial analysis, gender-role stress did not contribute significantly to emotional intelligence. However, gender-role stress contributed significantly to the observed variance in scores at all levels of the stepdown analysis. Emotional intelligence was the last variable entered into the analysis; therefore, when all of the variance in scores associated with the aggression variables was held constant, gender-role stress did have an effect on emotional intelligence. This suggests that perhaps there is some construct overlap between emotional intelligence and some or all of the components of aggression. If indeed many of the same things are being measured by both the emotional intelligence and aggression questionnaires, this would support the exploratory hypothesis that both are a result of the gender system. For the interaction effects, stepdown analysis did not reveal any additional effects than were reported in the analysis of the MANOVA. Another feature of the Roy-Bargman analysis is that it enters the independent variables based upon their effect on the combined dependent variables, entering the variable that contributes the most variance to the scores at the first step of the analysis. For these data, it entered gender-role stress first, followed by gender-role identity and then sex, indicating that gender-role stress contributed the most to the observed variance among scores and that sex contributed the least.

Regression Analysis

The purpose of conducting a regression analysis was to determine if emotional intelligence was a significant predictor of aggression, beyond that accounted for by the gender variables. Therefore, for this analysis emotional intelligence was transformed into a categorical variable and entered into a regression analysis with sex, gender-role identity, and gender-role stress to determine its effect on the components of aggression. Analysis revealed that emotional intelligence is a significant predictor of physical aggression, anger, and hostility, but it is not a significant predictor of verbal aggression. Because androgynous individuals have a higher levels of emotional intelligence, as well as higher levels of verbal aggression, this might also be explained by the supposition in the previous interpretations that perhaps androgynous individuals are in some ways taught to use verbal aggression as a healthy outlet for their emotions.

Another interesting trend emerged when looking over the results of the regression analysis. In the MANOVA analysis, gender-role identity contributed significantly to all of the aggression components. However, once emotional intelligence was added as a predictor variable, gender role identification only contributed to verbal aggression. This suggests that perhaps emotional intelligence varies as a result of gender role identification, and when this fluctuation is taken into account, gender role has nothing else to contribute to the observed differences in aggression. Basically, gender-role influences emotional intelligence which, in turn, influences aggression The contribution of gender-role to verbal aggression again suggests an effect for androgynous individuals in this analysis.

Gender-role stress however remains a significant predictor in the analysis of all of the aggression components. Again suggesting that, out of all of the gender variables, gender-role stress makes the most significant contribution to observed differences in aggression. Emotional

intelligence does seem to be a significant predictor of most components of aggression. However, if the measures of emotional intelligence and aggression used in this analysis have construct overlap and are partially measuring the same thing, emotional intelligence would be a significant predictor of aggression because it is a component of aggression itself, possibly the diametric opposite of aggression. Therefore, it could be interpreted that gender-role stress is the major contributor to all of the components of aggression, and that initial analysis shows an effect for gender-role due only to its relationship with emotional intelligence. Sex remains only a significant predictor of physical aggression, which suggests that perhaps there is a biological propensity for violence that is moderated by environmental pressures.

It appears that both possible roles for emotional intelligence examined in this research are significant. Emotional intelligence does seem to be related to the gender variables. However, due to its negative linear relationship with aggression, it remains a significant predictor of aggression, over and above the gender variables.

Applications

If emotional intelligence is a component of aggression, and if the lack of this intelligence leads to aggression, then it would be advisable to begin research into the effects of emotional intelligence training programs on aggressive responding. If it was determined that emotional intelligence training decreased aggressive responding, then the next step would be to implement these programs into the public school curricula. Hong (2000) introduced a successful program in a university for the purpose of introducing different ideas about appropriate gender behavior and students' views of what manhood should be. He suggested what this study seems to be revealing, that men feel pressure to prove their masculinity, thus leading to violence. The results of his study seem to suggest that violence is a learned trait, and that it has the potential to be unlearned.

