CHILDHOOD EXPOSURE TO VERBAL AGGRESSION AND DESENSITIZATION TO CONFLICT IN YOUNG ADULTHOOD

A Dissertation in
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by

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ABSTRACT

In this dissertation, I examine how childhood exposure to familial verbal aggression may desensitize people to experiences of aggression within adult romantic relationships. More specifically, I aim to understand how individuals who were exposed to verbal aggression in childhood adapt to conflict as reflected in their physiological stress response system.

As a foundation for understanding the influence of familial verbal aggression, I begin Chapter 1 by elaborating on the definition of verbal aggression. Next, I review the frequency of conflict, origins of conflict, and effects of conflict in familial relationships. Then, I discuss research highlighting how exposure to conflict affects children, and I describe the mechanisms that explain how childhood exposure to conflict influences future experiences of conflict.

This dissertation positions exposure to familial verbal aggression during childhood as a source of stress. Accordingly, in Chapter 2, I discuss stress, the hypothalamic-pituitary-adrenal (HPA) axis, and the production of cortisol. I also describe the negative psychological, behavioral, and physiological outcomes associated with an impaired HPA axis due to chronic stress. In addition, I argue that frequent familial conflict can operate as a source of chronic stress. Finally, I offer desensitization as a process that can explain how children’s exposure to familial verbal aggression can undermine the development of the HPA axis and influence an individual’s physiological response to subsequent conflict interactions, specifically conflict interactions between college-aged dating partners.

In Chapter 3, I consider the proximal influences on the experience of conflict in romantic relationships. I first describe the objectives of conflict. Next, I review how conflict between romantic partners reflects and affects relationship well-being. I then argue that it is important to consider proximal factors that impact the experience of conflict. In particular, I hypothesize that
the features of the conflict interaction and the qualities of the interactants shape the intensity of conflict experiences and influence an individual’s physiological reaction to conflict with a dating partner.

In Chapter 4, I discuss the concerns surrounding the measurement of a history of familial verbal aggressiveness and conflict, and I review the three most frequently utilized scales that measure a history of familial verbal aggressiveness and conflict, namely the Verbal Aggressiveness Scale, the Conflict Tactics Scale, and the Aggression Questionnaire. In addition, I explain the appropriate precautions to take prior to the collection of cortisol, the proper procedures to use during the collection of cortisol, and the correct process for handling and storing cortisol samples. Finally, I describe an empirical study designed to test the hypotheses previously posited.

I present the results of the dyadic interactive study in Chapter 5. After describing a series of preliminary analyses, I report the substantive analyses and results that were conducted. Structural equation modeling (SEM) procedures were used to test the relationships between stress reactivity, exposure to verbal aggression in familial conflict during childhood, conflict intensity, cognitive ability, and emotional competence. The results of the analyses provided partial support for the hypotheses.

Finally, in Chapter 6, I discuss the theoretical and practical implications of the study for understanding the influence of a history of exposure to verbal aggression in familial conflict during childhood on subsequent conflict interactions. I conclude by describing the strengths and weaknesses of the dissertation.
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CHAPTER ONE

“Desensitization refers to the attenuation or elimination of cognitive, emotional, and ultimately, behavioral responses to a stimulus” (Rule & Ferguson, 1986, p. 29). Desensitization can be manipulated directly and purposefully. For example, desensitization is a frequently utilized technique in behavioral therapy, where the aim is to substantially decrease or eliminate completely certain emotional responses through exposure to anxiety-inducing stimuli (Wolpe, 1973). The process of desensitization has documented effectiveness in changing children psychologically and behaviorally in behavioral therapy (Weersing & Weisz, 2002). In addition, desensitization has been recognized as a key mechanism in determining the psychological effects of exposure to chronic violence. In particular, children who have experienced severe and chronic physical aggression have described violence as a way of life (Guterman & Cameron, 1997; Prothrow-Stith & Weissman, 1993), and they report that they no longer feel overwhelmed or upset by violence. A similar logic may be applied to determining the physiological effects of exposure to familial verbal aggression.

Conflict is a pervasive aspect of family life, and many conflict interactions consist of verbally aggressive communication. Verbal aggression is defined as a communication behavior in which an individual explicitly uses language to attack the self-concept of another individual (Infante, 1987; Renfrew, 1997; Straus, 1979). Verbally aggressive communication is frequent and the importance often underestimated (Stemmler & Meinhardt, 1990). Besides being destructive and consequential, verbally aggressive communication can function as an important predictor of successive physical violence and abuse (Coleman, 1980; Infante, Chandler, & Rudd, 1989; Infante, Chandler, Rudd, & Shannon, 1990).
Children who have experienced intense, enduring exposure to family conflict may adapt to it and see the use of verbal aggression as typical or expected. This desensitization to verbal aggression may be reflected in dampened psychological and physiological reactions. Such “numbing” normalizes the experience of verbal aggression and hence, helps children adapt to the stress and trauma of aggressive interactions (Funk, Baldacci, Pasold, & Baumgardner, 2004). At the same time, researchers have suggested that attenuated reactions to aggression increase a child’s inclination to behave aggressively because the child no longer views aggression as problematic (Ng-Mak, Salzinger, Feldman, & Stueve, 2002). Moreover, desensitization to conflict can extend beyond the family unit and contribute to aggressive tendencies within other relationships.

Desensitization as reflected in diminished psychological and physiological reactions to verbal aggression can be particularly problematic for individuals in formative romantic relationships. Early romantic relationships form the foundation for healthy adult relationships (Collins & Sroufe, 1999; Collins & VanDulmen, 2006; Furman & Shaffer, 2003). Consequently, the use of or exposure to verbal aggression in formative romantic relationships can have long-term consequences for an individual’s psychological, behavioral, and physiological health (Capaldi & Gorman-Smith, 2003; Ford, Sohn, & Lepkowski, 2001). National data on sexual assault indicate that half of all individuals who experience dating violence are between the ages of 12 and 24 years, and that most incidents of sexual assault occur before the age of 24 (Smith, White, & Holland, 2003). In addition, Humphrey and White (2000) conducted a longitudinal study that found that 69.8% of college-aged women had experienced at least one instance of dating violence. Thus, aggression in the romantic relationships of young adults is both consequential and frequent.
In adult romantic relationships, verbal aggression can arise during conflict interactions. Conflict is defined as a state of incompatibility between individuals. Conflict occurs frequently within romantic relationships. College-aged students report higher levels of conflict with their romantic partners than with friends and family (Benoit & Benoit, 1987) and describe conflict as more radical and passionate when it occurs in a romantic relationship (Coser, 1956). As a result, conflict interactions between romantic partners commonly escalate to include verbally aggressive behavior. Olson (2002) found that approximately 50% of couples experience conflict escalation that includes verbal aggression and other minor forms of verbal violence.

In this dissertation, I consider how childhood exposure to familial verbal aggression may desensitize people to conflict interactions within adult romantic relationships. In the remainder of this chapter, I first elaborate on the definition of verbal aggression. Next, I review the frequency of conflict, the origins of conflict, and the effects of conflict in marital relationships, parent-child relationships, and sibling relationships. Then, I discuss research highlighting how exposure to conflict affects children psychologically, behaviorally, and physiologically, and I describe the mechanisms that explain how childhood exposure to conflict affects future experiences of conflict. In a final section, I provide an overview of the chapters that comprise this dissertation.

**Defining Verbal Aggression**

Verbal aggression is a destructive form of human communication that has been studied in a variety of contexts (Infante, Myers, & Buerkel, 1994). Although many attempts have been made to provide a clear conceptual definition of verbal aggression, unresolved issues in the various conceptualizations remain. I begin my discussion of verbal aggression by comparing various verbal aggression-related terms (e.g., psychological aggression, verbal violence,
emotional abuse). I then explicate verbal aggression as a communication behavior in which an individual explicitly uses language to attack the self-concept of another individual (Infante, 1987; Renfrew, 1997; Straus, 1979).

Verbal aggression overlaps conceptually with psychological aggression, verbal violence, and emotional abuse. Psychological aggression is a term used to describe a distinct form of interpersonal aggression (Garbarino, Guttman, & Seeley, 1986). Hoffman (1984) conceptualized psychological aggression as behavior that threatens a woman’s capacity to work, interact, or enjoy good physical or mental health. Verbal violence is used to refer to conflict, negativity, and antisocial behavior within the family (Reiss, 1995). This concept has been used interchangeably with other terms such as verbal aggression, psychological aggression, and emotional abuse. Finally, the term emotional abuse, which is used most often in research on child abuse, is defined as “damage to the child’s psychological development and emerging personal identity, primarily caused by parent’s (primary caretaker’s) immaturity, defended lifestyle, and conscious or unconscious aggression toward the child” (Firestone, 1992, p. 1).

Researchers have made various attempts to explicate the concept of verbal aggression. For example, Gelles and Harrop (1991) defined verbal aggression as “a communication intended to cause psychological pain to another person, or a communication perceived as having that intent” (p. 224). Similarly, Straus and Sweet (1992) defined verbal aggression as “a communication, either verbal or nonverbal, intended to cause psychological pain to another person” (p. 347). Infante (1987) defined verbal aggressiveness as a communication trait that influences and controls a person’s “tendency to attack the self-concepts of individuals instead of, or in addition to, their positions on topics of communication” (p. 164). Drawing on all of the aforementioned definitions, I define verbal aggression as a communication behavior in which an
individual explicitly uses language to attack the self-concept of another individual (Infante, 1987; Renfrew, 1997; Straus, 1979).

As made clear by this definition, verbal aggression is considered a type of verbal communication. This is not to say that nonverbal behavior is irrelevant; rather, I consider nonverbal aggressive behavior to be an intensifier of the verbal behavior which is the primary channel for conveying aggressive content. Nonverbal behavior, such as posture, touching, facial expression, eye contact, and vocal cues (e.g., rate, pitch, volume, pausing), can exacerbate the effects of the verbal communication. More specifically, expressive displays of emotion in the face or voice can intensify the meaning assigned to the symbols exchanged (Buck & VanLear, 2006). Language is at the core of this communication, because it encompasses the symbols that stimulate meaning (Infante et al., 2003). Symbols are deliberately selected, pieced together to form a message, exchanged between the individuals, and interpreted (Infante et al., 2003). Because verbal messages figure centrally in relaying aggressive content, I focus primarily on language as the symbol system that conveys verbal aggression.

According to my definition, verbal aggression is also classified as a behavior. A behavior refers to an observable action of an individual in relation to a stimulus (Fishbein & Ajzen, 1975). The stimulus may be internal or external, conscious or subconscious, overt or covert, voluntary or involuntary. A behavior can be observed by others and, with an appropriate definition, two or more observers can agree as to whether the behavior did or did not occur (Renfrew, 1997). Behavior is, as such, classified as an objective piece of information. By restricting verbal aggression to an observable behavior, internal conditions such as aggressive feelings, attitudes, or thoughts are de-emphasized.
Verbal aggression is also considered to be directed. Directed behavior is oriented toward an end goal that is intended to be accomplished (Bard, 1992). Directed behavior can also be considered deliberate or premeditated. For a person’s behavior to be considered verbally aggressive, the behavior must be perceived as being carried out with the intention to inflict negative consequences on the target individual (Krahe, 2001). This specification excludes behaviors that result in unintended harm or injury by accident, through negligence, or as a result of incompetence (Krahe, 2001; Renfrew, 1997).

Lastly, this definition of verbal aggression stipulates that the individual directly attacks another individual’s self-concept. In very broad terms, an individual’s self-concept refers to the person’s perception of him- or her-self (Shavelson, Hubner, & Stanton, 1976). These perceptions are formed through personal experience with the environment. For example, Kelley (1973) suggested that environmental reinforcements and significant others are especially influential for the development of an individual’s self-concept. In addition, people’s self-concept is important and useful in explaining and predicting their actions. Self-perception is thought to influence the way an individual behaves, and this behavior in turn influences the way the individual perceives him- or her-self (Shavelson et al., 1976).

In sum, I define verbal aggression as the use of the language symbol system in ways that are perceived to be aimed at negatively influencing an individual’s self-concept. This definition is parsimonious, but it embraces the inherent complexity of the communication phenomena. In addition, this definition does not specify a particular victim or perpetrator. As a result, verbal aggression can be examined in a variety of contexts. The following section discusses the frequency, origins, and influences of verbal aggression in the context of familial relationships.
Verbal Aggression in Familial Relationships

Conflicts are frequent and inherent in familial relationships, largely because of the high level of interdependence and emotional involvement that exists within families. Relative to other types of relationships, adults report that they experience the greatest degree of criticism, verbal aggression, and emotional conflict in their marriage, followed closely by their relationships with siblings, adolescent children, and parents (Argyle & Furnham, 1983). Although previous research has indicated that disagreements that involve verbal aggression are most frequent in dissatisfying relationships, people in satisfying relationships are not immune to conflict. Even though most family interactions are not disagreements, the evidence suggests that conflict is a feature of family life that family members endure in marital relationships, parent-child relationships, and sibling relationships.

Although researchers have studied many topics related to marital unions, research on marital conflict, arguments, and disagreements is a prominent part of this literature. Bradbury, Rogge, and Lawrence (2001) suggested that marital conflict is actually a low base rate event; 80% of married couples reported that they have unpleasant marital disagreements no more than once per month. The origins of conflict reported include requests for behavioral changes, such as expressing emotions more clearly, expressing appreciation, and initiating having sex (Birchler, 1979), and general complaints about work, social activities, and finances (Cummings, Goeke-Morey, & Papp, 2004). In addition, research has examined stage of marriage as an important predictor of marital conflict. Previous findings suggest that conflictual exchanges usually increase during periods of transition, such as the adjustment to marriage and parenthood, and then subsequently decrease (Crohan, 1996).
The introduction of children into a family can create another venue for conflict. In parent-child relationships, the majority of research has reported a curvilinear trend for conflict; conflict is infrequent during childhood, escalates during early adolescence, is most frequent during mid-adolescence, and decreases during late adolescence (Montemayor, 1983). The origins of conflict reported between parents and children depend largely on the age of the child. In a sample of 3 year olds, Ritchie (1999) found that 70% of conflicts experienced were power struggles; whereas during adolescence, parents stated that disagreements arose from issues of morality, personal safety, and conformity concerns (Smetana, 1989). When the majority of family interactions are warm and supportive prior to adolescence, parent-child conflict during adolescence lessens and parent-child relations improve; however, among families who have a hostile, coercive climate, conflict increases and relational quality decays during adolescence (Reuter & Conger, 1995). Similarly, an authoritarian parenting style is positively related to the frequency and intensity of parent-adolescent conflict, but parents who grant adolescents control over some decision making experience less conflict (Smetana, 1995). Lastly, greater conflict is reported between daughters and mothers and fathers and sons than between daughters and fathers and sons and mothers (Suitor, Pillemar, Keeton, & Robinson, 1995).

Sibling relationships are yet another significant source of conflict in families (Raffaelli, 1997), regardless of children’s ages (Bedford, 1998). On a daily basis, siblings report more disagreements with brothers or sisters than with their mothers or fathers (Montemayor & Hanson, 1985). Lollis, Ross, and Leroux (1996) estimated that conflicts between siblings occur more than six times an hour. Researchers have investigated the origins of sibling conflict and although early research focused on sibling rivalry as a cause of sibling conflict, more recent research suggests that causes may simply reflect interdependency as shown in conflicts about
ownership issues, division of labor, and objectionable behaviors (Felson, 1983). Lastly, the amount of contact between siblings, the age of the siblings, and the gender of the siblings are frequently cited influences on sibling conflict. In particular, Raffaelli (1997) reported that the amount of time spent together predicted the rate of sibling conflict more than any other variable; sibling conflict increased as the amount of contact increased. Conflict also is more frequent when siblings are similar in age or of the same gender (Felson, 1983).

Conflict is one of the most studied and discussed subjects in the area of family research because conflict is a prevalent feature of family interaction. Research on family conflict has documented the frequency and origins of marital conflict, parent-child conflict, and sibling conflict. As examined in the following section, the negative consequences that arise from family conflict are equally well documented.

**Effects of Exposure to Verbal Aggression on Child Adjustment**

A number of studies have shown that the experience of repeated and frequent familial conflict is associated with child problems, and these negative patterns exist even when the conflict is not explicit. The literature has identified two hostile conflict styles, overt and covert, both of which involve the use of verbal aggression (Buehler, Krishnakumar, Stone, Anthony, Pemberton, Gerard, & Barber, 1998; Camara & Resnick, 1988; Jenkins & Smith, 1990). An overt conflict style includes hostile behaviors and affect that indicate direct manifestations of negative connections between individuals (Buehler et al., 1998), whereas a covert conflict style reflects passive-aggressive ways of managing conflict between individuals (Buehler & Trotter, 1990). Regardless of whether the individuals involved in the conflict utilize an overt or covert conflict style, exposure to hostile conflict in childhood has psychological, behavioral, and physiological ramifications for the child.
There is a robust association between familial conflict experiences during childhood and the appearance of psychological disorders within children (Amato & Keith, 1991; Zill, Morrison, & Coiro, 1993). The experience of familial conflict has been linked to psychological problems in children such as maladjustment, depression, distress, anger, aggression, and anxiety (Block, Block, & Morrison, 1981; Cummings, Davies, & Simpson, 1994; Porter & O’Leary, 1981; Whitehead, 1979). Familial conflict has also been found to be associated with poorer social awareness and social withdrawal in children (Beisky, Youngblade, Rovine, & Volling, 1991; Cummings & Davies, 1994; Fincham, Grych, & Osbourne, 1994; Harrist & Ainslie, 1998; Kline, Johnston, & Tschann, 1991). The emotional security hypothesis maintains that difficulties regulating intense distress caused by familial conflict produce underlying insecurities that may jeopardize children’s psychological development and place children at risk for disturbances in their psychological functioning, such as negative emotional and behavioral regulation (Cummings & Davies, 1996; Davies & Cummings, 1998; Thompson & Calkins, 1996).

