Effects of Argumentativeness and Verbal Aggressiveness on Communication Satisfaction and Relationship Satisfaction in Sibling Relationships

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By

Jodi L. Hupp

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Dissertation written by

Jodi L Hupp

B.A., University of Akron, 1999
B.A., University of Akron, 1999
M.L.I.S., Kent State University, 2001
M.A., University of Akron, 2004
Ph.D., Kent State University, 2014

Approved by

Janet Meyer, Ph.D., Chair, Doctoral Dissertation Committee

Sally Planalp, Ph.D., Member, Doctoral Dissertation Committee

Andrew Rancer, Ph.D., Member, Doctoral Dissertation Committee

Donald Wicks, Ph.D., Member, Doctoral Dissertation Committee

Accepted by

George Cheney, Ph.D., Chair, Doctoral Studies Committee

Stanley T. Wearden, Ph.D., Dean, College of Communication and Information
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Chapter I

Introduction

“Our brothers and sisters are there with us from the dawn of our personal stories to the inevitable dusk” (Merrell, 1995, p.15)

“My brothers loved to tease me to tears. They were ruthless in their teasing and did not let up. They teased me for being ugly. They teased me for being sloppy. They teased me for just being. This was the worst.” – A sibling abuse survivor (Wiehe, 1997, p.46).

“I was being constantly told how ugly, dumb, unwanted I was. At an early age, I was told, ‘No one wants you around. I [my sister] wish you were dead. You aren’t my real sister, your parents didn’t want you, either, so they dumped you with us.’ I grew up feeling, if my own family doesn’t like me, who will? I believed everything my sister ever told me—that I was ugly, dumb, homely, stupid, fat—even though I always was average in weight. I felt no one would ever love me. When you’re little, you believe everything you’re told. It can last a lifetime.” – A sibling abuse survivor (Wiehe, 1997, p. 44).

Argumentativeness and verbal aggressiveness are both considered to be aggressive forms of communication. However, Infante and Rancer (1996) assert: “Perhaps the most striking feature of the body of research based on the argumentativeness and verbal aggressiveness frameworks is that the outcomes of argumentativeness are positive and all the outcomes of verbal aggression are negative” (p. 327). Given this distinction, it is apparent that there are benefits to argumentativeness, but how people perceive and react to argumentativeness may differ greatly.
Furthermore, Infante and Rancer (1982) state: “Argumentative behavior is a ubiquitous dimension of human communication” (p.72). Therefore, everyone must deal with argumentative behavior and argumentative people at one point in time or another. In fact, some people are highly argumentative, and these people seem to relish an argument, and delight in making their point known. Yet, others may shy away from arguments, and would choose to avoid an argument over engaging in an argument.

People have been found to have varying beliefs about arguing. For example, those who are highly argumentative view arguing as a way to collect information, and as a means to reduce conflict (Rancer, Baukus, & Infante, 1985). In addition, highly argumentative people perceive arguing as enjoyable and having productive outcomes (Rancer, Kosberg, & Baukus, 1992). On the other hand, those who are low in argumentativeness view arguing as hostile and unfavorable, and avoid arguments if at all possible (Rancer et al., 1985).

As mentioned earlier, verbal aggressiveness has negative outcomes. Verbally aggressive people use hostile communication with the intention of attacking their conversational partner. Verbally aggressive people engage in name-calling, threats, profanity, character or personality attacks, in addition to a multitude of other verbally aggressive acts. Therefore, when people use verbally aggressive messages, they do not resolve a conflict in a positive way, nor engage in productive communication.