If gender-role stress is a major contributor to aggressive tendencies, then the effects of gender equity programs on aggressive responding and emotional intelligence should be researched as well. If it is found that this training does reduce aggression and increase emotional intelligence, then appropriate action should be taken to make parents and educators aware of the potential damage that can be caused by this societal stress. Parental awareness campaigns and school programs stressing an increased behavioral repertoire could be beneficial in reducing aggressive responding. As well, identification of the factors that cause parents to maintain these traditional gender socialization processes can also help us to know which audiences to target. Leonard and Marx (in preparation) found that beyond parent gender, parents' attitudes toward what is appropriate gender behavior are influenced by the parent's education level, level of religious fundamentalism, and type of household. They found that fundamentalism, lower levels of education, and traditional two-parent households help to maintain gender-role stereotypes. Similar findings for household type have suggested that children in single-parent homes are significantly more likely to be androgynous than those in two-parent homes (Russell & Ellis, 1991). This finding supports the idea that it is the fathers who are responsible for this continued perpetuation of gender role stereotyping (Leonard & Clements, in preparation), and that perhaps they are one audience that should be targeted for education about the harmfulness of gender-role stress and the benefits of androgyny and emotional intelligence for their sons and daughters.

Limitations

Limitations of this study included convenience sampling, self-report data, cell sizes, and demographic characteristics related to the sample. One of the major limitations to external validity in a great deal of psychological research is the use of convenience sampling. Surveys were taken into large entry level college classrooms and distributed; thus, random sampling was

not involved in any way. Therefore, these data may not even be representative of the general population in this geographic area, let alone populations outside of the area. It is felt that the farthest that these results could be generalized would be to other mid-sized university populations in the South.

Another limitation with this type of data collection is the possible influence of social desirability on students' responses to self-report surveys. It has been documented that individuals' who place great emphasis on social desirability may alter their responses on such surveys to those which make them look 'good,' even though their responses are anonymous and cannot be traced back to them (Weinberger, Schwartz, & Davidson, 1979). Feminine gender role stress may also exacerbate this effect due to the emphasis of the traditional feminine gender-role on social desirability. Also related to this idea is the phenomenon of the Hawthorne Effect, in which participants respond in a manner consistent with what they think that the researcher is expecting. To mediate this effect, participants were told that this research was designed to investigate personality characteristics on response choices. While broadly this is exactly what this study was examining, it was felt that this broad statement would not clue participants' in to the fact that we were studying gender characteristics and aggressive responding specifically.

The small number of participants in two cells of the design also led to limitations in the interpretation of the results. It is unlikely that cell sizes of four and five are adequate to be representative of a population. Therefore, any significant effects that considered these cells should be interpreted with caution.

Another limitation was due to the geographic area in which this research was conducted and the characteristics of this region. It is well known that in the South, among other areas, people generally hold more traditional ideas about what is appropriate behavior for everyone, but

especially in regard to women and men. Religious fundamentalism and patriarchal values have been associated with increased compliance to strict traditional gender roles (Grasmick, Wilcox, & Bird, 1990). In this area, known to the world as the Bible belt, religious fundamentalism, and thus patriarchal values, is most likely to be very different from what would be found in other areas of the country. This area is also economically depressed in comparison to larger urban areas, and high school graduation rates and college attainment rates are some of the lowest in the country. These characteristics of the area's general population could also be factors that mediate and perpetuate traditional gender roles and aggressive responding. However, it is possible that regional university students across the country are more homogenous than the general population, and that these demographic effects do not have as much of an influence in the population under investigation.

Future Research

This analysis provided many ideas and avenues for future research. It seems that the most important next step is to research the effect of emotional intelligence and gender equity training in the school system or other childcare facility. Based on the great deal of literature supporting a link between anger and aggressive responding to these variables, it seems that we should at least run a few studies comparing the implementation of the program in one setting to a control to see if behavioral episodes decrease.

Throughout the analysis, it became apparent that there are definite effects on the aggression components as a result of the undifferentiated gender-role. Although research abounds on the relationships of the masculine, feminine, and androgynous gender types, literature focusing on the undifferentiated gender role is practically nonexistent. Evaluation of gender-role stress also posed some interesting findings. The gender-role stress variable used in this analysis was based

on masculine gender-role stress for men and feminine gender role-stress for women. However, in data collection, men and women completed both stress measures. It was determined that men and women do not differ in overall masculine gender-role stress. Analysis of the subscales of masculine gender-role stress indicated that while there are significant differences between the sexes in subordination to women, intellectual inferiority, and performance failure as sources of stress, there are no significant differences between men and women when it comes to physical inadequacy and the inability to express emotion as sources of stress. Therefore, it is possible that, due to the increasing number of women who fulfill what were once thought to be masculine roles, this scale is no longer valid for assessing strictly masculine gender-role stress, but rather may need revising to keep up with an evolving conception of gender-role. As well, high masculine gender-role stress was related to all of the aggression variables in this analysis; additional research is needed to determine if masculine gender-role stress would have this same effect on women. Another interesting finding concerned the relationships between emotional intelligence and the subcomponents of aggression. This is a finding that demands more investigation in order to determine if this relationship is with one or all of the subcomponents of aggression, and if emotional intelligence can validly be pursued as its own construct, independent from aggression.