Children who witness or participate in familial conflict are also more likely to develop behavioral problems. Children who are exposed to high levels of verbal aggression do not learn the social skills and aggression control necessary for successful future relationships (Cummings & Davies, 1994). Instead, these children incorporate hostile, destructive, and aggressive behaviors into their own behavior (Kelly, 2000). Symptoms such as conduct disorders, difficulty with peers and authority figures, and delinquency are more frequent in children who report parents in high-conflict marriages compared to children who report parents in low-conflict marriages (Emery & O’Leary, 1982; Vandewater & Lansford, 1998). Children are also more likely to be uncommunicative and to suffer from somatic complaints after being exposed to familial conflict (Johnston, Gonzalez, & Campbell, 1987). Spillane-Grieco (2000) found that
incarcerated teenage offenders reported high frequencies of extreme verbal abuse in their families that did not exist for a matched group of nonoffenders. Furthermore, verbally abused women reported that their children are more physically aggressive toward them than the comparison mothers reported (Emery, 1989; Holden & Ritchie, 1991; Wolfe, 1987).

Recent research also points to disturbances in physiological patterns for children who have been exposed to familial conflict. Empirical evidence suggests that children’s affective regulation and emotional arousal mechanisms are damaged as a result of being exposed to repetitive, severe familial conflict (DeBellis, 1997; Lieberman & VanHorn, 1998). Other physiological responses to angry conflict and aggression include an increase in blood pressure and heart rate, facial indicators of anxiety and fear, crying, and sometimes flight from the conflict situation (Kelly, 2000). With exposure to frequent and intense conflict, this negative physiological arousal of the stress system can create an aggregate of complications in regulating emotional responses. This pileup effect can result in a number of the psychological and behavioral problems mentioned above including anger, verbal aggression, and physical aggression when the child’s stress response system becomes emotionally aroused (Cummings & Davies, 1994; DeBellis, 1997).

Although the research reviewed thus far in this section focuses on contemporaneous consequences of childhood exposure to aggression, witnessing familial conflict during childhood can have long-term consequences as well. Research focused on physical violence suggests that approximately 20% of children who report frequent exposure to interparental abuse experience physical aggression in their own marriage (Widom, 1989). Adult impairments, such as a limited capacity for empathy, the inability to make accurate attributions of one’s own thoughts and feelings, and poor social judgment, appear to be later life manifestations of the consequences of
aggression embodied in childhood (Ornduff, Kelsey, & O'Leary, 2001). These patterns suggest that exposure to or participation in marital conflict, parent-child conflict, and sibling conflict during childhood calibrates an individual’s psychological, behavioral, and physiological responses in adulthood. The mechanisms that might explain that calibration process are discussed in the following section.

**Mechanisms Linking Childhood Exposure to Verbal Aggression and Adult Outcomes**

As noted, children exposed to verbal aggression within their families manifest a variety of cognitive, behavioral, and physiological consequences. Research investigating these consequences has helped to shed light on the possible mechanisms that may link childhood experiences of aggression to adult outcomes. In the paragraphs that follow, I elaborate on the theoretical reasoning that positions cognitive, behavioral, or physiological processes as forces shaping responses to and attitudes about aggression in adulthood.

One explanation offered to account for how childhood experiences of verbal aggression influence the child’s own experience of conflict focuses on the cognitive appraisal of the conflict. The cognitive-contextual framework (Grych & Fincham, 1990) and the emotional security hypothesis (Davies & Cummings, 1994) emphasize subjective child appraisals and reactions as the mechanisms linking experiences of familial conflict to child outcomes. Children’s appraisal of conflict and their evaluation of its significance for their own well-being are important determinants of the impact of familial conflict on children’s functioning in both of these models (Cummings, 1998). Familial conflict may be threatening to children for many reasons. As a result, children may recalibrate their appraisal of conflict as a coping response. In particular, children who experience high levels of conflict at home may no longer appraise
conflict situations as damaging, dangerous, or situations that necessitate resolution. Rather, through appraisal processes, aggressive conflict behavior is normalized to the child.

A second explanation to account for how childhood experiences of verbal aggression influence the child’s own experience of conflict is a behavioral modeling explanation. Social learning theory (Bandura, 1977) proposes that children develop models of interpersonal relationships by learning from and imitating the behaviors of parents. Because of the intensity and duration of the parent-child relationship, it is expected that parents are the most salient role models that young children use to guide their social behavior (Zimet & Jacob, 2001). Consequently, modeling offers a direct explanation for child maladjustment because children who observe interfamilial hostility and anger may vicariously learn these behaviors and mimic them in their own relationships (Zimet & Jacob, 2001). Observing and experiencing familial conflict could provide the entire script for behavior, including specific situations in which aggression is used, the appropriate affective states, and the fitting responses to such situations; in other words, modeling can shape the type and intensity of aggression, not just attitudes of approval and disapproval (Owens & Straus, 1975).

Another behavioral explanation for how childhood experiences of verbal aggression influence a child’s own experience of conflict is the argumentative skills deficiency model. The argumentative skills deficiency model holds that verbal aggression results because of an individual’s inability to utilize verbal skills to diffuse negatively escalating interactions (Infante et al., 1989). Consequently, if people are less skilled at arguing, they are likely to shut down attempts at talking through disagreements and are more likely to engage in verbally aggressive communication (Infante & Rancer, 1982). Witnessing escalating exchanges where individuals demonstrate verbally aggressive communication rather than reasoned argument teaches children
inappropriate responses to disagreements (Infante et al., 1990). The use of verbal aggression, rather than reasoned argument, also fails to model argumentative behavior from which the child can learn how to address confrontation appropriately.

The spillover effect offers a fourth explanation focused on physiology for how childhood experiences of verbal aggression influence the child’s own experience of conflict. As suggested in systems theory and interdependence theory, negative emotions may increase a person’s sensitivity to an irritating or an ambiguous stimulus in different situations, or they may cause an individual to behave in a negative way in the later situation (Margolin, Gordis, & Oliver, 2004). In the context of exposure to familial conflict, spillover effects refer to the expression of negative mood, affect, or behavior, which was engendered in familial conflict, affecting other relationships (Erel & Burman, 1995). In particular, a child might have a buildup of negative emotions as a result of experiencing familial conflict, and this build up might lead the child to experience conflict in other relationships.

The strong support in the empirical research for a relationship between familial conflict and child adjustment problems sparked researchers to offer theoretical explanations for why this relationship exists (Zimet & Jacob, 2001). Mirroring the consequences of childhood exposure to aggression, cognitive, behavioral, and physiological processes have all been considered as mechanisms linking childhood experiences to adult outcomes. In each case, the theoretical logic implies that experiencing verbal aggression in childhood leads adults to be more tolerant of their own and other’s verbally aggressive behavior.

**Overview of Dissertation**

The goal of my dissertation is to examine how childhood exposure to familial verbal aggression may desensitize people to experiences of aggression outside of family relationships.
More specifically, I aim to understand how people who were the target of verbal aggression in childhood physiological adapt to aggression as reflected in their physiological stress response system. I propose that these individuals come to experience aggressive behavior as normal and that this desensitization is manifest in the individual’s cortisol reactivity during a conflict interaction with a romantic relationship partner. I also consider the features of the conflict interaction and the individual differences of the interactants as parameters relevant to the experience of conflict.

The next chapter of my dissertation provides a basis for understanding stress and the body’s physiological reactions to stress. In Chapter 2, I also position familial conflict as a source of stress causing desensitization, and I argue that childhood experiences of conflict distally influence subsequent conflict interactions. In Chapter 3, I discuss conflict in romantic relationships and the influence that conflict has on relational well-being. In addition, I consider the proximal factors that affect an individual’s stress response to conflict, specifically the features of the interaction and the qualities of the interactants. In Chapter 4, I describe the methodological considerations when studying a history of familial conflict and cortisol, and the methods I used to test the effect of conflict between college-aged dating partners on the stress response system. The results of this dissertation are presented in Chapter 5. Finally, Chapter 6 provides a discussion of the study’s findings and the implications of the study for understanding how a history of familial conflict influences the conflict experiences of young adults in romantic relationships.
CHAPTER TWO

This dissertation positions exposure to verbal aggression in familial conflicts during childhood as a source of stress. I aim to understand how children who experience the stress of familial conflict in childhood physiologically adapt to verbal aggression as reflected in their physiological stress response system. Though notional, the stress of chronic familial conflict may recalibrate a child’s stress response system such that the normal responses to conflict are desensitized. Impairment in the physiological stress response system is associated with negative psychological, behavioral, and physiological outcomes that echo the consequences associated with the experience of familial conflict discussed in Chapter 1.

In this chapter, I discuss stress and the hypothalamic-pituitary-adrenal (HPA) axis, one of the body’s primary physiological stress-response systems. Next, I discuss the production of cortisol, which is a glucocorticoid hormone that is released by the HPA axis in response to stressors, and the negative psychological, behavioral, and physiological outcomes associated with an impaired HPA axis due to chronic stress. In addition, I describe the role of familial conflict as a source of stress. Finally, I offer desensitization as a process that can explain how children’s chronic exposure to the stressor of familial verbal aggression can undermine the development of emotion regulation abilities in the HPA axis and derive the central hypothesis that is the focus of my dissertation.

Stress and Outcomes Related to the Stress Response System

The experience of stress is demanding for an individual. When the demands exceed the internal adaptive capacity of the individual, a stress response is triggered to help the individual adapt to the stressor. The body’s two primary physiological stress response systems are the sympathetic-adrenal-medullary (SAM) axis and the hypothalamic-pituitary-adrenal (HPA) axis.
Specifically, the HPA axis promotes defense against stressors through the production of adrenal steroids and stress hormones. The experience of chronic stress requires consistent and frequent demands on the body’s stress response systems and can result in an impairment of the HPA axis. Unfortunately, impairment of the HPA axis has been associated with negative psychological, behavioral, and physiological outcomes.

**Stress**

Stress has been conceptualized in research as an interactive relationship between the external environment and an individual’s internal state. During a stressful experience, the external environmental demands of the situation may exceed the individual’s internal adaptive capacity (Cohen, Kessler, & Underwood Gordon, 1995) and trigger a response to the environmental conditions (Dohrenwend & Shrout, 1985). The stressful external environment can be conceptualized as an event such as a disturbing, dangerous, or noxious situation (McNamara, 2000), a fear (Weitz, 1970), or a life transition (Clum, 1976). The source of stress then triggers an internal response. If the environment is psychologically evaluated as threatening, potentially dangerous, or taxing, a stress response is initiated. Selye (1956) believed that the stress response was a general physiological reaction to any demand made upon it, independent of the nature of the stressor.

Sources of stress have been categorized into three major types of environmental stressors. The first category of stressful life events is cataclysmic phenomena or “sudden, unique, and powerful single life-events requiring major adaptive responses from population groups sharing the experience” (Lazarus & Cohen, 1977, p. 91). These events include natural disasters, bombings, and resettlement. The second type of environmental stressors is defined as “changes affecting fewer persons or a single individual but nonetheless having the same powerful and
sudden impact on the individual or persons involved” (Lazarus & Cohen, 1977, p. 91). These include bereavement, terminal illness, divorce, giving birth, and losing employment. Daily hassles, which are stable, repetitive, or chronic stressors, are a final type of environmental stressors. Much evidence suggests that daily hassles play a larger role than life events in the development of negative psychological, behavioral, and physiological outcomes related to stress.

The psychological model of stress awards central precedence to cognitive functioning, namely appraisal, within the stress process. According to this conceptualization, stress is defined as a “particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). Lazarus (1966) described two types of appraisal: primary and secondary. The function of an appraisal is to ascertain respectively whether the individual’s well-being is at risk and, if so, what resources are available to deal with the risk. In other words, cognitive systems evaluate the fit between an individual’s goals and the external conditions (Lazarus, 1981). Primary appraisal may lead the individual to evaluate the situation as harmful, threatening, challenging, or benign. Secondary appraisal takes into account access to coping options, the applicability of the coping options, and the chance of success utilizing the coping options.

Finally, stress has been conceptualized as a general physiological response to a demand made upon the body (Selye, 1956). This response was believed to be independent of the nature of the stressor. According to Selye (1956), stored energy supplies are mobilized by physiological responses that protect the individual from the stressor. The mobilization of stored energy occurs in two primary physiological stress response systems, namely the sympathetic-adrenal-medullary (SAM) axis and the hypothalamic-pituitary-adrenal (HPA) axis (Flinn &
England, 1995; Dickerson & Kemeny, 2004). The SAM axis allows for an immediate response to a stressor by increasing heartbeat, raising blood pressure, dilating pupils, increasing respiration, and increasing metabolism. The HPA axis releases hormones such as epinephrine, norepinephrine, corticotrophin releasing factor, adrenocorticotropic hormone (ATCH), and cortisol to adapt to the increased demands of the stressful situation and to help return the body to homeostasis (Kirschbaum & Hellhammer, 1989).

Although the environmental model, the psychological model, and the physiological model define stress differently, all three perspectives draw on two basic concepts: a stress stimulus and a stress response. The stress stimulus, or stressor, represents the environmental component that places a demand on the individual. The stress response depicts psychological, behavioral, and physiological outcomes related to the experience of stress.

**The Physiological Outcomes Related to Stress in the HPA Axis**

In the physiological model of stress, Selye (1956) described stress as a general physiological response that the body has as a result of a stress stimulus or stressor. This model often defines stress in terms of activity in the body’s two primary physiological stress response systems. The SAM axis allows for an immediate response to a stressor. Whereas, the HPA helps individuals to adapt to more sustained stressful situations. Both systems play a critical role in providing the body with the energy needed to deal with a stressor and recover from the stress response of the body.

The HPA axis promotes defense against the stress stimulus through the production of adrenal steroids and stress hormones, such as cortisol, epinephrine, norepinephrine, corticotrophin releasing factor, and adrenocorticotropic hormone (ATCH) (Kirschbaum & Hellhammer, 1989). The hormone cortisol is the main product of the HPA axis. The HPA axis
secretes cortisol into the general circulation, where it is bound by several plasma borne proteins. When circulating levels of cortisol exceed the binding capacity of these proteins, the unbound fraction is excreted into the urine, salvia, and plasma. Under normal, nonstressful conditions, cortisol production provides an individual with energy for daily functioning by breaking down fats into fatty acids for useable stored energy, mobilizing proteins, increasing the production of sugar to degrade protein, and increasing serum glucose levels for more useable energy. This cortisol production follows a diurnal pattern of activation, releasing the greatest concentration of cortisol during the morning, a large reduction in cortisol production throughout the afternoon, and a slow tapering of cortisol released during the evening.

Under stressful conditions, additional cortisol is released to mobilize energy against the stressor. This additional energy is essential to an individual’s ability to cope with stressors. The production of additional cortisol is evolutionarily adaptive for individuals. Cortisol production in response to a mild stressor is associated with a higher level of cognitive and social competence. In addition, previous research suggests that cortisol plays a role in behaviors important in competition, including aggression, arousal, and mobilization of physiological resources to deal with the impending threat or challenge (Bateup, Booth, Shirtcliff, & Granger, 2002).

Cortisol levels are extremely sensitive to stressors, especially social stressors and those emerging from close interpersonal relationships (Adam, Klimes-Dougan, & Gunnar, 2007). Regular repeated exposure to stress increases the demands on the HPA axis, which can result in impairment to the HPA axis. Unfortunately, impairment to the HPA axis is associated with negative psychological, behavioral, and physiological outcomes.
Outcomes Associated with Impairment in the HPA Axis

In response to a stressor, the hypothalamic-pituitary-adrenal (HPA) axis is required to work harder to maintain homeostasis within the body. Stressors can be defined as acute (short-term) or chronic (long-term). When experiencing acute stress, stressors are less severe, last for a shorter duration of time, and require less energy to respond and recover from in comparison to the experience of chronic stress. Chronic stress is the result of a situation that has not been resolved or has continued for a long amount of time. It is caused by a severe stressor and requires sustained energy to deal with the stressor. According to Linden, Earle, Gerin, and Christenfield (1997), chronic stress necessitates an increase in cortisol production to cope with the stressor. Unfortunately, consistent and frequent demands on the HPA axis to produce cortisol can result in an impairment of the HPA axis and this impairment has been associated with negative psychological, behavioral, and physiological outcomes.

Research has documented an association between impairment in the HPA axis and the appearance of psychological disorders. Impairment in the HPA axis has been associated with psychological problems, such as depression, atypical/seasonal depression, adrenal insufficiency, anorexia nervosa, obsessive-compulsive disorder, panic disorder, and schizophrenia (Gregson & Looker, 1994). In addition, impairment in the HPA axis has been linked with alcohol abuse and narcotic abuse (Koob & Kreek, 2007). Furthermore, evidence has emerged that suggests that stressful lifestyles may render certain individuals vulnerable to chronic fatigue syndrome (Racciatti et al., 2001). Finally, research has demonstrated an association between HPA malfunction and internalizing problems such as the inability to self-regulate, negative emotionality, blaming, and impairment of the negative feedback system (Ehlert, Gaab, & Heinrichs, 2001; Meyer, Chrousos, & Gold, 2001).
In addition to the psychological problems that impairment in the HPA axis can cause, behavioral changes and behavioral problems are likely to develop. As mentioned previously, when stress is acute the HPA axis increases arousal, alertness, cognition, vigilance, and focuses attention; however, if the stress is chronic, performance-related activity will show a decline. This decline can also influence eating, sleeping, drinking, and smoking behaviors. In addition, individuals might limit their physical activity, and social functioning. Research has also linked impairment in the HPA to the development of behavioral problems, such as an increase in aggression, as well as other externalizing problems including disruptive behavior, conduct disorders, deviance and risky behavior, problem behavior, and antisocial behavior disorder (Granger & Kivlighan, 2003; McEwen, 2003). Tennes and Kreye (1985) established a relationship between impairment in the HPA axis and the intensity of aggressive behavior expressed toward peers and teachers in children. Lastly, Booth, Granger, and Shirtcliff (2008) found that impairment in the HPA axis is associated with poor social relationships during adolescence.