Argumentativeness and verbal aggressiveness can occur in many different contexts and relationships. The present study is concerned with the effects of argumentativeness and verbally aggressive behaviors in the sibling relationship. The sibling relationship plays an important role in the lives of those who have a sibling. Cicirelli (1995) describes the sibling relationship as a cradle-to-grave relationship. It is one of the most enduring relational ties that one can have with
another person, as it is a relationship that continues throughout one’s lifespan. In addition, the sibling relationship is an involuntary relationship. A voluntary relationship (friendship, romantic, etc.) can potentially be terminated at any moment. However, the sibling relationship cannot be terminated. In any situation, a sibling ultimately remains a sibling, regardless of how dysfunctional the relationship may be (Myers, 2001). Therefore it is important for communication scholars to identify factors that contribute to communication and relationship satisfaction in sibling relations. A better understanding of these influences could help to improve overall communication and relationships between siblings. Thus, the overall objective of this study is to offer insight into sibling argumentativeness and verbal aggressiveness and perceived sibling argumentativeness and verbal aggressiveness, and the relationship between these communication practices and sibling communication satisfaction and sibling relationship satisfaction.

**Statement of Problem**

It has been stated that people want to have stable and satisfying relationships with others, including siblings (Canary & Stafford, 1994). Eighty-five percent of United States citizens have at least one sibling (Stocker, Furman, & Lanthier, 1997). Often siblings act as teachers, companions, playmates, confidantes, peers, and friends (Fitzpatrick & Badzinski, 1994). Goetting (1986) reports that people look to their siblings for comfort and affection. While 80% of all individuals spend at least one-third of their lives with their siblings (Fitzpatrick & Badzinski, 1994), most people report being satisfied in their relationships with their siblings (Floyd & Parks, 1995). Overall, sibling relationships play an integral part in many of our lives. However, people display a multitude of behaviors and traits. In sibling relationships, how people communicate with their siblings may affect how they feel about their siblings, in addition to how
they feel about overall communication with their siblings. Yet, Noller and Fitzpatrick (1993) referred to the sibling relationship as the forgotten relationship in communication research. This suggests a need for more studies examining sibling relationships. As noted, this study will explore the sibling relationship and the communication between siblings. This is an important area for research in the field of communication studies given that, in most cases, communication satisfaction and relationship satisfaction are highly desired. How siblings communicate with one another will ultimately influence future communication interactions. Therefore, it is important to get to the root of what communication behaviors are constructive or destructive in sibling relationships.

Rationale for Study

Due to the fact that sibling relationships are so important, and because siblings “…engage in intimate daily contact during their childhood and adolescence (Cicirelli, 1995) that extends into adulthood” (Goetting, 1986, p.342), it is important that communication scholars understand the factors that contribute and take away from the perceived quality of such relationships. As summarized in the following chapter, research has revealed many variables that can help predict communication and relationship satisfaction.

Factors Influencing Relationship Quality

Two variables that are likely to have an impact on relationship quality in sibling relationships are argumentativeness and verbal aggressiveness. According to Martin, Anderson, and Rocca (2005), the communication that takes place between siblings will heavily influence the quality of the relationship. Research in other communication contexts (e.g., group, organizational, instructional) reveals that argumentativeness increases relationship and communication satisfaction (Infante & Gordon, 1989; Myers, 2002, Schodt, 2003); whereas, in
other communication contexts (e.g., group, organizational, instructional), verbal aggressiveness has been shown to have a negative impact on satisfaction (Goodboy & Myers, 2011; Madlock & Kennedy-Lightsey, 2010; Myers & Johnson, 2003; Myers & Rocca, 2000).

Argumentativeness is one’s “…tendency to present and defend positions on controversial issues while attempting to refute the positions others take” (Infante, Rancer & Womack, 2003, p. 94). Often, argumentativeness is enmeshed with the concept of verbal aggressiveness. Verbal aggressiveness differs from argumentativeness in that rather than attacking a point, one attacks the self-concept of the other person (Infante, 1987). Verbal aggressiveness is considered negative because it aims to hurt the other person psychologically and/or emotionally. Argumentativeness, in contrast, is content-focused, not person-focused (Infante, 1987). Argumentativeness is considered a positive trait in that it can help cultivate interpersonal communication. It allows one to invest in an exciting intellectual activity, and feel invigorated (Infante & Rancer, 1982). Some individuals are more likely to approach an argument whereas others tend to avoid an argument (Infante & Rancer, 1982).