Conclusions

The overall results of this analysis indicated that gender role stress was the most significant predictor of every component of aggression. This was not surprising, in that it seems logical that men who feel an enormous amount of stress to conform to the masculine gender role would be more likely to feel that they have to prove their manliness. As well, it is possible that women who feel bound to live up to a feminine gender role are more likely to suppress any negative

emotions and are unlikely to overtly display them, either verbally or physically. The role of

emotional intelligence in the relationship between gender and aggression was not clearly defined

in this research; but results suggest that it is influenced by the gender variables while also

providing unique prediction to the variation in aggression. Results also indicated that the

measures of aggression and emotional intelligence shared a great deal of common variance,

suggesting that there are aspects of these constructs that overlap because of the antagonistic

nature of the relationship of emotional intelligence with aggression. Although an enlightening

analysis in many ways, all in all, we found what we knew in the beginning… gender is indeed a

complex variable system that influences aggression, a complex response system.

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Appendix A
Participant Instructions

Instructions

Please do not turn this page until instructed to do so.

If you are under 18 year of age or have already participated in this project, please notify the experimenter before you begin any portion of this test packet. To ensure that your responses are kept confidential, DO NOT put your name anywhere on this test packet. Please listen carefully, read all instructions, and remain quiet until everyone has had the opportunity to complete the survey packet.

The purpose of this study is to investigate the relationship of personality traits with emotional and behavioral responses. As you complete this booklet, please respond to all items in the order in which they appear. Once you have turned past a page, please do not return it for any reason.

When you have finished, please return your booklet to the experimenter.

Please provide the following information. Do not put your name on these pages to ensure your anonymity.

Gender: Male _____ Female _____

Age: _____

Where are you from? _____

Year of College: Freshman _____   Sophomore _____   Junior _____

              Senior _____

Total Yearly Income (Your parents' if you are not completely self-supporting):

      $0 to $25,000 _____ $25,000 to $50,000 _____

       $50,000 to $75,000 _____ $75,000 to $100,000 _____ $100,000 + _____

Type of Family Unit: Traditional Two-Parent Family _____

              Single Parent Family _____

              Divorced _____ with extended stepfamilies? _____

              Raised by grandparents _____

              Other (Please Specify) _____

Religious Affiliation: Baptist _____ Methodist _____ Presbyterian _____

   Lutheran _____ Catholic _____ Episcopal _____ Pentecostal _____

   Non-Denominational _____ Other (Please Specify) _____

   None _____

My denomination believes in a literal interpretation of the Bible.   Yes _____ No _____

Bem Sex Role Inventory (BSRI)

There are a number of personality characteristics listed on this page. Please indicate, on a scale of 1 to 7, how true of you each of these characteristics are.

Example: shy
Write a 1 if it is never or almost never true that you are shy.
Write a 2 if it is usually not true that you are shy.
Write a 3 if it is sometimes but infrequently true that you are shy.
Write a 4 if it is occasionally true that you are shy.
Write a 5 if it is often true that you are shy.
Write a 6 if it is usually true that you are shy.
Write a 7 if it is always or almost always true that you are shy.

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true

Defend my own beliefs	_____	Have leadership abilities	_____
Affectionate	_____	Eager to soothe hurt feelings	_____
Conscientious	_____	Secretive	_____
Independent	_____	Willing to take risks	_____
Sympathetic	_____	Warm	_____
Moody	_____	Adaptable	_____
Assertive	_____	Dominant	_____
Sensitive to needs of others	_____	Tender	_____
Reliable	_____	Conceited	_____
Strong personality	_____	Willing to take a stand	_____
Understanding	_____	Love children	_____
Jealous	_____	Tactful	_____
Forceful	_____	Aggressive	_____
Compassionate	_____	Gentle	_____
Truthful	_____	Conventional	_____

Please read carefully each of the following statements and indicate the level of stress that you associate with each one. If a statement is not applicable for you today, think ahead into your future to respond. Example: Getting passed over for a promotion. Please use the following scale to rate your perceived level of stress.