Recent research also suggests that disturbances in the HPA axis can cause additional physiological damage for individuals. Negative physiological outcomes include the development of diseases, such as diabetes, cancer, fibromyalgia, hypothyroidism, and rheumatoid arthritis, and an increased likelihood of experiencing a stroke, asthma, allergies, a migraine, indigestion, heartburn, and headaches (Gregson & Looker, 1994; Tsigos & Chrousos, 1996). Impairment in the HPA axis is also believed to compromise the immune system, resulting in an increase in colds and minor infections (Gregson & Looker, 1994). Lastly, impairment in the HPA axis can negatively affect synaptic plasticity which is the foundation for
learning and memory (Repetti, Taylor, & Seeman, 2002; Scerbo & Kolko, 1994; Smider et al., 2002).

Chronic stress places consistent and frequent demands on the HPA axis to produce cortisol, and these demands can cause an impairment of the HPA axis. Impairment of the HPA axis as a result of chronic stress can have long-lasting psychological, behavioral, and physiological consequences. Frequent exposure to familial conflict can be a source of chronic stress. The repeated experience of familial conflict does not allow the child to sufficiently recover from the stressor and continues to tax the HPA axis (Davies & Cummings, 1998; Davies, Myers, Cummings, & Heindel, 1999). As a result, exposure to familial conflict jeopardizes the overall ability to cope with conflict and results in negative psychological, behavioral, and physiological outcomes (Davies & Cummings, 1994). In the following section, I discuss familial conflict as a source of chronic stress.

**Familial Conflict Causing Desensitization**

As discussed in Chapter 1, conflict is a ubiquitous facet of family life and an aspect of familial relationships that individuals find unsettling. Thus, exposure to familial conflict is a significant source of stress for family members. As a result of the high demands on the body’s physiological stress response systems caused by familial conflict, individuals exposed to chronic familial conflict are particularly susceptible to impairments of the HPA axis. These impairments may be reflected in desensitization to conflict cues that normally elicit a stress response.

**Familial Conflict as a Source of Stress**

As previously mentioned, exposure to family conflict is stressful for family members. Many researchers argue that witnessing familial aggression is a form of emotional abuse.
Additionally, some scholars posit that exposure to chronic and extreme familial conflict is a traumatic experience akin to child maltreatment (Wolfe & McGee, 1994). Not surprisingly, individuals exposed to familial conflict show negative outcomes consistent with outcomes associated with traumatic experiences. For example, children who witness familial aggression suffer traumatic arousal symptoms and post-traumatic stress symptoms (Davies, 1992; Graham-Bermann & Levendosky, 1998).

Research suggests that stress physiology plays a critical role in the relationship between exposure to familial conflict and the development of the negative psychological, behavioral, and physiological outcomes discussed in Chapter 1. Initial research revealed a relationship between the autonomic nervous system and exposure to conflict as a source of stress. For example, children who expressed anger in response to witnessing parental conflict had lower heart rates than comparison groups (El-Sheikh, Cummings, & Goetsch, 1989). Conversely, children who expressed concern or distress after witnessing parental conflict displayed increased heart rate (El-Sheikh et al., 1989). In addition, Clark and Armstead (2000) found that adolescents who perceived their family environment as more conflictual had greater changes in mean arterial blood pressure after a period of six months than adolescents who perceived their family environment to be less conflictual. Also, the positive association between marital conflict and negative internalizing and externalizing behaviors was more robust for girls with higher skin conductance level reactivity than girls with lower reactivity levels (El-Sheikh, Keller, & Erath, 2007).

The development of negative psychological, behavioral, and physiological outcomes discussed in Chapter 1 may also be the result of impairment in the body’s physiological stress response systems. Recent research suggests that adrenocortical activation may explain the
connection between conflict exposure and maladaptive outcomes. Davies, Struge-Apple, Cicchetti, and Cummings (2008) found that children who exhibit high levels of distress in response to marital conflict also elicited high adrenocortical responses. Conversely, previous findings suggest a dampening in the stress response system when witnessing conflict caused by high levels of prior exposure to conflict (Davies, Struge-Apple, Cicchetti, & Cummings, 2007). The individuals who experienced a dampened stress response to conflict were also found to exhibit the highest levels of maladaptive behavioral outcomes two years later (Davies et al., 2007).

Taken together, previous research suggests that stress physiology may play a significant role in the development of the negative psychological, behavioral, and physiological outcomes as a result of familial conflict. Individuals in high conflict families are particularly vulnerable to impairments in the stress response system because exposure to familial conflict is a significant source of stress. Enduring familial conflict does not allow individuals to recover from the demands placed on the stress response system. As a result, continued exposure to familial conflict forces individuals to cope in maladaptive ways such as recalibrating their stress response system so that the normal responses to conflict are desensitized.

**Desensitization to Verbal Aggression**

Desensitization is the eradication of cognitive, psychological, and behavioral responses to a particular stimulus (Rule & Ferguson, 1986). Desensitization has been cited as a mechanism in explaining the effects of physical aggression as a result of repeated exposure to violence. This desensitization can be described as a kind of psychological blunting, “turning off” or “tuning out,” of the normal emotional responses to violent events (Cline, Croft, & Courrier, 1973). The writings of Garbarino and colleagues (Dubrow & Garbarino, 1989; Garbarino, 1995, 1999;
Garbarino & Kostelny, 1997) suggest that children who experience chronic violence do not become overwhelmed by it; rather, they adapt to it. Other authors have agreed, characterizing inner-city youth as adapting to violence by seeing it as normal (Farrell & Bruce, 1997; Richters, 1993), becoming insulated from it (Hill, Levermore, Twai te, & Jones, 1996), being “steeled” by it (Fitzpatrick, 1993), and developing uncaring attitudes toward others as a way of protecting themselves from harm (Osofsky, Wewers, Hann, & Fick, 1993). Children have described violence as a way of life (Guterman & Cameron, 1997; Prothrow-Stith & Weissman, 1993) or as an overall norm (Hinton-Nelson, Roberts, & Synder, 1996) to which they have become socialized (Ogbu, 1981).

Garbarino and colleagues (Garbarino, 1995, 1999; Garbarino et al., 1986; Garbarino & Kostelny, 1997) have suggested that desensitization is maladaptive for children because it increases their propensity to engage in violence, even as it spares them from the immediate emotional distress by psychologically numbing their reactions (Ng-Mak et al., 2002). Huesmann (1998) has argued similarly stating that children who are exposed to violence, either as victims or witnesses, habituate to it and experience it as less adverse. Experiences such as these make it easier for children to envision the use of aggression and plan their own aggressive behaviors. A number of studies have found contemporaneous and longitudinal relationships between exposure to violence and aggressive behavior in children and adolescents. For example, Singer and colleagues (1998) found that exposure to community violence and heavy television viewing, specifically a preference for action and fighting programs, predicted violent behavior among youth in grades three through eight. Similarly, Schwab-Stone and colleagues (1999) found a significant relationship between exposure to violence and externalizing negative behaviors two years later for children in grade six, eight, and ten. Other studies have also reported that
dangerously violent adolescents frequently report higher levels of violence exposure (Flannery, Singer, & Wester, 2001).

Building upon previous work, I suggest that desensitization explains the link between childhood exposure to familial aggression and physiological responses to aggression in adult romantic relationships. Children’s experience of stress caused by exposure to verbally aggressive messages within their family can undermine the development of a regulated stress response system. The stress of familial conflict can be understood as an interactive relationship between an individual’s internal and external environment. During a conflict interaction, the external environment’s demands may exceed the individual’s internal adaptive capacity (Cohen et al., 1995) and trigger a physiological response to the environmental conditions (Dohrenwend & Shrout, 1985). For children who have experienced high levels of familial conflict, this stress response system may be recalibrated, such that the normal physiological responses to conflict cues are attenuated. In turn, children experience verbal aggression as less adverse and normative, which increases the likelihood of aggressive communication behavior and tolerance for other’s aggressive communication behavior (Eisenberg, 2000; Osofsky, 1995).

Based on this reasoning, I predict that childhood exposure to familial aggression influences an individual’s cortisol reactivity during a conflict interaction with a romantic relationship partner. Although cortisol typically follows a diurnal pattern of activity, cortisol is a hormone that is released in response to the experience of stress. As reviewed previously, cortisol levels are extremely sensitive to stressors, especially social stressors and those emerging from close interpersonal relationships (Adam et al., 2007). Under stressful conditions, the HPA axis secretes elevated levels of cortisol. According to Van Goozen (2005), the expression of a stress response is generally dependent on (a) whether the interaction episode is evaluated as threatening
or stressful, (b) whether the outcome of the interaction episode is significant to the individual, and (c) whether the individual has the necessary resources to manage the stressful interaction episode. Thus, I anticipate that the normalization of aggression, as a function of childhood experiences, corresponds with attenuated cortisol reactivity in romantic relationships.

H1: Exposure to verbal aggression in familial conflicts during childhood is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

Conclusion

In this chapter, I positioned family conflict as a source of stress. In particular, I proposed that the stress of chronic familial conflict recalibrates a child’s stress response system such that the normal responses to conflict are attenuated. In line with this argument, I offered desensitization as a process that can explain how children’s chronic exposure to the stress of familial verbal aggression can undermine the functioning of the HPA axis and result in dampened reactivity to conflict. In addition to chronic familial conflict, features of the conflict interaction and qualities of the interactants also have bearing on the stress response system. Next, Chapter 3 addresses the influence of those variables.
CHAPTER THREE

In the previous chapter, I argued that childhood experiences of conflict influence conflict interactions people experience later in life. Specifically, I hypothesized that children who experience the stress of chronic familial conflict in childhood physiologically adapt to aggression as reflected in a dampened physiological stress response to subsequent conflict interactions, specifically conflict interactions between college-aged dating partners. The influence of childhood experiences on interactions later in life constitutes a distal factor because previous conflict interactions are related to an individual’s thoughts and feelings within the current conflict interaction (Bradbury & Fincham, 1988). This chapter considers the proximal influences on the experience of conflict in romantic relationships. As a foundation for this line of inquiry, I first describe the objectives of conflict, and I review how conflict in romantic relationships influences and is influenced by the climate of the relationship. Then, I derive hypotheses concerning proximal factors that affect an individual’s stress response to conflict.

Conflict in Romantic Relationships

Conflict is defined as a state of incompatibility between individuals. Conflict arises when individuals are interdependent and incompatibility is revealed and develops through interaction (Roloff & Soule, 2002). Hence, conflict occurs frequently within romantic relationships. Benoit and Benoit (1987) conducted a study that asked undergraduates to either keep diaries about their everyday arguments or complete a questionnaire about the frequency of conflict in their relationships. The results from both methodologies suggested that college students argue more with romantic partners than with roommates, friends, family members, and bosses. Individuals in romantic relationships are also interdependent; they are reliant on and responsible to each other. Braiker and Kelley (1979) found that as the interdependence between individuals
increases, the severity of the conflict also increases. As a result, conflict is more frequent, more radical, and more passionate when it occurs in romantic relationships (Coser, 1956).

**The Objectives of Conflict in Romantic Relationships**

Carrocci (1985) suggested that conflict in romantic relationships occurs over either content issues or relationship concerns. Similarly, Clark and Delia (1979) proposed that conflict addressed instrumental concerns while simultaneously offering a commentary on the interpersonal relationship between the individuals involved in the conflict and the individual identities of the interactants. Accordingly, conflict in romantic relationships address three types of objectives: instrumental objectives that refer to the function of the interaction, interpersonal objectives that include managing the relationship between the individuals in the interaction, and identity objectives that focus on maintaining a positive self-concept for each interactant (Newton & Burgoon, 1990). These three types of objectives address the purposes and goals that frame conflict communication.

One objective of conflict is content, task oriented, or problem focused. Inherently, conflict is about a particular topic or behavior. For example, Zietlow and Sillars (1988) reported potential problem areas addressed by instrumental conflict between marital partners, such as disagreement about housing, leisure time activities, household duties, and a lack of money. Studies of instrumental conflict communication behavior have frequently examined influence or persuasive behaviors because task-oriented conflicts are used to elicit a desired response from the target to achieve a predetermined goal. This goal-driven approach to conflict communication has the underlying assumption that individuals are active and have the ability to exert influence over their environment and the other individual.
Conflict is also used to manage a relationship. Early studies in this domain focused on how conflict functions to manage and redefine relationships (Miller & Steinberg, 1975). This research highlighted how relational issues emerge as the primary focus of conflict. For example, an individual may confront a partner about his or her commitment level in the relationship. In addition to relational issues functioning as the topic of conflict, arguments over instrumental concerns may have unintended effects on the relationship. For instance, an argument over household duties could lead to relationship dissatisfaction. Benoit and Benoit (1987) conducted a daily diary study that revealed that the majority of arguments (72%) did not affect the relationship, but that the remainder (28%) had an effect on the relationship. Furthermore, Kurdek (1994) found that three of the six conflict issues established in that study, namely power, social issues, and distrust, were significantly related to changes in relational satisfaction.

Although both relational partners are concerned with accomplishing the instrumental goals of the conflict and maintaining a positive relationship with one another, these objectives need to be balanced with each individual’s need to maintain a certain self-concept. Identity objectives in conflict communication are concerned with maintaining a desired self-image. Goffman (1959) argued that people spend a considerable amount of time persuading other people to see them as socially desirable. As a result, people purposefully utilize specific communicative strategies during conflict interactions to increase the probability of producing a favorable impression. Such identity objectives can develop as the focus of the argument or arguments over instrumental or relational concerns and may have unintended effects on the identities of the individuals involved in the conflict.

To summarize, theory and research suggest that instrumental, relationship, and identity objectives frame interpersonal conflict situations. Within the context of romantic dating
relationships, which are neither casual nor institutionalized, relational aspects of conflict are especially salient. Thus, I examine the interface between the relational context and conflict experiences more closely in the following section.

The Relational Context for Conflict

The vast majority of research on conflict in romantic relationships has focused on how conflicts reflect and affect relationship well-being. Conflict is pervasive in both satisfying and dissatisfying close interpersonal relationships; however, conflict is more frequent and more severe in distressed relationships (Lloyd, 1990; Roloff, 1976). For example, distressed couples more frequently and more intensely exhibit negative behaviors compared to nondistressed couples (Billings, 1979; Birchler & Webb, 1977; Birchler, Weiss, & Vincent, 1975; Gottman, 1979, 1994; Koren, Carlton, & Shaw, 1980; Lloyd, 1990; Markman, 1979, 1981). Negative behaviors include sarcasm, hostile messages, criticism, coercive tactics, and rejecting behaviors. Not surprisingly, these negative behaviors are usually less effective in resolving disagreements, produce less satisfaction with communication situations, and result in less favorable outcomes (Canary & Cupach, 1988; Koren et al., 1980; Newton & Burgoon, 1990).

Dissatisfied couples are also more likely to engage in negative interaction sequences. For instance, distressed couples engage in negative reciprocity more frequently than nondistressed couples (Billings, 1979; Gottman, 1979; Gottman, Markman, & Notarius, 1977; Margolin & Wampold, 1981; Pike & Sillars, 1985; Ting-Toomey, 1983). Negative reciprocity occurs when a negative action is countered with an equally negative reaction. Furthermore, such exchanges occur for longer periods of time in distressed relationships (Sillars & Wilmot, 1994). Dissatisfaction also increases the likelihood of countercomplaining loops (Alberts, 1988), confrontation-complaint-defense cycles (Ting-Toomey, 1983), and demand-withdraw interaction
patterns (Gottman & Levenson, 2000). Negative exchange sequences such as these often result in the escalation of conflict (Sillars & Wilmot, 1994).

Previous research on couple conflict has consistently demonstrated that dissatisfied couples experience more conflict than satisfied couples. Dissatisfied couples engage in higher levels of negative behavior and negative interaction sequences. Distressed couples also perpetuate dissatisfaction through their conflict behavior. These negative events both arise from and serve to reinforce relationship satisfaction or dissatisfaction (Fletcher & Fincham, 1991).

Research on conflict in romantic relationships identified relational well-being as a significant variable influencing interpersonal conflict. Conflict in romantic relationships shapes and is perpetuated by the climate of the relationship. Despite the important insights gained from this research, it fails to address the more proximal factors that influence the couple’s experience of conflict. This prevailing view ignores how features of the conflict interaction and qualities of the interactants affect the response to conflict.

**Proximal Factors that Affect the Stress Response to Conflict**

The influence of relationship well-being is clear; however, to understand how childhood experiences are manifest in adult conflict, it is necessary to consider other proximal factors in an individual’s experience of the conflict interaction. As such, I argue that it is important to investigate the impact of the features of the conflict interaction and the qualities of the interactants on the experience of conflict. In particular, I focus on the intensity of the conflict interaction and the cognitive abilities and emotional competencies of the interactants as proximal influences on responses to conflict interactions between college-aged dating partners.
Features of Interpersonal Conflict

The intensity of the conflict interaction, manifest in the individuals’ conflict behaviors, is a significant proximal factor that shapes the physiological stress response to conflict. Sillars (1980) argued that there were two aspects to consider in a person’s response to a conflict: the degree to which the response directly discloses information, which facilitates more information exchange, and the degree to which the response reflects the attainment of individual or mutual goals. These two features informed a three cluster system of categorizing strategies utilized in interpersonal conflict.