Given the potential for constructive and destructive behaviors associated with verbal aggressiveness and argumentativeness, it is important to investigate how these communication behaviors affect communication and relationships between siblings. Two indicants of the quality of sibling relationships will be studied: communication satisfaction and relationship satisfaction. Communication satisfaction has been conceptualized as being the pleasurable emotion one feels after successful and fulfilling interpersonal communication experiences (Hecht, 1978). Further, communication satisfaction is the satisfaction with one’s own communication as well as that of the conversational partner just after a conversation has occurred. In the instance of siblings, communication satisfaction may be perceived to be more positive to one sibling, and more
negative to the other sibling. The same conversation may be perceived to have completely different satisfaction outcomes by each sibling. Or, both siblings may have perceived the communication outcome the same way, with both siblings satisfied or unsatisfied with the communication. Argumentativeness and verbal aggressiveness may be at the root of communication satisfaction or dissatisfaction between siblings. Thus one outcome variable in this study will be communication satisfaction between siblings.

Sibling relationships also differ in relationship satisfaction. Dainton, Stafford, and Canary (1994) defined relationship satisfaction as “an individual’s attitude toward the partner and the relationship, typically in terms of the perceived quality of the relationship” (p. 90). Some siblings may claim that they have low relationship satisfaction with one or more of their siblings, while others may report high relationship satisfaction with their siblings. Therefore, one objective of this dissertation will be to investigate the effects that perceived argumentativeness and perceived verbal aggressiveness have on communication and relationship satisfaction in sibling relationships. Furthermore, there are instances in sibling relationships when the lack of argumentative skills compounded with verbal aggression can escalate to physical altercations. The next section offers an overview of how a lack of argumentative skills and the use of verbal aggression may lead to physical violence between siblings.

**The Argumentative Skill Deficiency Model and Sibling Relationships**

According to Greenleaf (1990), in her study of sibling physical aggression, college student subjects participating in the study reported that physical aggression had occurred at some point in the history of their sibling relationships. Wiehe (1997) reports that the most common types of sibling physical aggression are: hitting, slapping, pushing, punching, biting, hair pulling, scratching, and pinching. These forms of physical violence, where one sibling violates the other
sibling, are painful and damaging.

Research reveals that verbal aggressiveness can be a catalyst for physical violence or further aggressiveness (Bandura, 1973; Toch, 1969). Theorists such as Berkowitz argue that impulsive aggression often initiates with verbal aggression, which then can escalate into physical aggression. If these claims are accurate, then there is good reason to believe that verbal aggressiveness may be a precursor to social ills like physical aggression in the sibling relationship. It is also believed that persons who lack argumentative skills will often rely on verbally aggressive behaviors due to their frustration with the inability to argue their viewpoints. This is consistent with research (Carey & Mongeau, 1996; Infante, Chandler, & Rudd, 1989; Infante, Sabourin, Chandler, & Rudd, 1993). This research will be discussed in detail in chapter two.

Furthermore, works by Bandura (1973) and Toch (1960) found that violent people often lack the verbal skills to deal with normal frustrations, and as a result, they feel like violence is the only alternative. Following this same line of logic, Infante, Chandler, and Rudd (1989) derived a model that attempts to predict violence as a result of an argumentative skill deficiency. The Argumentative Skill Deficiency Model (ASDM) posits that individuals who are low in argumentativeness, or have an inability to produce arguments, are more prone to be verbally aggressive. As a result, the ASDM asserts that verbal aggressiveness becomes a catalyst for violence in a relationship (Infante, Chandler, & Rudd, 1989).