0	1	2	3	4	5
not at all stressful	mildly stressful	somewhat stressful	often stressful	usually stressful	extremely stressful

1 **Admitting that you are afraid of something** _____

2 **Admitting to your friends that you do housework** _____

3 **Appearing less athletic than a friend** _____

4 **Being compared unfavorably to men** _____

5 **Being married to someone who makes more money than you** _____

6 **Being outperformed at work by a woman** _____

7 **Being outperformed in a game by a woman** _____

8 **Being perceived as having feminine traits** _____

9 **Being perceived by someone as "gay"** _____

10 **Being too tired for sex when your lover initiates it** _____

11 **Being unable to become sexually aroused when you want** _____

12 **Being unable to perform sexually** _____

13 **Being unemployed** _____

14 **Being with a woman who is more successful than you** _____

15 **Being with a woman who is much taller than you** _____

16 **Comforting a male friend who is upset** _____

17 **Feeling that you are not in good physical condition** _____

18 **Finding you lack the occupational skills to succeed** _____

19 **Getting fired from your job** _____

20 **Getting passed over for a promotion** _____

21 **Having a female boss** _____

22 **Having a man put his arm around your shoulder** _____

23	Having others say that you are too emotional	_____
24	Having people say that you are indecisive	_____
25	Having to ask for directions when you are lost	_____
26	Having your children see you cry	_____
27	Having your lover say that she/he is not satisfied	_____
28	Knowing you cannot hold your liquor as well as others	_____
29	Letting a woman take control of the situation	_____
30	Losing in a sports competition	_____
31	Needing your spouse to work to help support the family	_____
32	Not being able to find a sexual partner	_____
33	Not making enough money	_____
34	Staying home during the day with a sick child	_____
35	Talking with a "feminist"	_____
36	Talking with a woman who is crying	_____
37	Telling someone that you feel hurt by what she/he said	_____
38	Telling your spouse that you love her/him	_____
39	Working with people who are brighter than yourself	_____
40	Working with people who seem more ambitious than you	_____

Feminine Gender-Role Stress Scale (FGRS)

Please read carefully each of the following situations and indicate the level of stress that you associate with each one. If a statement is not applicable to you today, think ahead into your future to respond. Example: You may not have children yet or be middle-aged. Please use the following scale to rate you perceived level of stress.

0	1	2	3	4	5
not at all stressful	mildly stressful	somewhat stressful	often stressful	usually stressful	extremely stressful

1 **A very close friend stops speaking to you** _____

2 **Bargaining with a salesperson when buying a new car** _____

3 **Being considered promiscuous** _____

4 **Being heavier than your mate** _____

5 **Being perceived by others as overweight** _____

6 **Being pressured for sex when seeking affection from your mate** _____

7 **Being taken for granted in a sexual relationship** _____

8 **Being unable to change your appearance to please someone** _____

9 **Being unusually tall** _____

10 **Feeling less attractive than you once were** _____

11 **Feeling pressured to engage in sexual activity** _____

12 **Feeling that you are being followed by someone** _____

13 **Finding out that you gained 10 pounds** _____

14 **Having a weak or incompetent spouse** _____

15 **Having an intimate relationship without any romance** _____

16 **Having multiple sex partners** _____

17 **Having others believe that you are emotionally cold** _____

18 **Having someone else raise your children** _____

19 **Having to "sell" yourself at a job interview** _____

20 **Having to deal with unwanted sexual advances** _____

21 **Having to move to a new city or town alone** _____

22 **Having your car break down on the road** _____

23	Hearing a strange noise while you are at home alone	_____
24	Hearing that a dangerous criminal has escaped nearby	_____
25	Losing custody of your children after divorce	_____
26	Making sure that you are not taken advantage of when buying a house or car	_____
27	Negotiating the price of car repairs	_____
28	Not being able to meet family members' emotional needs	_____
29	Receiving an obscene phone call	_____
30	Returning to work soon after your child is born	_____
31	Supervising older and more experienced employees at work	_____
32	Talking with someone who is angry with you	_____
33	Trying to be a good parent and excel at work	_____
34	Trying to get your spouse to take responsibility for child care	_____
35	Turning middle aged and being single	_____
36	Wearing a bathing suit in public	_____
37	Your child is disliked by his or her peers	_____
38	Your mate is unemployed and cannot find a job	_____
39	Your mate will not discuss your relationship problems	_____

Appendix F
Buss-Perry Aggression Questionnaire (AQ)

Please read each statement below and then indicate, on a scale of 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me), how much each statement is like you.