Distributive tactics are competitive and reflect one individual’s goals regardless of the desires of their partner’s goal and/or their relational goals. Sillars (1980) defined distributive tactics as explicit discussions that request unilateral behavioral change or concessions from the partner. Roloff (1976) labeled distributive behaviors as antisocial, antagonistic, and individualistic, and argued that such techniques are damaging to interpersonal relationships. Distributive tactics include faulting the partner, criticism, insults, hostile questioning, sarcasm, presumptive attribution, shouting, demands, and threats (Canary & Cupach, 1988; Cupach, 1982; Sillars, Coletti, Parry, & Rogers, 1982). Distributive behaviors have been found to be negatively associated with communication satisfaction (Cupach, 1982); appropriateness, effectiveness, and attractiveness (Spitzberg, Canary, & Cupach, 1994); and relational satisfaction (Gottman, 1979).

In contrast to the competitive nature of distributive tactics, integrative tactics are cooperative and involve the supportive negotiation of problems to pursue a mutually favorable resolution to the conflict (Sillars et al., 1982). Sillars and colleagues (1982) defined integrative tactics as statements that openly acknowledge and directly discuss conflict and promote a positive or neutral affective climate between parties. Roloff (1976) categorized integrative
messages as prosocial, stating that integrative messages promote relationship growth, change, and maintenance. Integrative tactics include seeking agreement, negotiating, expressing trust, discussion of alternatives, disclosure, requesting information, and compromise (Cupach, 1982; Putnam & Wilson, 1982; Sillars, 1980). Integrative messages have been positively associated with communication satisfaction (Cupach, 1982; Gottman, 1994; Sillars, 1980); appropriateness, effectiveness, and attractiveness (Sptizberg et al., 1994); relational intimacy (Cupach, 1982); and conflict resolution (Sillars, 1980).

Avoidant tactics deny the presence of conflict altogether. Avoidant tactics minimize explicit discussion of conflict, shift the focus of the conversation away from conflict, diffuse the discussion of conflict, and/or communicate about conflict indirectly and ambiguously (Sillars et al., 1982). Sillars (1980) defined avoidant tactics as passive and indirect strategies that involve no direct discussion of a problem and reflect low information disclosure. Avoidant tactics include teasing, avoiding the conflict, sidestepping disagreements, and trying to make the other person jealous (Cupach, 1982; Putnam & Wilson, 1982). Previous research has demonstrated a modest negative association between avoidant messages and communication satisfaction (Cupach, 1982); partner satisfaction (Sillars, 1980); appropriateness, effectiveness, and attractiveness (Sptizberg et al., 1994); and the likelihood of conflict resolution (Sillars, 1980). It is important to note that the findings are not unequivocal; some research has found the use of avoidant tactics to be positively associated with communication satisfaction (Fitzpatrick & Winke, 1979). In addition, Fitzpatrick, Fallis, and Vance (1982) have provided some evidence that avoidant tactics may operate prosocially.

The use of distributive, integrative, and avoidant conflict tactics shapes the intensity of conflict experienced during interaction. Resick, Barr, Sweet, Kieffer, Ruby, and Spiegel (1981)
identified specific qualities that people use to discriminate high versus low conflict intensity. One discriminator of conflict intensity is the volume of speech. A conflict interaction is rated as more negative, intense, and severe the louder the interaction (Resick et al., 1981). In line with this argument, Gottman (1994) found that the louder the interaction the more negative affect behind the content of the message. Similarly, Newton and Burgoon (1990) established that the interpretation of a relational message is greatly influenced by volume of speech and that regardless of the content, louder messages are rated as more negative. Tusing and Dillard (2000) also discovered that loudness was positively associated with dominance.

Another discriminator of conflict intensity identified by Resick and colleagues (1981) is criticism. Criticism is defined as the expression of dissatisfaction concerning a personal quality or behavior of another person (Nomura & Barnlund, 1983). Criticism also incorporates blame and is categorized as a distributive tactic (Gottman & Levenson, 1999). Gottman and Levenson (2000) found that highly intense conflict interactions had a higher frequency of critical statements in comparison to less intense conflict interactions; in addition, that study showed that the level of expressed criticism was positively related to ratings of negativity. Critical comments often create defensiveness and escalate conflict (Alberts & Discroll, 1992). In contrast, supportive, noncritical statements increase the likelihood of problem solving and conflict resolution (Pasch & Bradbury, 1998).

Disagreement is a third discriminator of conflict intensity. A disagreement is a stated difference of opinion, disparity, or discrepancy; it is categorized as a distributive tactic. Disagreements in romantic relationships can occur over a variety of topics, such as communication, spending time together, sex, jealousy, housework, finances, etc. (Gottman, 1979; Mead, Vatcher, Wyne, & Roberts, 1990). The more disagreeable the interaction, in
contrast to cooperative, the more intense, conflictual, and consequential the rating of the interaction (Hartup, 1992; Resick et al., 1981).

A final discriminator of conflict intensity identified by Resick and colleagues (1981) is sarcasm. Folger and Baron (1996) categorized sarcasm as a covert aggressive action designed to harm others, but conceal the goal of the aggressor. In comparison to critical or disagreeable messages, a sarcastic remark is delivered more subtly and can be disguised as humorous. Despite the surreptitious delivery of a sarcastic message, sarcasm is a hostile communication behavior used to vent anger (Allcorn, 1994). In addition, sarcastic comments often escalate interpersonal conflict (Gordon, 1985). The more sarcastic messages deployed during a conflict interaction, the more intense the rating of the conflict (Resick et al., 1981).

The intensity of the conflict interaction is influenced, in general, by the use of distributive, integrative, and avoidant conflict tactics, and in particular, by the presence of four discrete features: loudness, criticism, disagreement, and sarcasm. Previous research suggested that exposure to low-intensity conflict is unrelated to negative psychological, behavioral, and physiological ramifications; as the intensity of the conflict increases, so does the likelihood for the development of negative contemporaneous and longitudinal outcomes for individuals (Grych & Fincham, 1990). In other words, as the conflict intensity increases, the impact on the individual also increases. Accordingly, I position the intensity of the conflict interaction is a proximal factor shaping the physiological stress response to conflict. Specifically, I predict a higher level of conflict intensity corresponds with increased cortisol reactivity in a conflict interaction between romantic dating partners.
**H2:** Conflict intensity is positively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

Drawing from the discussion of desensitization in Chapter 2, I further predict that exposure to verbal aggression moderates the relationship between conflict intensity and cortisol reactivity as specified in H2. In particular, I hypothesize that exposure to verbal aggression in familial conflicts during childhood dampens the positive association between conflict intensity and the amplitude of stress reactivity to conflict interactions between college-aged dating partners. As argued previously, children who have experienced intense and frequent exposure to familial conflict adapt to it and evaluate conflict as normal, typical, or expected. As a result, experiences of conflict in romantic relationships are less salient to individuals with a history of familial conflict, and this desensitization is reflected in a diminished physiological reaction to conflict. Accordingly, I posit that the tendency for conflict intensity to aggravate stress reactivity to conflict interactions in romantic relationships will be attenuated for individuals who have experienced a history of familial conflict.

**H3:** A history of exposure to verbal aggression in familial conflicts during childhood moderates the association between conflict intensity and the amplitude of stress reactivity to conflict interactions, such that the magnitude of the positive association between conflict intensity and the amplitude of stress reactivity to conflict is reduced when a history of exposure to verbal aggression in familial conflicts during childhood is high, rather than low.
Qualities of the Individuals in Conflict

Whereas the previous section focused on qualities of the interaction, I turn now to particular attributes of conflict interactants as proximal factors that shape the physiological stress response to conflict. Specifically, I suggest that the cognitive abilities and emotional competencies of the interactants are influential to the experience of conflict between college-aged dating partners.

Cognitive ability is a relevant individual difference that is predicted to impact the physiological stress response to conflict. Sillars (1998) and Sillars, Roberts, Leonard, and Dun (2000) suggested that several inherent aspects of communication shape cognitive processes during a conflict interaction. Individuals need to interpret ambiguous, sometimes conflicting verbal and nonverbal messages from their partner, plan their own verbal and nonverbal messages, and respond in a behavioral sequence, imposing significant cognitive demands (Waldron & Cegala, 1992). In addition, most inferences about communication are made quickly and are not questioned by the partner or discussed between partners because of the fast pace of a typical conflict interaction. Participation in a conflict interaction also requires individuals to understand the pragmatic intentions of the interaction. Finally, the conflict interaction is occurring in the context of a broader relationship. As a result, individuals engaged in a conflict are sometimes thinking about different aspects of the relationship, including previous conflict interactions.

Accordingly, I argue that an individual’s cognitive ability is an important individual difference that influences whether people can manage the cognitive strain of conflict interactions. An individual with a higher level of cognitive ability might be better able to interpret ambiguous verbal and nonverbal messages. In addition, a more cognitively able
individual is expected to be capable of processing and interpreting information more quickly and accurately. Finally, an individual with more cognitive ability may be able to select more effective and appropriate tactics during a conflict interaction. As a result, I hypothesize that individuals with higher cognitive ability are able to manage their experience of conflict more successfully than people with lower cognitive ability. I predict that a more cognitively able individual will be less reactive to a conflict interaction with a romantic partner as reflected in a less pronounced stress reactivity.

**H4:** Cognitive ability is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

In addition, I posit that an individual with higher cognitive ability will be able to adjust their conflict behavior more effectively, deploying more appropriate tactics. This is hypothesized to result in a less intense conflict interaction. As such, I posit that conflict intensity mediates the relationship between cognitive ability and stress reactivity.

**H5:** Conflict intensity mediates the association between cognitive ability and the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

Emotional competence is a second individual difference that is predicted to be relevant to the physiological stress response to conflict. Conflict interactions are emotionally taxing. Individuals need to interpret verbal messages from their partners, while simultaneously recognizing, processing, and labeling their partner’s emotions accurately. Emotional understanding is imperative because it allows individuals to be sensitive and responsive to their partner. In addition, individuals in conflict need the ability to use language to describe their own
internal affective states. This capability provides a foundation for the inhibition of reactive behavior and the redirection of emotional arousal into alternative actions (Izard, 2002). Lastly, partners need the capacity to appropriately display emotions. Individuals in a conflict interaction need to manage their emotions and decide whether to express, mask, or change felt emotions (Kruml & Geddes, 2000). In a conflict interaction, participants feel a tension between spontaneously expressing and strategically communicating their emotions (Planalp, 1999).

A person’s emotional competence is a significant individual difference that impacts whether individuals can cope with the emotional strain of conflict interactions in romantic relationships. An emotionally competent person is expected to be better equipped to recognize, process, and interpret their partner’s emotions correctly. In addition, a more emotionally intelligent individual should be capable of handling their own emotions. As a result, I hypothesize that an individual with more emotional competence is able to manage their experience of conflict more productively. I predict that a more emotionally competent individual will be less reactive to a conflict interaction with a romantic partner, as reflected in a less pronounced stress reactivity.

**H6:** Emotional competence is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

In addition, I posit that an individual with more emotional competence will be able to adjust their conflict behavior more appropriately than a less emotionally competent individual. This is hypothesized to result in a less intense conflict interaction. As such, I posit that conflict intensity mediates the relationship between emotional competence and stress reactivity.
**H7:** Conflict intensity mediates the association between emotional competence and the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol.

**Conclusion**

In this chapter, I hypothesized associations between the amplitude of stress reactivity to conflict interactions and conflict intensity, cognitive ability, and emotional competence. In addition, I posited that the stress of chronic familial conflict moderates the association between conflict intensity and the amplitude of stress reactivity to conflict. Finally, I hypothesized that conflict intensity mediates the association between stress reactivity and both cognitive ability and emotional competence. The hypotheses forwarded in this chapter and the previous chapter are tested in a study in which college-aged individuals engaged in a conflict interaction with a dating partner. The methods for this study are discussed in the following chapter.
CHAPTER FOUR

In the previous chapters, I argued that exposure to familial verbal aggression desensitizes people to experiences of conflict within adult romantic relationships reflected in a dampened physiological stress response. I also discussed the features of the conflict interaction and the specific attributes of the interactants as factors relevant to people’s stress response to conflict. In this chapter, I discuss the measurement concerns when studying a history of familial conflict and when collecting cortisol samples. In addition, I describe the methods I used to test the impact of conflict interactions on the stress response system.

The hypotheses derived in Chapter 2 and Chapter 3 contain a construct that describes a history of familial conflict and verbal aggressiveness. Because this construct is not directly observable, measurement validity is a prerequisite for obtaining interpretable findings. Measurement validity refers to whether the values produced by the instrument reflect the operationalization of the construct being measured and whether the operationalization reflects the conceptual definition of the construct. A measure is valid if the scores on the measure reflect the quantity of the construct being measured in reality. Unfortunately, existing measures of history of familial conflict and verbal aggressiveness have validity concerns.

In addition, the hypotheses that focus this dissertation contain the construct of cortisol. The collection of cortisol samples presents measurement concerns for social scientists. Researchers most frequently collect saliva samples to study cortisol. This methodological technique is useful because of its convenience and minimal invasiveness; however, researchers who use saliva samples because of their ease need to be methodical about the procedures used to obtain accurate results.
In the sections that follow, I discuss the concerns surrounding the measurement of a history of familial verbal aggressiveness and conflict. I take a close and critical look at the three most frequently utilized scales that experiences of verbal aggressiveness and conflict, namely the Verbal Aggressiveness Scale, the Conflict Tactics Scale, and the Aggression Questionnaire. In addition, I explain the appropriate precautions to take prior to the collection of cortisol, the proper procedures to use during the collection of cortisol, and the correct process for handling and storing the samples. Finally, I describe an empirical study designed to test the hypotheses posited in Chapter 2 and Chapter 3.

A History of Familial Verbal Aggression and Conflict

Researchers have made various attempts to conceptualize and measure the concept of verbal aggression and conflict. In the following paragraphs, I describe the conceptualization of verbal aggression and conflict used in the development of the Verbal Aggressiveness Scale, the Conflict Tactics Scale, and the Aggression Questionnaire – three of the most widely used measures of verbal aggression. In addition, I discuss the limitations of these conceptualizations and of the measures derived from these conceptualizations. Finally, I propose the measure of a history of familial conflict and verbal aggressiveness used in this dissertation study.

The Verbal Aggressiveness Scale

Verbal aggressiveness was conceptualized by Infante and Wigley (1986) as “a personality trait that predisposes people to attack the self-concepts of others” instead of, or in addition to, their positions on controversial issues during a confrontational episode (p. 61). The definition offered by Infante and Wigley (1986) is less than ideal for two main reasons. First, it defines verbal aggressiveness as a communication trait rather than a communication behavior, but the measure itself focuses on verbal aggressiveness as a communication behavior. Second,
the definition is unclear as to what behaviors might categorize a verbally un-aggressive individual. In other words, the conceptual definition does not specify if low verbal aggressiveness is an avoidance of personal attacks on the self-concepts of other people or if low verbal aggressiveness is the act of verbally boosting the self-concepts of others.

Despite these limitations to the Infante and Wigley (1986) conceptualization of verbal aggression, the Verbal Aggressiveness Scale is a commonly used measured. The Verbal Aggressiveness Scale contains 20 Likert-type items with a five-point response format (1 = *Almost never true*, 2 = *Rarely true*, 3 = *Occasionally true*, 4 = *Often true*, 5 = *Almost always true*) (Infante & Wigley, 1986). Half of the items are designed to measure a tendency to engage in verbally aggressive behavior, while the other half of the items are reverse-scored. The original development and validation of the Verbal Aggressiveness Scale was reported as a 20-item unidimensional scale (Infante & Wigley, 1986); however, the factor analysis of responses “produced a two factor varimax solution… with all of the items loaded on the first factor worded positively and all of the second factor items worded negatively” (p. 64).

Suzuki and Rancer (1994) also found evidence consistent with a two factor measurement model during a partial replication of Infante and Wigley’s (1986) initial measurement validation study. In addition, Beatty, Rudd, and Valencic (1999) maintained that the Verbal Aggressiveness Scale should be considered as two separate scales rather than as opposite ends of the same scale. They proposed that the aggressively-worded items should compose a verbal aggressiveness scale, whereas the ego-supportive, positively-worded items should compose a nurturing and supportive scale. Consequently, the Verbal Aggressiveness Scale is best scored as a ten-item scale consisting only of the aggressively worded items.
The Conflict Tactics Scale

The Conflict Tactics Scale, originally created by Straus (1979) and revised by Straus, Hamby, Boney-McCoy, and Sugarman (1996), is a measure that evaluates the extent to which romantic partners have engaged in both psychological and physical aggression toward one another. In addition, the Conflict Tactics Scale evaluates the romantic partner’s reasoning and negotiation abilities in conflict situations. The Conflict Tactics Scale is comprised of five subscales: negotiation, psychological aggression, physical assault, sexual coercion, and injury. The broad range of behaviors included in the measure is problematic, in that the scales include both benevolent and malevolent acts. Behaviors that are pro-social such as “explained my side of a disagreement to my partner” are not relevant to the study of conflict or aggression. As such, these items need not be included in a measure intended to evaluate psychological and physical aggression. In addition, the scale was created to evaluate negative relational behaviors; however, it is nearly impossible to form an exhaustive list of psychologically and physically aggressive behaviors. As a result, many behaviors are missing from each subscale.