It would be of interest to know the extent to which the ASDM describes behavior in sibling relationships. Little research has examined the relationship of verbal aggressiveness and violence in sibling relationships. The ASDM has been used in other contexts (Infante, Chandler, & Rudd, 1989; Infante, Sabourin, Rudd, & Shannon, 1990; Payne & Sabourin, 1990; Roberto, 1999;
Schrodt & Wheeless, 2001), and has found that verbal aggressiveness leads to violence. Research on ASDM will be examined in the next chapter. Thus, a second objective of this dissertation will be to investigate how argumentativeness may be related to verbal aggressiveness in sibling relationships. Due to the fact that verbal aggressiveness can lead to physical violence, this study will explore whether verbal aggressiveness or perceived verbal aggressiveness by siblings is related to physical aggressiveness, thereby applying the ASDM to the sibling relationship.

**Gender Differences in Argumentativeness and Verbal Aggressiveness**

Research has shown that gender plays a role in argumentativeness (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985). It has been found that young males report higher argumentativeness scores than young females. However, one study found older females reported higher levels of argumentativeness than older males (Schullery & Schullery, 2003). Just as research shows that gender plays a role in argumentativeness, research also shows that gender plays a role in verbal aggressiveness, with males reporting higher levels of verbal aggressiveness than females (Infante, Wall, Leap, & Danielson, 1984; Jordan-Jackson, Becker, Wigley, Haigh, & Craig, 2007; Jordan-Jackson, Lin, Rancer, & Infante, 2008; Nicotera & Rancer, 1994).

Therefore, a third objective of this dissertation is to examine gender differences in argumentativeness and verbal aggressiveness in the sibling relationship by comparing female P-female S sibling relationships, (female P is a female participant, and female S is a female sibling), female P-male S sibling relationships, (female P is a female participant, and male S is a male sibling), and male P-male S, (male P is a male participant, and male S is a male sibling) sibling relationships. I will examine whether the effects of argumentativeness and verbal aggressiveness on communication satisfaction, relationship satisfaction and physical
aggressiveness in sibling relationships depend on the gender makeup of the relationships.

**Validity of the Verbal Aggressiveness Scale**

In order to study verbal aggressiveness, this study will utilize the Verbal Aggressiveness Scale (Infante & Wigley, 1986). This scale has been used in numerous studies, and has been found to be reliable and valid (Cole & McCroskey, 2003; Gorden, Infante, & Izzo, 1988; Infante & Gorden, 1991; Martin, Anderson, Burant, & Weber, 1997; Myers & Knox, 2000; Rill, Baiocchi, Hopper, Denker, & Olson, 2009; Venable & Martin, 1997). However, the validity of the Verbal Aggressiveness Scale has been criticized because it relies on self-report data, and is not based on actual verbally aggressive behaviors (Levine, Kotowski, Beatty, & Van Kelegom, 2012; Kotowski, Levine, Baker, & Bolt, 2011). To address this issue of validity, the fourth objective of this research will be to obtain information pertinent to the relationship of scores on the Verbal Aggressiveness Scale and real-life verbally-aggressive behaviors recalled by participants.

To summarize, this dissertation will have four objectives. The first objective is to investigate the effects that perceived argumentativeness and perceived verbal aggression are related to communication and relationship satisfaction in sibling relationships. The second objective is to investigate whether argumentative skills are related to the use of verbal aggressiveness by partners in sibling relationships, and if this verbal aggressiveness is related to physical aggression. The third objective is to examine whether gender differences in argumentative skill and/or verbal aggressiveness will be observed. I will also report whether gender of participant is related to physical aggression in same-sex and opposite-sex sibling dyads. The fourth objective of this research will be to explore the validity of the Verbal Aggressiveness Scale (Infante & Wigley, 1986) by obtaining information pertinent to the relationship of scores on the Verbal
Aggressiveness Scale and real-life verbally-aggressive behaviors recalled by participants. The next section will provide an overview of the research pertinent to the current study.
Chapter II

Literature Review, Hypotheses, and Research Questions

As indicated at the end of the previous chapter, this dissertation will focus on relationships between argumentativeness, verbal aggressiveness, physical aggressiveness, communication satisfaction and relationship satisfaction in sibling relationships. Specifically, the dissertation has four overall objectives. One objective is to examine how perceived argumentativeness and perceived verbal aggression are related to communication satisfaction and relationship satisfaction in sibling relationships. The second objective is to investigate how a sibling’s argumentative skill, or lack of argumentative skill, relates to the use of verbally aggressive messages in the sibling relationship. In addition, this dissertation will examine how verbally aggressive messages are related to physical aggression in sibling relationships. The third objective of the study is to explore gender differences in argumentativeness, verbal aggressiveness and physical aggression in sibling relationships. The fourth objective of the study is to provide information that bears on the construct validity of the Verbal Aggressiveness Scale.