1	2	3	4	5
extremely uncharacteristic of me	**somewhat uncharacteristic of me**	**sometimes but infrequently characteristic of me**	**somewhat characteristic of me**	**extremely characteristic of me**

1 **At times I feel I have gotten a raw deal out of life.** _____
2 **Given enough provocation, I may hit another person.** _____
3 **I am an even-tempered person.** _____
4 **I am sometimes eaten up with jealousy.** _____
5 **I am suspicious of overly friendly strangers.** _____
6 **I can think of no good reason for ever hitting a person.** _____
7 **I can't help getting into arguments when people disagree with me.** _____
8 **I flare up quickly but get over it quickly.** _____
9 **I get into fights a little more than the average person.** _____
10 **I have become so mad that I have broken things.** _____
11 **I have threatened people I know.** _____
12 **I have trouble controlling my temper.** _____
13 **I know that "friends" talk about me behind my back.** _____
14 **I often find myself disagreeing with people.** _____
15 **I sometimes feel like a powder keg ready to explode.** _____
16 **I sometimes feel that people are laughing at me behind my back.** _____
17 **I tell my friends openly when I disagree with them.** _____
18 **I wonder why sometimes I feel so bitter about things.** _____
19 **If I have to resort to violence to protect my rights, I will.** _____
20 **If somebody hits me, I hit back.** _____
21 **My friends say that I'm somewhat argumentative.** _____
22 **Once in a while I can't control the urge to strike another person.** _____
23 **Other people always seem to get the breaks.** _____
24 **Some of my friends think I'm a hothead.** _____
25 **Sometimes I fly off the handle for no good reason.** _____
26 **There are people who pushed me so far that we came to blows.** _____
27 **When frustrated, I let my irritation show.** _____
28 **When people annoy me, I may tell them what I think of them.** _____
29 **When people are especially nice, I wonder what they want.** _____

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The State Emotional Intelligence Scale (SEI)

Please read each of the following statements carefully and rate your level of agreement with each using the following rating scale.

1	2	3	4	5
strongly disagree	**somewhat disagree**	**sometimes agree & sometimes disagree**	**somewhat agree**	**strongly agree**

1   **I know when to speak about my personal problems to others** _____

2   **When I am faced with obstacles, I remember times I faced similar obstacles and overcame them** _____

3   **I expect that I will do well on most things I try** _____

4   **Other people find it easy to confide in me** _____

5   **I find it hard to understand the non-verbal messages of other people** _____

6   **Some of the major events of my life have led me to re-evaluate what is important and not important** _____

7   **When my mood changes, I see new possibilities** _____

8   **Emotions are one of the things that make my life worth living** _____

9   **I am aware of my emotions as I experience them** _____

10   **I expect good things to happen** _____

11   **I like to share my emotions with others** _____

12   **When I experience a positive emotion, I know How to make it last** _____

13   **I arrange events others enjoy** _____

14   **I seek out activities that make me happy** _____

15   **I am aware of the non-verbal messages I send to others** _____

16   **I present myself in a way that makes a good impression on others** _____

17   **When I am in a positive mood, solving problems is easy for me** _____

18   **By looking at their facial expressions, I recognize the emotions people are experiencing** _____

19   I know why my emotions change   _____

20   When I am in a positive mood, I am able to come up with new ideas   _____

21   I have control over my emotions   _____

22   I easily recognize my emotions as I experience them   _____

23   I motivate myself by imagining a good outcome to tasks I take on   _____

24   I compliment others when they have done something well   _____

25   I am aware of the non-verbal messages other people send   _____

26   When another person tells me about an important event in his or
       her life, I almost feel as though I have experienced the event myself   _____

27   When I feel a change in emotions, I tend to come up with new ideas   _____

28   When I am faced with a challenge, I give up because I believe
       I will fail.   _____

29   I know what other people are feeling just by looking at them   _____

30   I help other people feel better when they are down   _____

31   I use good moods to help myself keep trying in the face of obstacles   _____

32   I can tell how people are feeling by listening to the tone of their voice   _____

33   It is difficult for me to understand why people feel the way they do   _____

VITA

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