Regardless of these limitations, the Conflict Tactics Scale is the most frequently used measure of physical aggression. The Conflict Tactics Scale contains 78 Likert-type items with an eight-point response format (1 = Once in the past year, 2 = Twice in the past year, 3 = 3-5 times in the past year, 4 = 6-10 times in the past year, 5 = 11-20 times in the past year, 6 = More than 20 times in the past year, 7 = Not in the past year, but it did happen before, 0 = This has never happened) (Straus et al, 1996). Each item asks about the participant’s engagement in a certain behavior. Each item is then repeated to measure the respondent’s perception of his or her partner’s engagement in the same behaviors. The original development and validation of the Conflict Tactics Scale reported a three-factor solution (violence, verbal aggression, reasoning),
but the scale was revised in 1996 and expanded into a five-factor solution (physical assault, psychological aggression, negotiation, injury, sexual coercion).

The Conflict Tactics Scale does not take into account the context and meaning of the acts; however, Straus and colleagues (1996) addressed this criticism by stating that the Conflict Tactics Scale is intended to be used in conjunction with measures of cause, context, and consequence that are relevant for each particular study. As a result, the scale is expected to function well in any population. Unfortunately, Newton, Kiecolt-Glaser, Glaser, and Malarkey (1995) demonstrated that the Conflict Tactics Scale does not function as well within a population of high risk mothers in comparison to Straus and colleagues’ (1996) validation in a male and female college student population. In the initial validation study, Straus reported a Cronbach’s alpha coefficient of .86 for the negotiation subscale, .79 for the psychological aggression subscale, and .86 for the physical assault subscale. Newton, Connelly, and Landsverk (2001) reported similar results for the negotiation subscale, but were unable to reproduce high reliability coefficients for the psychological aggression subscale and the physical assault subscale. This is particularly problematic for the measurement of a history of familial conflict and verbal aggression because the psychological aggression subscale is the most frequently used subscale to measure verbalized conflict.

**The Aggression Questionnaire**

The Aggression Questionnaire is a four subscale measure that evaluates the personality trait of aggression (Buss & Perry, 1992). The four subscales are physical aggression, verbal aggression, anger, and hostility. As defined by Buss and Perry (1992), physical and verbal aggression cause physical or psychological damage to others and represent the instrumental or motor component of behavior. Anger involves physiological arousal, provides the foundation for
aggressive behavior, and is the emotional or affective component of aggression. Lastly, hostility is defined by wishes of ill will or threatening thoughts; it is the cognitive component of aggressive behavior. Unfortunately, the division of aggressive behavior into motor, emotional, and cognitive components ignores the social aspect of aggression. The assertion of aggression as a trait overly relies on personality while underplaying situational variables (Dodge & Coe, 1987). In addition, defining anger as a physiological arousal stipulates that anger should be measured physiologically; however, the Aggression Questionnaire is a self-report measure.

Even with the limitations of this conceptualization, the Aggression Questionnaire is a widely used measure of verbal aggression, especially in the fields of psychology and sociology. The Aggression Questionnaire contains 29 Likert-type items with a five-point response format (1 = Extremely uncharacteristic of me, 5 = Extremely characteristics of me) (Buss & Perry, 1992). As mentioned previously, the measure consists of four subscales to evaluate physical aggression, verbal aggression, anger, and hostility (Buss & Perry, 1992). These four subscales are conceptualized to link to a higher order factor of general aggression. The original development and validation of the Aggression Questionnaire reported as a four factor scale with alpha coefficients as follows: physical aggression, .85; verbal aggression, .72; anger, .83; and hostility, .77.

Despite the validation of the measure provided by Buss and Perry (1992), Harris (1996) found only moderate support for the validity of the Aggression Questionnaire when examining the relationship between the Aggression Questionnaire and other self-reported measures of aggression, physiological measures of aggression, and pro-social personality measures. First, the Aggression Questionnaire scales only moderately correlated with other measures of aggression (range = .26-.49). In addition, although research suggests a positive relationship between the
Aggression Questionnaire and salivary testosterone and a negative relationship with pro-social personality measures including nurturance, empathy, and altruism, these results were lower than what has been demonstrated previously in the literature using other measures of verbal aggression (Harris, 1996). Thus, the Aggression Questionnaire appears to only have moderate convergent validity with other self-reported measures of aggression and limited divergent validity with pro-social personality measures.

**A History of Familial Verbal Aggression and Conflict**

As discussed in Chapter 1, I define verbal aggression as the use of the language symbol system in ways that are perceived to be aimed at negatively influencing an individual’s self-concept. To measure a history of familial verbal aggression and familial conflict, I used items from the three previously discussed measures, namely the Verbal Aggressiveness Scale (Infante & Wigley, 1986), the Conflict Tactics Scale (Straus et al, 1996), and the Aggression Questionnaire (Buss & Perry, 1992), as a foundation.

When measuring a history of conflict and aggression, participants frequently conform to socially acceptable values and underreport incidences of violence (Babcock, Costa, Green, & Eckhardt, 2004). To combat this concern, I included an orientation designed to normalize the experience of conflict within a family. Using the Conflict Tactics Scale as a reference, the orientation stated that “In all families, there are times when people disagree, get annoyed with one another, want different things from each other, or just have fights because they are in a bad mood, are tired, or for some other reason” (Straus et al., 1996). This statement was included to increase the acceptability of the items for the participants and decrease social desirability bias in the responses.
Following from the orientation, directions instructed participants to focus on experiences during middle childhood (i.e., third, fourth, fifth, and sixth grade) to capture a history of familial verbal aggression and conflict. This period of life was chosen because experiences during this time are more easily recalled than those in early childhood. Middle childhood marks a significant period of cognitive development for children. Cognitive abilities, such as concentration and memory improve significantly during middle childhood years, making it easier for individuals to report on experiences that occurred during that time (Burnett Heyes, Zokaei, van der Staaij, Bays, & Husain, 2012). A similar methodology was used by Schwab-Stone and colleagues (1999) who asked participants to recall childhood violence exposure in grade four, six, and eight.

The scale used an eight-point response format similar to the response format of the Conflict Tactics Scale (0 = This has never happened, 1 = Not in the past year, but it did happen before, 2 = Once in the past year, 3 = Twice in the past year, 4 = 3-5 times in the past year, 5 = 6-10 times in the past year, 6 = 11-20 times in the past year, 7 = More than 20 times in the past year). I chose this response format to obtain more accurate reports of incidences of conflict and aggression. Rating the tendency to engage in a behavior on a scale (e.g., 1 = Almost never true, 2 = Rarely true, 3 = Occasionally true, 4 = Often true, 5 = Almost always true) requires a point of reference; terms such as “rarely”, “occasionally”, and “often” are relative and increase validity concerns. In comparison, reporting on the frequency of a behavior is relatively objective.

The scale I employed (see Table 1) contains 20 items. The scale is expected to produce a two-factor solution comprised of self-concept attacks and non-specific aggression displays. Each item asks about the participant’s family members’ engagement in an aggressive behavior towards the participant. Following from the conceptualization of verbal aggression discussed in Chapter
Table 1

A History of Familial Verbal Aggression and Conflict

<table>
<thead>
<tr>
<th>Self-Concept Attacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attacked my intelligence</td>
</tr>
<tr>
<td>Called me stupid</td>
</tr>
<tr>
<td>Attacked my character</td>
</tr>
<tr>
<td>Told me I behaved in poor taste</td>
</tr>
<tr>
<td>Criticize my shortcomings</td>
</tr>
<tr>
<td>Damaged my self-concept</td>
</tr>
<tr>
<td>Personally attacked my character</td>
</tr>
<tr>
<td>Accused me of being a lousy person</td>
</tr>
<tr>
<td>Told me that they don’t like my personality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Specific Aggression Displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulted me</td>
</tr>
<tr>
<td>Made me feel bad</td>
</tr>
<tr>
<td>Lost their temper toward me</td>
</tr>
<tr>
<td>Said strong, negative things about me</td>
</tr>
<tr>
<td>Told me off</td>
</tr>
<tr>
<td>Offended me</td>
</tr>
<tr>
<td>Was mean or cruel toward me</td>
</tr>
<tr>
<td>Yelled, screamed, or shouted at me</td>
</tr>
<tr>
<td>Swore at me</td>
</tr>
<tr>
<td>Flew off the handle at me</td>
</tr>
<tr>
<td>Threatened me</td>
</tr>
</tbody>
</table>
1, all of the items focused on the use of language. Items from the contributing scales that discussed physical assault, sexual coercion, or injury were not included. In addition, pro-social and benevolent items were excluded, and the scale concentrated on conflictual and aggressive behaviors. Finally, the items classified verbal aggression as a behavior; items that described a communication trait or aggressive feelings, attitudes, or thoughts were omitted. On the basis of the articulated criteria, items were selected from the Verbal Aggressiveness Scale, the Conflict Tactics Scale, and the Aggression Questionnaire to capitalize on the virtues of those measures while avoiding their respective pitfalls.

Measurement Concerns Measuring Cortisol

The measurement of cortisol requires appropriate procedures prior to collection, during the collection process, and when handling and storing samples to obtain the highest quality results and accuracy in the measurement of cortisol. Prior to the collection of saliva samples, it is necessary to consider what kinds of activities participants engaged in and what substances participants consumed. Activities such as exercising, taking an exam, and arguing with a romantic partner can influence cortisol levels because of cortisol’s sensitivity to stressors (McBurnett, Lahey, Rathouz, & Loeber, 2000). In addition, researchers need to document participants’ consumption of alcohol, dairy, sugar, acidity, caffeine, nicotine, and prescription and over-the-counter medications to avoid contaminating substances in the saliva. These substances can compromise the amino assay results and cause inaccuracy in the measures of cortisol. Finally, blood in the saliva can contaminate the sample. Participants should not brush their teeth 45 minutes prior to collection, dental work should not be performed 48 hours prior to collection, and research participants should be screened for oral health problems or injuries.
It is also necessary to be precise when collecting saliva samples. Most studies of cortisol have not controlled for time of day and others have instead relied on approximations. This error occurs most frequently in cortisol reactivity studies. As stated previously in Chapter 3, the time of day that the saliva sample is collected accounts for approximately 70% of the variation in cortisol levels (Adam & Gunnar, 2001). As a result, studies measuring cortisol need to collect samples at the same time points across participants.

Finally, it is imperative that researchers handle and store the samples appropriately after collection. Upon initial receipt of the sample from a participant, it is important to cap the sample tightly to protect the integrity of the saliva sample. In addition, samples should be kept at low temperatures immediately after collection and moved to a freezer where the temperature is set to -20ºC or lower for storage to prevent bacterial growth (Whembolua, Granger, Singer, Kivlighan, & Marguin, 2006). To analyze the samples, the saliva will need to be thawed; however, freeze-thaw cycles should be minimized.

The collection of saliva samples to study cortisol presents measurement concerns for researchers. The measurement of cortisol requires appropriate procedures prior to collection, during the collection process, and when handling and storing samples to obtain the highest quality results in the measurement of cortisol. It is critical that researchers follow and report their procedures to ensure the validity and reliability of the samples collected.

**Method**

The present study utilized a dyadic interaction design to examine the effect of conflict between dating partners on physiological stress reactivity. In addition, the study examined childhood exposure to familial verbal aggression, features of the conflict interaction, and individual differences of the interactants as factors relevant to the response to conflict. To test
the effects of childhood exposure to familial verbal aggression, cognitive ability, and emotional competence, participants were asked to complete measures assessing the variables of interest. Participants then engaged in a conflict interaction with a romantic dating partner. The source of the conflict was identified by the couple prior to the interaction and the most distressing topic of conflict was selected for discussion. Participants provided saliva samples before the conflict interaction, 15 minutes after the conflict, and 20 minutes after the conclusion of the interaction. Saliva samples were used to measure the individual’s physiological stress response to the conflict interaction. In the section that follows, I discuss the study that was employed in more detail describing the participants, procedures, and measures.

**Participants**

Participants were recruited from a general education communication course to participate in the study as part of a class assignment. First, students were asked to complete a screening survey which inquired if they were currently in a romantic relationship. If so, they reported on the length of their relationship, the location of their partner, and their partner’s willingness to participate in the research study. Finally, students reported any instances of physical aggression with their dating partner.

The sample for the study was comprised of individuals who reported being involved with their romantic partners for longer than three months. Individuals who reported being in a relationship for less than three months were excluded because they are unable to demonstrate a substantial commitment to the relationship and investment in the relationship. In addition, all participants reported that their partners were geographically close to the university. This ensured that both participants were able to report to the laboratory for participation. Participants also reported that their partners were willing to participate in the study; participation was voluntary.
Finally, students who reported any instances of physical aggression in their romantic relationships were excluded from participation. This was done to reduce the possibility of physical violence and dangerous conflict escalation during participation. Participants who were recruited from the research pool received 2% credit for completion of the study. Their partners were compensated $10.00 for their participation.

The sample for the study was composed of 104 participants (54 females, 50 males). The ages of the participants ranged from 18 to 31 years old ($M = 20.93, SD = 0.99$). The majority of the sample identified as White ($n = 85, 81.73\%$), but also included individuals who identified as Asian ($n = 7, 6.73\%$), Black ($n = 5, 4.81\%$), Hispanic ($n = 5, 4.81\%$), and other ($n = 2, 1.92\%$). Individuals primarily reported being juniors ($n = 39, 37.50\%$), with fewer freshmen ($n = 12, 11.54\%$), sophomores ($n = 19, 18.27\%$), seniors ($n = 17, 16.35\%$), and non-traditional students ($n = 17, 16.35\%$). The majority of the sample were in heterosexual relationships ($n = 50, 92.59\%$), with a limited number of homosexual relationships ($n = 2, 7.41\%$). Finally, individuals reported being romantically involved with their partner for a range of 3 months to 8 years ($M = 1.28, SD = 1.42$).

**Procedures**

Each participant was asked to bring their romantic partner with them to the laboratory for their respective data collection session. To avoid the influence of the diurnal variation in cortisol, data collection sessions occurred between 2:00 p.m. and 6:00 p.m. Twenty-four hours prior to their data collection session, both participants received an email briefly describing the purpose and procedures of the research project. Individuals were told that they would be providing 3 saliva samples during their participation. As such, it was important that the participants did not engage in certain kinds of activity and food consumption before participation.
to avoid contamination of the saliva samples. Specifically, participants were told not to have
dental work performed 48 hours prior to coming to the lab; not to consume alcohol, dairy, sugar,
caffeine, nicotine, or any medication 1 hour prior to arrival at the lab for participation; and not to
exercise or brush their teeth 45 minutes prior to participation.

**Pre-interaction procedure.** Upon arriving to the laboratory, participants were separated
from their romantic partners. Participants were then administered informed consent forms.
After the completion of the informed consent forms, participants provided their first saliva
sample. Saliva samples were collected using oral swabs. Participants were instructed to remove
the oral swab from the packaging and to place the oral swab under their tongue. Participants
were asked to keep the oral swab under their tongues until the swab felt fully saturated. This
process typically took 1-2 minutes, but did extend up to 5 minutes before the participants could
ensure saturation. When the oral swab was saturated, individuals placed the swab in a vial and
capped the vial securely. The samples were immediately frozen after collection. This first saliva
sample was used as a baseline measure of cortisol.

Next, participants completed a short survey which asked them to identify three areas of
conflict that are most stressful in their romantic relationship. Participants then completed a
series of questions about each of the areas of conflict individually. Specifically, participants
reported how long the conflict has been stressful, how stressful the conflict is in their life
currently, what aspect of their life the conflict is related to, and if they were willing to discuss the
conflict. After both partners completed this questionnaire, I selected the most distressing conflict
that the participants were willing to discuss which could have been reported by either partner.
This topic of conflict served as the stimuli for the interaction.
Following the identification of topics of conflict survey, participants completed a lengthier online questionnaire. This questionnaire first collected demographic information. Next, participants reported on their activity and food consumption prior to arriving at the lab. This information was collected to ensure that the participants complied with the instructions that were emailed to them 24 hours prior to the data collection session. Finally, the survey captured the variables of interest including a history of familial verbal aggression, perceived cognitive ability, and emotional competence.

**Interaction.** The participants were reunited with their romantic partners for the interaction. Before beginning the 10-minute conflict interaction, I instructed the dyad to discuss a particular area of conflict. Again, this topic of conflict was picked from the conflicts identified by the couple, and the most distressing conflict that the participants were willing to discuss was selected. This procedure was used to ensure that the topic of conflict was relevant to the couple and a significant source of stress for the couple. The couple was then left alone in the laboratory to discuss that topic of conflict. After 10-minutes, I re-entered the laboratory and separated the participants.

**Post-interaction procedure.** Participants were told to relax and sit quietly for 15 minutes. After 15 minutes, participants provided a second salivary cortisol sample. Participants were then asked to relax for 5 additional minutes. After 5 minutes, participants provided a third and final salivary cortisol sample. The samples were immediately frozen after collection. According to Powers, Pietromonaco, Gunlicks, and Sayer (2006), it takes between 15-20 minutes for cortisol to enter the saliva after being secreted in response to a stressor. Accordingly, I collected saliva samples 15 minutes and 20 minutes after the stressor to ensure a more valid and reliable measure of the body’s physiological reaction to the stress of a conflict interaction with a
romantic partner. The second saliva sample and third saliva sample were used as a reactivity measure of cortisol.

Next, participants completed a post-interaction questionnaire. This questionnaire asked about the individual’s perception of the conflict interaction. Specifically, the survey asked about the use of distributive, avoidant, and integrative tactics; dominant and affiliative behavior; aggressive intent; and arousal. The survey also asked about the realism of the conversation and how typical the conversation was for the couple.