The current chapter provides a summary and overview of relevant literature concerning this dissertation. First, research on sibling relationships is reviewed. Second, an overview of the conceptualization of argumentativeness, argumentativeness in relation to aggression, the definition of argumentativeness, and argumentativeness research is provided. Third, interpersonal communication satisfaction is explained and reviewed with related hypotheses and research questions concerning sibling relationships being offered. Fourth, relationship satisfaction is defined, while also offering pertinent hypotheses and research questions concerning sibling relationships. Fifth, verbal aggressiveness is addressed by providing the conceptualization of verbal aggressiveness and verbal aggressiveness research. Related
hypotheses and research questions concerning verbal aggressiveness and the sibling relationship are posed. Sixth, the Argumentativeness Skill Deficiency Model is explained and relevant research will be provided. Hypotheses and research questions regarding the Argumentativeness Skill Deficiency Model and sibling relationships are offered. Seventh, research on gender differences in argumentativeness verbal aggressiveness, and physical aggressiveness are given, and related hypotheses concerning gender are presented. Eighth, critiques of the Argumentativeness Skill Deficiency Model, the Argumentativeness Scale, and Verbal Aggressiveness are reviewed. Research questions regarding verbal aggressiveness and verbally aggressive behaviors are offered. Lastly, perception in interpersonal communication is reviewed. Sibling relationship research is addressed first.

**Sibling Relationships**

Compared to other interpersonal relationships, the sibling relationship is rather distinctive. As noted earlier, it is often indicated as being different, because in the sibling relationship, there is a common social and biological bond, a shared history, and repeated lifetime exposure (Cicirelli, 1995). Sibling relationships are forced relationships that are often maintained by the siblings to create a life-long relationship (Cicirelli, 1995). Unlike other interpersonal relationships, before adulthood, the sibling relationship is characterized by enforced interactions, frequent social comparison, and competition (Newman, 1994). However, as siblings age, the sibling relationship becomes more voluntary (Floyd & Parks, 1995), and the siblings remain emotionally involved with one another (Bank & Kahn, 1982). As indicated earlier, for most who have a sibling, the longest lasting relationship that they will ever have is the relationship with their siblings (Ponzetti & James, 1997).

As siblings grow older, whether or not they decide to maintain a relationship is a personal
choice (Allan, 1977). As a result, in some sibling relationships, the sibling relationship intensifies in adulthood, whereas for other siblings, contact and intimacy decreases throughout adulthood (Leigh, 1982). The siblings that stay close actually perform many roles in their relationships with one another. As mentioned previously, siblings often play the role of a friend, manager, competitor and even a teacher (Buhrmester, 1992). Furthermore, Goetting (1986) found that siblings count on each other to provide companionship, comfort and affection. It has been suggested that siblings’ attachment to one another could be more intense than their attachment to their parents (Meyendorf, 1971). Due to the unique dynamics of the sibling relationship, it is important to study how argumentativeness and verbal aggressiveness affect sibling aggressiveness, communication satisfaction, and relationship satisfaction. The next section will review argumentativeness.

**Conceptualization of Argumentativeness**

Arguing is a form of communication that has been studied widely. While historically, the construction of arguments has been examined extensively (Burleson, 1981; Campbell, 1973; Cowperthwaite & Baird, 1954; Hample, 1981; Jackson & Jacobs, 1980; Perelman & Olbrects-Tytca, 1969; Toulmin, 1958), more recent research by Infante and Rancer (1982) uses a psychological approach to understand arguing. The psychological approach focuses on what arguing means to an individual in relation to the motivation and perceptions, and how one may respond to another’s argumentative behavior (Rancer, Baukus, & Infante, 1985).