After the completion of the post-interaction questionnaire, the couple was reunited and debriefed on their participation in the research study. During the debriefing session, I reviewed the purpose and procedures of the study with the couple. In addition, I made sure that the couple was not upset as a result of their participation. Finally, participants were provided with information regarding campus and local counseling services prior to leaving the laboratory.

Measures

Cortisol reactivity. The dependent variable of cortisol reactivity was operationalized as change in salivary cortisol levels, and two calculations of cortisol reactivity were computed. The first measure of change was area under the curve with respect to increase (AUC$_{I}$). This measure assessed the overall intensity of change over time and can be used to measure sensitivity (Pruessner, Kirschbaum, Meinlschmid, & Hellhammer, 2003). The second measure of change was area under the curve with respect to the ground (AUC$_{G}$). This measure addressed whether changes in cortisol are a result of over time hormonal output. These two measures were calculated using the following formulas:

\[
\text{AUC}_I = \left( \sum_{i=1}^{n-1} \frac{(m_{i} + m_{i+1})}{2} \right) - (n-1) \times m_1
\]
\[ AUC_G = \sum_{n=1}^{n-1} \frac{(m_{i+1} + m_i) * t_i}{2} \]

Both area under the curve measures were used as the dependent variable in the subsequent analyses.

**History of familial verbal aggression.** As discussed earlier in this chapter, a history of familial verbal aggression was measured utilizing elements from three previous measures of verbal aggression, namely the Verbal Aggressiveness Scale (Infante & Wigley, 1986), the Conflict Tactics Scale (Straus et al, 1996), and the Aggression Questionnaire (Buss & Perry, 1992). Participants were asked to focus on experiences during middle childhood (i.e., third, fourth, fifth, and sixth grade) to capture a history of familial verbal aggression and conflict, and respond to 20 Likert-type items with an eight-point response format (0 = *This has never happened*, 1 = *Not within a year, but it did happen before*, 2 = *Once a year*, 3 = *Twice a year*, 4 = *3-5 times a year*, 5 = *6-10 times a year*, 6 = *11-20 times a year*, 7 = *More than 20 times a year*). Items measured the family members’ engagement in verbally aggressive communication behaviors such as “Attacked my intelligence” and “Insulted me” toward the participant. The scale produced a two-factor solution comprised of self-concept attacks (\(M = 3.73, SD = 0.76, \alpha = 0.86\)) and non-specific aggression displays (\(M = 3.02, SD = 1.38, \alpha = 0.87\)); however, the two factors were aggregated in the tests of the hypotheses. The CFA results provided support for this decision (\(M = 3.25, SD = 1.16, \alpha = 0.94\)).

**Conflict intensity.** To operationalize conflict intensity, trained judges rated the communication of each participant during the 10-minute conflict interactions. All conflict interactions were first transcribed. Next, judges participated in training sessions together. During the training sessions, we discussed the content of each code, practiced the rating task on a
variety of interactions, and discussed interactions with low agreement on the rating scale. Judges were then asked to rate a small portion of the sample independently. Training continued until reliability was achieved on all of the judgments ($\alpha > .85$ on all indicators). When adequate reliability was achieved, judges completed 20 videos per week. Each week, reliability was reassessed until the judges completed rating the entire sample.

During the rating task, the judges were instructed to first watch the video of the interaction in its entirety, following along with the transcript of the video. Next, judges watched the video and focused on one of the two participants. After watching the video, judges made one judgment about the intensity of the participant’s conflict communication and recorded that judgment. Then, judges watched again focusing on the other participant. At the conclusion of the video, judges made the same judgment about the other participant’s communication and recorded that judgment.

Conflict intensity was defined as the existence of incompatible activity. Although conflict can be manifested in a variety of ways, the judges were asked to focus on verbalized conflict, which is also referred to as expressed disagreement, arguing, or verbal aggression. Judges used the following scale to evaluate the intensity of the conflict interaction ($1 = \text{No conflict at all}, 3 = \text{Moderately intense conflict}, 5 = \text{Extremely intense conflict}$). The intraclass correlation coefficients indicated that the 5 judges’ evaluations were reliable on the intensity of conflict indicator ($\rho = 0.92$, $M = 3.01$, $SD = 0.64$).

After all the videos were rated for conflict intensity, judges then rated each video for the four discriminators of conflict intensity. The rating task mirrored the assessment of conflict intensity; however, in this task judges were asked to make four judgments about the conflict. The four judgments were modeled after Resick and colleagues (1981) discriminators of conflict
intensity. Judges indicated how loud, critical, disagreeable, and sarcastic each participant’s communication was during conflict interaction. Specifically, judges used the following scales to evaluate the discriminators of conflict (1 = *Soft*, 5 = *Loud*; 1 = *Supportive*, 5 = *Critical*; 1 = *Cooperative*, 5 = *Disagreeable*; 1 = *Sincere*, 5 = *Sarcastic*). The intraclass correlation coefficients indicated that the five judges’ evaluations were reliable on all four indicators: soft to loud ($\rho = 0.95, M = 2.87, SD = 0.79$), supportive to critical ($\rho = 0.94, M = 2.91, SD = 0.96$), cooperative to disagreeable ($\rho = 0.92, M = 3.01, SD = 0.87$), sincere to sarcastic ($\rho = 0.87, M = 2.67, SD = 1.21$).

**Perceived cognitive ability.** Participants responded to the cognitive competence subscale from Harter’s (1983) Perceived Competence Scale to assess their perceived intellectual ability. Specifically, participants were asked to reflect on their ability in school, their ability to understand and remember things, and their intelligence in comparison to others (e.g., “I am good at schoolwork”). Participants responded to these statements using a five-point Likert-type scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Neutral*; 4 = *Agree*; 5 = *Strongly agree*). The CFA results indicated that seven of these items formed a unidimensional composite scale ($M = 4.01, SD = 0.48$, $\alpha = 0.79$).

**Emotional competence.** Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim’s (1997) Emotional Intelligence Scale was used to assess the participant’s emotional aptitude. Participants rated their ability to manage emotions and emotional situations including the discussion of personal problems, being a confidant, mood swings, and the interpretation of non-verbal messages (e.g., “I know when to speak about my personal problems to others”). Participants responded to these statements using a five-point Likert-type scale (1 = *Strongly*
disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree). The CFA results indicated that 14 of these items formed a unidimensional composite scale ($M = 3.71$, $SD = 0.48$, $\alpha = 0.84$).

Relational distress. As discussed in Chapter 3, relational distress is an important factor that influences the couple’s experience of the conflict interaction. Although I did not advance hypotheses about the influence of relational distress, I measured relational distress and covaried the influence of that variable in my subsequent analyses to more accurately assess the influence of the variables of interest. The Dyadic Adjustment Scale (Spanier, 1976) was used to assess the amount of distress occurring within the participants’ romantic relationship. Participants reported on the amount of agreement or disagreement ($5 = Always agree$, $4 = Almost always agree$, $3 = Occasionally disagree$, $2 = Frequently disagree$, $1 = Almost always disagree$, $0 = Always disagree$) that existed within the relationship for a variety of topics, including matters of recreation, religious matters, sexual intimacy, and career decisions. The CFA results indicated that 13 of these items formed a unidimensional composite scale ($M = 3.75$, $SD = 0.45$, $\alpha = 0.76$).
CHAPTER FIVE

The methods described in Chapter 4 provided the data to test the seven hypotheses advanced in Chapter 2 and Chapter 3. Specifically, I argued that exposure to verbal aggression in familial conflicts during childhood is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol (H1). I also suggested that conflict intensity is positively associated with the amplitude of stress reactivity to conflict (H2) and that this association is moderated by a history of exposure to verbal aggression in familial conflicts during childhood (H3). In addition, I hypothesized a negative relationship between cortisol reactivity and cognitive ability (H4) and emotional competence (H6). Finally, I proposed that conflict intensity mediates the association between cognitive ability and stress reactivity (H5), and the association between emotional competence and stress reactivity (H7). After describing a series of preliminary analyses, this chapter reports the substantive analyses and results that were conducted to test the previously proposed hypotheses.

Preliminary Analyses and Results

Six sets of preliminary analyses were conducted. The first set of analyses was conducted to assess the realism of the conflict interaction. The next group of preliminary analyses evaluated the influence of potential causes for error within the measures of cortisol. In addition, I examined the correlations between the overall conflict intensity variable and the four discriminators of conflict. Then, I evaluated the correlations among all of the variables of interest. Next, preliminary analyses investigated the influence of relational distress on the variables of interest. The final preliminary analysis described the correlations among all of the variables of interest for male and female participants.
**Perceived Realism of the Interaction**

The first set of preliminary analyses was conducted to evaluate the realism of the conflict interaction. In the post-interaction questionnaire, participants indicated how typical the conflict interaction was as compared to other conflicts that they have experienced with their romantic partner (e.g., “This conversation was similar to others I’ve had with my partner”). Participants responded to these statements using a five-point Likert-type scale where higher numbers reflected more agreement (*1 = Strongly disagree, 5 = Strongly agree*). All participants perceived the interactions as moderately realistic (*M* = 4.12, *SD* = 0.87). In addition, a one-sample t-test revealed that the mean realism score was significantly greater than the scale’s midpoint, *t*(102) = 16.60, *p* < .001.

**Evaluating Sources of Error in Cortisol**

The next set of preliminary analyses was done to evaluate potential sources of error in the cortisol samples that would disturb the validity of the measures. First, the distribution of the cortisol samples was assessed for normality. One participant was an extreme outlier for the first measure of cortisol (*M* = 0.17, *SD* = 0.10, outlier = 0.58). In addition, one participant was an extreme outlier for the third measure of cortisol (*M* = 0.37, *SD* = 0.11, outlier = 0.74). Both participants’ data were excluded from the analyses. The removal of the extreme measures produced a more normally distributed sample.

In addition, I examined the participant’s reported behavior one hour prior to the research session based on the screening question responses. Four participants reported eating a meal within 1 hour of saliva collection. To evaluate the impact of this behavior, I compared the cortisol samples from the participants who reported engaging in the behavior to the cortisol samples from the participants who did not. t-test results demonstrated that eating a meal one
hour prior to participation did not significantly impact the three cortisol samples, \( t (100) = 1.90, ns \), \( t (100) = 0.70, ns \), \( t (100) = 1.12, ns \). In addition, 20 participants stated that they had taken prescription medication prior to saliva collection. I compared the cortisol samples from the participants who reported taking prescription medication to the cortisol samples from the participants who did not to determine if this behavior was influential. \( t \)-test results demonstrated that this behavior did not significantly impact the three cortisol samples, \( t (100) = 1.11, ns \), \( t (100) = -0.61, ns \), \( t (100) = -0.01, ns \). Finally, 27 participants reported using hormone contraceptives. To assess the effect of taking hormone contraceptives, I compared the cortisol samples from the participants who reported taking hormone contraceptives to the cortisol samples from the participants who did not. \( t \)-test results demonstrated that this behavior did not significantly impact the three cortisol samples, \( t (100) = -0.73, ns \), \( t (100) = -0.62, ns \), \( t (100) = -0.50, ns \).

As a final test to evaluate the potential sources of error in the cortisol measures, I tested the influence of participant sex in the measures of cortisol. There were no statistically significant sex differences in the first cortisol sample, \( t (100) = 0.88, ns \), or the third cortisol sample, \( t (100) = 1.85, ns \); there was a significant sex difference in the second cortisol sample, \( t (100) = 2.02, p < .05 \). The results demonstrated that males had significantly higher cortisol levels at the time of the second saliva collection \( (M = 0.30, SD = 0.11) \) than females \( (M = 0.26, SD = 0.11) \).

**Discriminators of Conflict**

The next set of preliminary analyses examined the correlations between the overall conflict intensity variable and other indicators of conflict intensity. First, I tested the correlations between the overall conflict intensity variable and the participant’s post-interaction questionnaire self-report of distributive, avoidant, and integrative tactics used during the conflict. The use of
distributive tactics was significantly and positively related to conflict intensity ($r = .40, p < .001$). The use of avoidant tactics was not significantly related to conflict intensity ($r = .07, ns$). Lastly, the use of integrative tactics was significantly and negatively related to conflict intensity ($r = -.24, p < .05$).

In addition, I tested the correlations between the overall conflict intensity variable and the four discriminators of conflict. The soft to loud measure was significantly and positively related to conflict intensity ($r = .65, p < .001$). In addition, the supportive to critical measure was significantly and positively related to conflict intensity ($r = .72, p < .001$). Conflict intensity was also significantly and positively related to the cooperative to disagreeable measure ($r = .74, p < .001$). Finally, the sincere to sarcastic measure was significantly and positively related to conflict intensity ($r = .60, p < .001$). These patterns speak to the validity of the overall conflict intensity measure.

**Correlations among the Variables of Interest**

The later preliminary analysis examined the correlations among all of the variables of interest. Table 2 reports the correlations for female participants above the diagonal, the correlations for male participants below the diagonal, and the correlations between female participants and male participants on the diagonal. Relevant to H1, exposure to verbal aggression in familial conflicts during childhood and stress reactivity as calculated by $\text{AUC}_1$ and $\text{AUC}_G$ were significantly and negatively correlated for females but not for males. Conflict intensity was significantly and positively correlated with stress reactivity as calculated by $\text{AUC}_1$ and $\text{AUC}_G$ for both sexes (H2). Cognitive ability and stress reactivity as calculated by $\text{AUC}_1$ were significantly and negatively correlated for males but not for females (H4). Cognitive ability and stress reactivity as calculated by $\text{AUC}_G$ were not significantly correlated for either sex.
Table 2

Correlations among Variables in the Study

<table>
<thead>
<tr>
<th>Measure</th>
<th>AUC₁</th>
<th>AUC₂</th>
<th>Familial VA</th>
<th>Conflict intensity</th>
<th>Cognitive ability</th>
<th>Emotional competence</th>
<th>Relational distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUC₁</td>
<td>.14</td>
<td>.62**</td>
<td>-.30**</td>
<td>.24*</td>
<td>-.18</td>
<td>-.17</td>
<td>.16</td>
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<tr>
<td>AUC₂</td>
<td>.36**</td>
<td>.13</td>
<td>-.27**</td>
<td>.31**</td>
<td>-.14</td>
<td>-.31**</td>
<td>.26**</td>
</tr>
<tr>
<td>Familial VA</td>
<td>-.08</td>
<td>-.10</td>
<td>.10</td>
<td>.15</td>
<td>.04</td>
<td>.01</td>
<td>.20*</td>
</tr>
<tr>
<td>Conflict intensity</td>
<td>.21*</td>
<td>.22*</td>
<td>.11</td>
<td>.83**</td>
<td>-.26*</td>
<td>-.29**</td>
<td>.29**</td>
</tr>
<tr>
<td>Cognitive ability</td>
<td>-.23*</td>
<td>-.10</td>
<td>.06</td>
<td>-.26**</td>
<td>.14</td>
<td>.10</td>
<td>.03</td>
</tr>
<tr>
<td>Emotional competence</td>
<td>-.15</td>
<td>-.23*</td>
<td>.10</td>
<td>-.22*</td>
<td>.11</td>
<td>.16</td>
<td>-.10</td>
</tr>
<tr>
<td>Relational distress</td>
<td>.11</td>
<td>.21*</td>
<td>.25**</td>
<td>.23*</td>
<td>-.03</td>
<td>-.18</td>
<td>.33**</td>
</tr>
</tbody>
</table>

Note. Female correlations are above the diagonal; male correlations are below the diagonal; correlations between female and male participants are on the diagonal.

*p < .05, **p < .01
(H4). Related to H6, emotional competence and stress reactivity as calculated by AUC₁ were not significantly correlated for either gender; however, emotional competence and stress reactivity as calculated by AUC₉ were significantly and negatively correlated for males and females. Pertinent to H5, cognitive ability and conflict intensity were significantly and negatively correlated for males and females. Finally, emotional competence and conflict intensity were significantly and negatively correlated for males and females (H7).

**Relational Characteristics**

Next, I examined the correlations between the variables of interest and relational distress (see Table 2). Relational distress was not significantly correlated with AUC₁ for male and female participants. Conversely, relational distress was significantly and positively correlated with AUC₉ for male and female participants. Relational distress was also significantly and positively correlated with familial verbal aggression and conflict intensity for both male and female participants. Finally, cognitive ability and emotional competence were not significantly related to relational distress for male and female participants.

As demonstrated by previous research and supported in the preliminary analysis, relational distress is influential to the experience of conflict. As a result, I covaried relational distress from AUC₉, familial verbal aggression, and conflict intensity to more accurately assess the influence of the variables of interest. To do so, I regressed AUC₉, familial verbal aggression, and conflict intensity individually onto relational distress and saved the residuals from each regression analysis. I used the residuals of each of these regression models as the substantive variables in the subsequent analyses.
Male and Female Correlations

The subsequent preliminary analysis examined the correlations among all of the variables of interest for male and female participants. Table 2 reports the correlations between female participants and male participants on the diagonal. AUC$_1$ was not significantly correlated for males and females ($r = .14, \text{ ns}$). Similarly, AUC$_G$ was not significantly correlated for male and female participants ($r = .13, \text{ ns}$). Male and female reports of familial verbal aggression were not significantly correlated ($r = .10, \text{ ns}$). In contrast, judges ratings of conflict intensity were significantly and positively correlated for male and female participants ($r = .83, p < .001$).

Cognitive ability was not significantly correlated for males and females ($r = .14, \text{ ns}$). Male and female reports of emotional competence were not significantly correlated ($r = .16, \text{ ns}$). Finally, relational distress was significantly and positively correlated for males and female ($r = .33, p < .001$).

Because of the high correlation between male and female conflict intensity, the variables were collapsed to create one variable of conflict intensity. This combined variable is used in the subsequent analyses.

Substantive Analysis

To test each hypothesis, I used structural equation modeling (SEM) procedures (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Exposure to verbal aggression in familial conflict during childhood, conflict intensity, cognitive ability, and emotional competence were modeled as single item observed variables predicting a latent variable. Each observed variable’s error variance was estimated using $(1 - \alpha)\sigma^2$. In addition, interaction terms were computed for male verbal aggression and conflict intensity, female verbal aggression and conflict intensity, male cognitive ability and male emotional competence, and female cognitive
ability and female emotional competence. Each interaction term’s error variance was estimated using \[ \sqrt{(1 - \alpha_1)} \times \sqrt{(1 - \alpha_2)} \] \( \sigma^2 \).

Male and female analyses were run together in an Actor-Partner-Interdependence model to account for the dependence in the data. Paths were specified from each individual’s independent variable to the same individual’s dependent variable to reflect the actor effects. In addition, paths were specified from each individual’s independent variable to the partner’s dependent variable to model the partner effects. Finally, interdependence was indicated by correlations between the independent variables and correlations between the residual variables. In all the models, the paths that represented the partner influence were non-significant. Accordingly, the models were all re-run with these paths removed.

Finally, each hypothesis was tested by two analyses: one in which AUC\(_I\) was the measure of stress reactivity and the other with AUC\(_G\) as the outcome variable. As discussed previously, AUC\(_I\) is a measure of change with respect to increase and AUC\(_G\) is an indicator of change in relation to the ground (Pruessner et al., 2003). To evaluate the fit of the structural models, I utilized the following criteria: \( \chi^2 / \text{df} \) test < 3, CFI greater than .90, and RMSEA less than .10 (Browne & Cudeck, 1993; Kline, 1998).

**Test of Hypotheses**

H1 hypothesized that exposure to verbal aggression in familial conflicts during childhood is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol. To create the structural models to test this hypothesis, I specified paths from male familial verbal aggression to male stress reactivity and from female familial verbal aggression to female stress reactivity (see Figure 1). These paths evaluated H1.
Figure 1. A model linking familial verbal aggression and stress reactivity.

AUC$_I$ Model: $\chi^2$/df = 0.12, CFI = .95, RMSEA = .04; AUC$_G$ Model: $\chi^2$/df = 0.16, CFI = .95, RMSEA = .04

*p < .05, **p < .01
In the structural model using AUC_I as the outcome variable, results indicated that the model fit the data adequately, $\chi^2$/df = 0.12, CFI = .95, RMSEA = .04. Similarly, results demonstrated that the structural model that utilized AUC_G as the dependent variable also fit the data sufficiently, $\chi^2$/df = 0.16, CFI = .95, RMSEA = .04. Relevant to H1, male familial verbal aggression was not significantly associated with male AUC_I, $\beta = -.13$, ns, or male AUC_G, $\beta = -.06$, ns; however, female familial verbal aggression was significantly and negatively associated with female AUC_I, $\beta = -.27$, $p < .01$, and female AUC_G, $\beta = -.28$, $p < .01$.

H2 hypothesized that conflict intensity is positively associated with the amplitude of stress reactivity to verbally aggressive messages, as measured by salivary cortisol, in interactions between college-aged dating partners. Recall that I created a composite variable of conflict intensity because of the high correlation between male and female conflict intensity. To build the structural model to test H2, I specified paths from conflict intensity to male stress reactivity and to female stress reactivity (see Figure 2).

The model was saturated and fit statistics were not provided, but the path coefficients give estimates of the relationships between variables. Related to H2, the standardized path coefficients show that conflict intensity was significantly and positively associated with male AUC_I, $\beta = .20$, $p < .05$, and female AUC_I, $\beta = .27$, $p < .01$. In addition, conflict intensity was significantly and positively associated with male AUC_G, $\beta = .26$, $p < .05$, and female AUC_G, $\beta = .31$, $p < .01$.

H3 hypothesized that a history of exposure to verbal aggression in familial conflicts during childhood moderates the association between conflict intensity and the amplitude of stress reactivity to verbally aggressive messages, such that the magnitude of the positive association is
Figure 2. A model linking conflict intensity and stress reactivity.

*p < .05, **p < .01
reduced when a history of exposure to verbal aggression in familial conflicts during childhood is high, rather than low. To create the structural model to test this hypothesis, I specified paths from male familial verbal aggression to male stress reactivity and from female familial verbal aggression to female stress reactivity (see Figure 3 and Figure 4). I also specified paths from conflict intensity to male stress reactivity and female stress reactivity. In addition, paths were specified from the term representing the interaction between male familial verbal aggression and conflict intensity to male stress reactivity and from the term representing the interaction between female familial verbal aggression and conflict intensity to female stress reactivity. These paths evaluate the moderating influence of a history of familial verbal aggression described in H3.

In the structural model using AUC_I as the outcome variable, results indicated that the model fit the data adequately, $\chi^2/df = 1.75$, CFI = .98, RMSEA = .02. Likewise, results demonstrated that the structural model that utilized AUC_G as the dependent variable also fit the data sufficiently, $\chi^2/df = 1.96$, CFI = .97, RMSEA = .02. Relevant to H3, the interaction between male history of verbal aggression and conflict intensity was not significantly associated with male AUC_I, $\beta = -.17$, ns, but it was significantly associated with male AUC_G, $\beta = -.27$, $p < .01$. In addition, the interaction between female history of verbal aggression and female conflict intensity was significantly associated with female AUC_I, $\beta = -.31$, $p < .01$, and female AUC_G, $\beta = -.27$, $p < .01$. Thus, three of the four predicted interactions were statistically significant.

To determine the form of the significant interactions, I plotted the regressions of stress reactivity on conflict intensity at different levels of a history of familial verbal aggression. I ran hierarchical multiple regression analyses with stress reactivity as the dependent variable. On the first step of the analyses, I entered conflict intensity and a history of familial verbal aggression. The second step evaluated the product term that represented the two-way interaction between
Figure 3. A model linking familial verbal aggression, conflict intensity, and the interaction between familial verbal aggression and conflict intensity, and stress reactivity (AUC$_I$).

$\chi^2$/df = 1.75, CFI = .98, RMSEA = .02

*p < .05, **p < .01
Figure 4. A model linking familial verbal aggression, conflict intensity, and the interaction between familial verbal aggression and conflict intensity, and stress reactivity (AUC<sub>G</sub>).

\[ \chi^2 / df = 1.96, \, CFI = .97, \, RMSEA = .02 \]

\*p < .05,  \**p < .01
conflict intensity and a history of familial verbal aggression. While this analysis ignores the
dependence in the data, it is sufficient to establish the form of the interactions.

The structural model results demonstrated that the interaction between male history of
verbal aggression and conflict intensity was significantly associated with male \( \text{AUC}_G \), \( \beta = -.27, p < .01 \). Similarly, the regression results revealed a significant interaction between conflict
intensity and male history of familial verbal aggression, \( \beta = -.26, p < .05 \), when predicting male
\( \text{AUC}_G \). As predicted by H3, the magnitude of the positive association between conflict intensity and male \( \text{AUC}_G \) was greater when a history of exposure was low (-1 SD), rather than high (+1
SD; see Figure 5).

Consistent with the structural model results, the regression analysis showed a significant
interaction between conflict intensity and female history of familial verbal aggression, \( \beta = -.37, p < .01 \), when predicting female \( \text{AUC}_I \). As predicted by H3, the magnitude of the positive
association between conflict intensity and female \( \text{AUC}_I \) was greatest when a history of exposure was low (-1 SD). In fact, the regression lines indicated that the association between conflict intensity and female \( \text{AUC}_I \) was negative when a history of exposure was high (+1 SD; see Figure 6).

Finally, the structural model results demonstrated that the interaction between female
history of verbal aggression and female conflict intensity was significantly associated with
female \( \text{AUC}_G \), \( \beta = -.27, p < .01 \). Similarly, the regression results revealed a significant
interaction between conflict intensity and female history of familial verbal aggression, \( \beta = -.29, p < .01 \), when predicting female \( \text{AUC}_G \). In support of H3, the magnitude of the positive
association between conflict intensity and female \( \text{AUC}_G \) was greater when a history of exposure was low (-1 SD), rather than high (+1 SD; see Figure 7).
Figure 5. Conflict intensity as a predictor of male stress reactivity (AUCG$_G$) moderated by male familial verbal aggression.
Figure 6. Conflict intensity as a predictor of female stress reactivity (AUCI) moderated by female familial verbal aggression.
Figure 7. Conflict intensity as a predictor of female stress reactivity (AUC₉) moderated by female familial verbal aggression.
H4 hypothesized that cognitive ability is negatively associated with the amplitude of stress reactivity to conflict interactions between college-aged dating partners, as measured by salivary cortisol. Correspondingly, H6 posited that emotional competence is negatively associated with stress reactivity to verbally aggressive messages. To construct the structural models to test H4 and H6, I specified paths from male cognitive ability and male emotional competence to male stress reactivity and from female cognitive ability and female emotional competence to female stress reactivity (see Figure 8 and Figure 9).

In the structural model using AUC\textsubscript{1} as the outcome variable, results indicated that the model fit the data adequately, $\chi^2$/df = 2.93, CFI = .96, RMSEA = .03. Likewise, results demonstrated that the structural model that utilized AUC\textsubscript{G} as the dependent variable also fit the data satisfactorily, $\chi^2$/df = 2.98, CFI = .96, RMSEA = .04. Relevant to H4, the standardized path coefficients show that male cognitive ability was significantly and negatively associated with male AUC\textsubscript{1}, $\beta = -.20$, $p < .05$, but not significantly associated with male AUC\textsubscript{G}, $\beta = -.07$, ns. In addition, female cognitive ability was significantly and negatively associated with female AUC\textsubscript{1}, $\beta = -.22$, $p < .05$, but not significantly associated with female AUC\textsubscript{G}, $\beta = -.13$, ns. Related to H6, the standardized path coefficients show that male emotional competence was not significantly associated with male AUC\textsubscript{1}, $\beta = -.16$, ns, but was significantly and negatively associated with male AUC\textsubscript{G}, $\beta = -.22$, $p < .05$. Moreover, female emotional competence was not significantly associated with female AUC\textsubscript{1}, $\beta = -.14$, ns, but was significantly and negatively associated with female AUC\textsubscript{G}, $\beta = -.32$, $p < .01$.

H5 hypothesized that conflict intensity mediates the association between cognitive ability and the amplitude of stress reactivity to verbally aggressive messages, as measured by salivary cortisol, in interactions between college-aged dating partners. Congruently, H7 posited that
Figure 8. A model linking cognitive ability and emotional competence, and stress reactivity (AUC).  

$\chi^2/df = 2.93$, CFI = .96, RMSEA = .03

*p < .05, **p < .01
Figure 9. A model linking cognitive ability and emotional competence, and stress reactivity (AUC_G).

χ²/df = 2.98, CFI = .96, RMSEA = .04

*p < .05, **p < .01
conflict intensity mediates the association between emotional competence and stress reactivity to verbally aggressive messages. The first test of mediation is an association between cognitive ability and emotional competence, and stress reactivity. This structural model was constructed previously to test H4 and H6 (see Figure 8 and Figure 9). As previously demonstrated, male and female cognitive ability were significantly and negatively associated with AUC\textsubscript{I}, but not significantly associated with AUC\textsubscript{G}. In addition, male and female emotional competence were significantly and negatively associated with AUC\textsubscript{G}, but not significantly associated with AUC\textsubscript{I}.

The second test of mediation is an association between cognitive ability and emotional competence, and conflict intensity. To create the structural model, I specified paths from male cognitive ability and male emotional competence to conflict intensity (see Figure 10). In addition, I specified paths from female cognitive ability and female emotional competence to conflict intensity.

The model was saturated and fit statistics were not provided, but the path coefficients provide estimates of the relationships between the variables. The standardized path coefficient showed that male cognitive ability was significantly and negatively associated with conflict intensity, $\beta = -.25, p < .05$. Similarly, female cognitive ability was significantly and negatively associated with conflict intensity, $\beta = -.24, p < .05$. Male emotional competence was not significantly associated with conflict intensity, $\beta = -.17, ns$; however, female emotional competence was significantly and negatively associated with female conflict intensity, $\beta = -.33, p < .01$.

The third test of mediation is an association between conflict intensity and stress reactivity. This structural model was constructed previously to test H2 (see Figure 2). As previously demonstrated, conflict intensity was significantly and positively associated with male
Figure 10. A model linking cognitive ability and emotional competence, and conflict intensity.

*p < .05, **p < .01
AUC_I, male AUC_G, female AUC_I, and female AUC_G. In total, the pattern of results suggest that three possible effects could be mediated, specifically, the relationships between male cognitive ability and male AUC_I, female cognitive ability and female AUC_I, and female emotional competence and female AUC_G.

As a final test of mediation, I created a structural model that specified paths from male cognitive ability and male emotional competence to conflict intensity and from conflict intensity to male stress reactivity (see Figure 11 and Figure 12). These paths represent the extent to which conflict intensity mediates the association between male cognitive ability and male emotional competence, and male stress reactivity. I also specified paths from male cognitive ability and male emotional competence to male stress reactivity to evaluate total versus partial mediation. In addition, I specified paths from female cognitive ability and female emotional competence to conflict intensity and from conflict intensity to female stress reactivity. These paths represent the extent to which conflict intensity mediates the association between female cognitive ability and female emotional competence, and female stress reactivity. I also specified paths from female cognitive ability and female emotional competence to female stress reactivity to evaluate total versus partial mediation.

In the structural model using AUC_I as the outcome variable, results indicated that the model fit the data adequately, $\chi^2/df = 2.45$, CFI = .96, RMSEA = .04. Likewise, results demonstrated that the structural model that utilized AUC_G as the dependent variable also fit the data sufficiently, $\chi^2/df = 2.56$, CFI = .96, RMSEA = .05. Relevant to H5 and H7, the standardized path coefficients show that male cognitive ability ($\beta = -.31, p < .01$) and male emotional competence ($\beta = -.20, p < .05$) were significantly and negatively associated with conflict intensity. In addition, conflict intensity was significantly and positively associated with
Figure 11. A mediation model linking cognitive ability, emotional competence, conflict intensity, and stress reactivity (AUC).

\[ \chi^2/df = 2.45, \ CFI = .96, \ RMSEA = .04 \]

\*p < .05, \*\*p < .01
Figure 12. A mediation model linking cognitive ability, emotional competence, conflict intensity, and stress reactivity (AUC$_G$).

$\chi^2$/df = 2.56, CFI = .96, RMSEA = .05

*p < .05, **p < .01
male AUC_I, $\beta = .22$, $p < .05$ and with male AUC_G, $\beta = .30$, $p < .01$. The standardized path coefficients show that male cognitive ability is significantly and negatively associated with male AUC_I ($\beta = -.21$, $p < .05$), but not significantly associated with male AUC_G, $\beta = -.19$, ns. In addition, male emotional competence was not significantly associated with male AUC_I, $\beta = -.13$, ns, but was significantly and negatively associated with male AUC_G, $\beta = -.24$, $p < .05$. Also related to H5 and H7, the standardized path coefficients show that female cognitive ability ($\beta = -.33$, $p < .01$) and female emotional competence ($\beta = -.27$, $p < .01$) were significantly and negatively associated with conflict intensity. In addition, conflict intensity was significantly and positively associated with female AUC_I, $\beta = .27$, $p < .01$, and with female AUC_G, $\beta = .30$, $p < .01$. The standardized path coefficients show that female cognitive ability ($\beta = -.11$, ns) and female emotional competence were not significantly associated with female AUC_I ($\beta = -.13$, ns) or with female AUC_G ($\beta = -.12$, ns; $\beta = -.11$, ns).
CHAPTER SIX

Ample evidence links childhood exposure to conflict with manifestations of conflict behavior in adulthood. In early research on this topic, McCord, McCord, and Howard (1963) found that aggressive children were significantly more likely to have parents who frequently engaged in conflict. Cappell and Heiner (1990) established that exposure to violence in childhood is positively related to involvement in abusive relationships as an adult. Theoretical arguments suggest that exposure to familial conflict attenuates or “numbs” a child’s reactions to the stress of conflict interactions (Funk et al., 2004). In turn, the child’s inclination to engage in conflict increases because the child no longer views conflict as problematic (Ng-Mak et al., 2002). My dissertation provided a test of this reasoning by assessing the association between reports of childhood exposure to familial conflict and an individual’s physiological stress response during a conflict interaction with a romantic partner. In this chapter, I first review the rationale and previously advanced hypotheses. Next, I describe the findings and implications of the dissertation. In a final section, I contextualize the results of the study by discussing the strengths and the limitations.

Review of Rationale and Hypotheses

Building upon previous work, I suggested that desensitization explains the link between childhood exposure to familial conflict and physiological responses to conflict in adult romantic relationships. Desensitization, which refers to “the attenuation or elimination of cognitive, emotional, and ultimately, behavioral responses to a stimulus” (Rule & Ferguson, 1986, p. 29), has been recognized as a key mechanism in determining the psychological effects of exposure to chronic violence. In particular, children who have experienced chronic physical aggression come to describe violence as a way of life (Guterman & Cameron, 1997; Prothrow-Stith &
Weissman, 1993), and they report that they no longer feel overwhelmed or upset by violence. A similar logic was applied to conceptualizing the physiological effects of exposure to familial conflict in this dissertation.

Using desensitization processes as a general theoretical framework, I reasoned that children’s experience of stress caused by familial conflict can undermine the development of a regulated stress response system. The stress of familial conflict can be understood as an interactive relationship between an individual’s internal and external environment. Normally, during a conflict interaction, the external environment’s demands exceed the individual’s internal adaptive capacity (Cohen, Kessler, & Underwood Gordon, 1995) and trigger a physiological response to the environmental conditions (Dohrenwend & Shrout, 1985). For children who have experienced high levels of familial conflict, this stress response system may be recalibrated such that the normal physiological responses to conflict cues are desensitized.

Desensitization is reflected in the individual’s cortisol reactivity during a conflict interaction with a romantic partner. Cortisol production typically adheres to a diurnal pattern of activation, releasing the greatest concentration of cortisol during the morning, a large reduction in cortisol production throughout the afternoon, and a slow tapering of cortisol released during the evening. In addition, cortisol is a hormone that is released in response to the experience of stress. Under stressful conditions, elevated levels of cortisol facilitate the body’s fight or flight responses to enable a person to cope with the source of stress (Bateup et al., 2002). I anticipated that the normalization of conflict, as a function of childhood experiences, corresponds with attenuated cortisol reactivity in romantic relationships (H1).

In addition to the influence of childhood experiences, I also considered the proximal influences on the experience of conflict in romantic relationships. I positioned the intensity of
the conflict interactions (H2) and the cognitive abilities (H4) and emotional competencies (H6) of individuals in the conflict interactions as proximal factors shaping physiological stress responses to conflict. Drawing from the discussion of desensitization, I further predicted that exposure to verbal aggression during childhood moderates the relationship between cortisol reactivity and conflict intensity (H3). Finally, based on reasoning about how individual aptitudes affect conflict interactions, I hypothesized that conflict intensity mediates the relationship between cognitive ability and stress reactivity (H5), and emotional competence and stress reactivity (H7).

**Implications**

The study utilized a dyadic interaction design to examine the effect of conflict between dating partners on physiological stress reactivity. In addition, the study examined childhood exposure to familial verbal aggression, features of the conflict interaction, and individual differences of the interactants as factors relevant to the response to conflict. The results of the study provided partial support for the previously advanced hypotheses. In the following section, I discuss the findings of this dissertation as well as their implications.

A central claim advanced in this project is that family members who have experienced intense, enduring exposure to aggressive interactions during childhood physiologically adapt to the experience of conflict. This adaptation is reflected in desensitization to conflict cues that would normally elicit a stress response, such that exposure to verbal aggression in familial conflict corresponds with attenuated cortisol reactivity in conflict interactions between romantic partners. This association was supported for female participants. Female familial verbal aggression was significantly and negatively associated with female stress reactivity. In contrast,
male exposure to verbal aggression in familial conflicts during childhood was not significantly associated with male stress reactivity.

Importantly, the participants in this study reported only moderate levels of a history of familial verbal aggression during childhood. Perhaps females recalibrate their stress response systems at a lower threshold than males, such that effects were observed for females but not males. In comparison to females, males might tolerate mild exposure, and do not exhibit desensitization in the absences of frequent and intense experiences of familial conflict. Conversely, females may evaluate familial verbal aggression in childhood as more emotionally distressing than males do, and the demands of moderate levels of aggression may exceed females’ internal adaptive capacities. As such, females physiologically adapt to conflict by numbing their reactions to conflict cues to accommodate the environmental demands. For females, moderate levels of exposure to verbally aggressive messages within the family appear to normalize the experience of conflict and correspond with an attenuated cortisol reactivity to conflict in romantic relationships.

In Chapter 3, I reviewed previous research that described how conflict in romantic relationships reflects and affects relationship well-being. Specifically, conflict is more frequent and more severe in distressed relationship (Lloyd, 1990; Roloff, 1976). Consistent with that research, results of this study demonstrated a positive association between relational distress and conflict intensity. This dissertation extended previous findings by addressing other factors proximal to the conduct of interactions that influence the couple’s experience of conflict, such as the features of the conflict interaction and the qualities of the interactants. Thus, the influence of relational distress was covaried in the analyses to assess more precisely the influence of the variables of interest.
H2 posited that the intensity of the conflict interaction, manifest in the individuals’ conflict tactics and behaviors, is a significant proximal factor that shapes the physiological stress response to conflict. Specifically, I predicted that a higher level of conflict intensity corresponds with increased cortisol reactivity in a conflict interaction between romantic dating partners. This association was supported for both measures of stress reactivity and for both male and female participants. This key finding validates the method used in this study. The variation in conflict intensity predicted the change in stress reactivity, highlighting the important role of physiology in message processing. In addition, the judges’ ratings of conflict intensity were significantly and positively related to the participant’s post interaction self-report of distributive tactics, and significantly and negatively related to self-reported use of integrative tactics. Conflict intensity was also significantly and positive related to the four discriminators of conflict intensity: loudness, criticism, disagreement, and sarcasm. Taken together, these results add confidence to the judges’ ratings of conflict intensity.

Drawing from the discussion of desensitization in Chapter 2, I further predicted that exposure to verbal aggression moderates the relationship between conflict intensity and cortisol reactivity in Chapter 3. In particular, I hypothesized that exposure to verbal aggression in familial conflicts during childhood dampens the positive association between conflict intensity and stress reactivity. I theorized that children who have experienced intense, frequent conflict adapt to the experience of conflict and evaluate conflict as normal. As a result, conflict cues are less salient and this desensitization is reflected in a diminished physiological reaction to conflict regardless of the conflict intensity.

This association was fully supported for female participants; the interaction between female history of verbal aggression and conflict intensity was significantly associated with
female stress reactivity calculated as $AUC_G$ and $AUC_I$. This association was only partially supported for male participants; the interaction between male history of verbal aggression and conflict intensity was significantly associated with male stress reactivity calculated as $AUC_G$.

For the three statistically significant interactions, the magnitude of the association between conflict intensity and stress reactivity was greater when a history of exposure to familial conflict was low rather than high. Interestingly, for females the association between conflict intensity and $AUC_I$ was negative when a history of familial verbal aggression was high. This particular finding supports the idea that females recalibrate their stress response systems more readily than males, exhibiting more pronounced desensitization. More broadly, these three significant findings support the theoretical framework of desensitization. This suggests that a history of familial verbal aggression numbs reactions to conflict cues, such as the volume of speech, the degree of criticism, the frequency of disagreement, and the amount of sarcasm. This numbing spares individuals from the emotional distress of exposure to chronic conflict. As a result, desensitized individuals habituate to experiences of conflict and experience conflict as less adverse, irrespective of the intensity of the conflict interaction.

In Chapter 3, I also hypothesized that the qualities of the individuals’ involved in the conflict were significant proximal factors that shape physiological stress reactivity to conflict. Specifically, I predicted that a higher level of cognitive ability corresponds with decreased cortisol reactivity in a conflict interaction between romantic dating partners. I argued that an individual with higher cognitive ability is able to manage the experience of conflict more successfully, which is reflected, in turn, in a less pronounced stress reactivity. I also predicted that conflict intensity mediates the relationship between cognitive ability and cortisol reactivity.
The association between cognitive ability and cortisol reactivity was partially supported for male and female participants. Male and female cognitive ability was significantly and negatively associated with AUC$_I$, but was not significantly associated with AUC$_G$. In addition, conflict intensity partially mediated the relationship between male cognitive ability and male AUC$_I$. The mediated relationship was also supported for female participants; conflict intensity fully mediated the relationship between female cognitive ability and female stress reactivity, as calculated by AUC$_I$, in the full mediation model. These findings support the argument that an individual with higher cognitive ability is better able to manage a conflict interaction than a less cognitively able individual. I suggest that an individual with higher cognitive ability can encode and decode conflict messages more aptly. Though notional, this may prevent misunderstanding and miscommunication that can intensify the conflict. As a result, a more cognitively able individual can manage a conflict interaction more successfully.

Paralleling my thinking about the role of cognitive ability, I posited that an individual’s emotional competence was another proximal factor that shapes physiological stress reactivity to conflict. Participation in a conflict is emotionally taxing. As a result, I predicted that a higher level of emotional competence corresponds with decreased cortisol reactivity in a conflict interaction between romantic dating partners. Furthermore, I argued that an individual with more emotional competence is better able to manage the emotional strain of a conflict interaction, as reflected in less intense conflicts, and, in turn, a less pronounced stress reactivity. As such, I predicted that conflict intensity mediates the relationship between emotional competence and cortisol reactivity.

The hypothesized relationship between emotional competence and cortisol reactivity was partially supported for male and female participants. Male and female emotional competence
was significantly and negatively associated with AUC\textsubscript{G}, but was not significantly associated with AUC\textsubscript{I}. Moreover, the association between male emotional competence and male AUC\textsubscript{G} was partially mediated by conflict intensity. Similarly, conflict intensity fully mediated the relationship between female emotional competence and female stress reactivity, calculated as AUC\textsubscript{G}, in the full mediation model. These findings support the argument that a more emotionally competent individual is better able to manage a conflict interaction. Emotional competence allows an individual to recognize, process, and interpret their own emotions. In addition, a more emotionally competent person can identify and understand their partner’s emotions more accurately than a less emotionally competent person. Perhaps a more emotionally competent person displays their emotions more strategically, adjusting their behaviors and selecting whether to express, mask, or change their emotions more fittingly.

The findings of this dissertation have important theoretical contributions to the study of desensitization, cortisol reactivity, conflict in romantic relationships, and childhood exposure to familial verbal aggression. Rule and Ferguson (1986) defined desensitization as “the attenuation or elimination of cognitive, emotional, and ultimately, behavioral responses to a stimulus” (p. 29), and desensitization has been offered as a theoretical framework to explain the effects of physical aggression as a result of repeated exposure to physical violence. This dissertation first extends the definition of desensitization by highlighting the significant influence of physiology. The results of this study suggest that desensitization to conflict is reflected in dampened physiological reactions as measured by salivary cortisol. Individuals who reported experiencing more enduring exposure to familial conflict during childhood were less physiologically reactive to a conflict interaction with a dating partner. As a result, the definition of desensitization should be revised to include the impact of physiology. In addition, this study expands the theoretical
foundation of desensitization to include the detrimental influence of exposure to verbal aggression. Chronic exposure to physical violence and/or verbal aggression can eradicate responses to conflictual cues. Children who experience frequent verbal abuse also adapt to experiences of aggression and no longer become overwhelmed during conflict interactions.

The results of this dissertation also suggest important theoretical differences between AUC$_I$ and AUC$_G$. The computation of the area under the curve is a frequently used method in endocrinological research to calculate the change in repeated measurements over time. In this dissertation, I calculated two measures of cortisol change. AUC$_G$ considered the difference between the single measurements from each other and the distance of these measures from the ground. AUC$_I$ ignores the area between the ground and the first measure, focusing only on the distance between measures. Results of this study suggest that the two calculations might be differentially related to other variables. AUC$_I$ and cognitive ability were significantly and negatively correlated for males; the relationship between AUC$_G$ and cognitive ability was non-significant for males. In addition, AUC$_G$ and emotional competence were significantly and negatively correlated for males and females; however, AUC$_I$ and emotional competence were not significantly associated for either sex. Similarly, AUC$_G$ and relational distress were significantly and negatively correlated for males and females; the relationship between AUC$_I$ and relational distress was non-significant for both sexes. Perhaps cognitive ability is more closely related to total hormonal output; baseline cortisol levels might be more relevant to the relationship. In contrast, an association with AUC$_I$ might be associated purely with sensitivity. This study highlights the importance of considering both calculations in statistical analyses.

In addition, this dissertation highlights the importance of considering both distal and proximal influences on the experience of conflict in romantic relationships. An individual’s
response to a conflictual situation seems to be best understood as a joint product of the individual’s past and present communication experiences. It is important to consider the distal influences of previous communication interactions, including previous exchanges between the interactants and all other conflictual communication experiences relevant to the current interaction for each individual. In addition, it is essential to consider the proximal influences, including the features of the current communication situation and the personal qualities of the interactants. As such, I propose a holistic approach to the study of conflict that integrates the myriad of factors that influence reactivity to conflict.

In this study, I considered how childhood exposure to familial verbal aggression desensitizes individuals to conflict interactions within adult romantic relationships; however, the findings of this project also have implications for the transmission of aggression to other adult relationships. Desensitization to conflict caused by frequent exposure to familial verbal aggression in childhood causes individuals to experience conflict as less adverse. In turn, it is easier for individuals to envision the use of verbal aggression and incorporate aggressive actions into their own repertoire of conflict behavior. This verbally aggressive behavior can extend to a plethora of relationships, including other familial relationships, friendships, and romantic relationships.

Beyond the theoretical contributions of this study, the findings also have practical implications. Given the prevalence of conflict in families, the observed association between a history of exposure to verbal aggression in familial conflict during childhood and cortisol reactivity may provide insights into the negative psychological, behavioral, and physiological consequences of verbal aggression. Although speculative, frequent exposure to verbal aggression could act as a cumulative stressor for an individual. This pile up could cause negative
psychological, behavioral, and physiological outcomes for individuals who are exposed to the chronic stress of familial conflict. As reviewed in Chapter 2, impairment in the HPA axis is associated with negative outcomes. The cumulative stress of familial conflict could be influential in the development of psychological problems, such as depression, anorexia nervosa, and panic disorder. In addition, the chronic stress of familial conflict could influence behavioral changes, such as increases in aggression, disruptive behavior, and deviance. Finally, the enduring stress of familial verbal aggression could result in physiological damage, such as the development of diabetes, cancer, asthma, allergies, and arthritis. Although notional, frequent experiences of conflict could act as an aggregate stressor on an individual, leading to negative psychological, behavioral, and physiological outcomes.

**Strengths and Limitations**

Although the findings of this dissertation contributed to the literature on the mechanism linking childhood experiences of verbal aggression, features of the interaction, and qualities of the interactants to the physiological impact of conflictual communication in adulthood, the results are contextualized by the strengths and the limitations of the dissertation. There were several strengths of this study that support the validity of the findings. First, I utilized salivary cortisol as an objective measure of stress reactivity. The availability of an objective measure of physiological reactivity eliminates the biases introduced by self-report measures. In addition, to ensure accuracy in the measurement of cortisol, I examined the amount and type of activity participants were involved in prior to collection, I controlled for the time of day that the collections were taken, and I froze all of the samples immediately after collection. Using a measure of stress response that is divorced from self-report bias lends confidence to the results.
The creation of a new measure to assess a history of familial verbal aggression and conflict also strengthens this dissertation. This measure allowed for a closer examination of verbal aggression as a communication behavior aimed at negatively impacting an individual’s self-concept. The orientation to the scale was designed to normalize the experience of familial conflict and avoid social desirability bias in the responses. In addition, directions instructed participants to focus on experiences during middle childhood; experiences during this period of life are more easily recalled than those in early childhood. Finally, participants reported on the frequency of a behavior rather than rating the tendency of a behavior to obtain more accurate results. Although retrospective measures are always subject to bias, including an orientation, a precise timeframe, a frequency based response scale, and concrete items, reduces concerns about reliability and validity.

Finally, the interactive design allowed me to observe and record the conflict interactions as they occurred, rather than relying on retrospective, self-report accounts of an aggressive interaction. This eliminated the biases present in self-report measures, permitting a reliable and valid account of the conflict interaction. In addition, conflict intensity was reliably operationalized. The significant and positive correlation between the judges’ ratings of conflict intensity and the participant’s post interaction self-report of distributive tactics, and the significant and negative correlation between conflict intensity and self-reported reliance on integrative tactics adds confidence to the ratings. Conflict intensity was also significantly and positive associated with the four specific discriminators of conflict intensity. This is an additional sign of validity. Taken together, this method allowed unique insight into the physiological impact of conflictual messages during interactions with dating partners.
There were also several limitations to this study. The first limitation of this dissertation was that the research design allowed for minimal control over the interactions. The most distressing conflict pre-identified by the couple was selected as the stimuli for the interaction; however, there was variation in the level of distress reported between couples. In addition, the interactions were not experimentally manipulated. I also eliminated individuals with a prior history of physical aggression with their dating partners, per the Institutional Review Board and safety concerns. Not surprisingly, then, the mean ratings of conflict intensity suggest that the interactions were only moderately intense.

Second, this dissertation focused on couples of college age. This sample was selected because college-aged students report frequent, intense, and consequential conflict with their romantic partners; however, the restricted age range limits the generalizability of the findings. College students are likely to interpret conflictual messages differently than other groups. As such, it is important for future research to examine the associations between stress reactivity, exposure to familial verbal aggression during childhood, conflict intensity, cognitive ability, and emotional competence for different populations, including different age groups, cultures, relationship types, lengths of relationship, and intimacy levels.

Conclusion

This dissertation was focused on how childhood exposure to familial verbal aggression desensitizes people to experiences of aggression within adult romantic relationships. Specifically, I concentrated on how individuals physiologically adapt to aggressive interactions as reflected in their physiological stress response system. In addition, I considered proximal factors, such as the features of the conflict interaction and the qualities of the interactants, that influence the experience of conflict. To examine these associations, I utilized an interactive
design to test the effect of conflict between dating partners on stress reactivity and the influence that childhood exposure to familial verbal aggression, conflict intensity, cognitive ability, and emotional competence has on that stress reactivity. The results of this dissertation provide a foundation for understanding the consequential impact of conflictual communication. In particular, the findings demonstrate how a history of verbally aggressive messages influences people on a physiological level. In addition, the findings establish how cognitive ability and emotional competence influence the conflict intensity, which in turn influences an individual’s reactivity to conflict. Finally, the results position desensitization as a theoretical mechanism linking childhood experiences of verbal aggression to adult outcomes.
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