**Argumentativeness in Relation to Aggressiveness**

Argumentativeness is associated with the concept of aggressive behaviors. Infante (1987) addressed this issue by developing a model of aggressiveness in interpersonal communication, positioning four aggressive traits (assertiveness, argumentativeness, hostility, verbal...
aggressiveness) along a constructive-destructive continuum. Constructive aggressiveness occurs when the aggressive behavior helps increase interpersonal communication satisfaction by improving a relationship through an increase in understanding, intimacy, and empathy. Destructive aggressiveness occurs when the aggressive behavior causes dissatisfaction, produces low favorable self-perceptions of one of the individuals in the dyad, and the quality of the relationship is reduced (Infante, 1987).

On the constructive side of the continuum lie assertiveness and argumentativeness. Hostility and verbal aggressiveness lie on the destructive side of the continuum. Infante (1987) defines assertiveness as one’s general tendency to be dominant, ascendant and forceful in interpersonal interactions. Argumentativeness is considered a subset of assertiveness because arguing is assertive, but not all assertive behavior involves arguing. Although these two traits are considered constructive, they can have destructive ramifications. One can be assertive in order to hurt another, or argue in order to make another feel incompetent. However, most often these traits are thought of as being constructive due to how they can enhance interpersonal communication (Infante, 1987).

Argumentativeness is considered a positive trait in that it can help cultivate interpersonal communication. It allows one to invest in an exciting intellectual activity, and feel invigorated (Infante & Rancer, 1982). Some individuals are more likely to approach an argument whereas others tend to avoid an argument (Infante & Rancer, 1982). Argumentativeness falls under one of the four aggressive communication behaviors, with argumentativeness and assertiveness being positive constructs and verbal aggressiveness and hostility being negative constructs (Infante, 1987).

**Definition of Argumentativeness**
Infante and Rancer (1982) define argumentativeness as “a generally stable trait which predisposes the individual in communication situations to advocate positions on controversial issues and to attack verbally the positions which other people take on these issues” (p. 72). This working definition of argumentativeness will be used in the present paper.

Argumentativeness can be understood in terms of an approach-avoidance or activation-inhibition conflict (Infante & Rancer, 1982). Highly argumentative people experience excitement and a strong tendency to approach an argument and they lack inhibition to argue. For example, they may see the potential for winning an argument as an accomplishment. It is viewed as a competitive activity that brings rewards. Furthermore, research by Infante (1981) reveals that highly argumentative people are seen as more set in their positions, are interested in controversial discussions, are verbose, are willing to attack and defend positions, are dynamic presenters, and are skilled in arguing. On the other hand, low argumentative people do not feel favorable excitement and avoid arguments. Low argumentative people wish to avoid failure, and one such way is to avoid an argument that could result in the other person winning (Infante, 1981).

Infante and Rancer (1982) explain that an individual’s general tendency to be argumentative (ARGgt) is an interaction of the tendency to approach arguments (ARGap) and the tendency to avoid arguments (ARGav). The inclination to avoid arguments is a debilitating factor, which then weakens the tendency to approach arguments due to the anxiety that is linked to arguing. This is expressed as: \( \text{ARGgt} = \text{ARGap} - \text{ARGav} \). High argumentatives score high on ARGap and low on ARGav. Low argumentatives score low on ARGap and high on ARGav.

The approach-avoidance model is an adaptation of Atkinson’s (1957, 1966) Theory of Achievement Motivation. Atkinson (1957, 1966) describes motivation to engage in a behavior as
an individual’s tendency to approach rewards and avoid punishments. When arguing controversial issues, one anticipates being evaluated, and the source of evaluation may be the opponent or observers of the argument (Infante & Rancer, 1982). Therefore, when evaluation of an argument is anticipated, the motivation to approach the argument or avoid the argument is activated. This model of argumentativeness helps predict behaviors in argumentative situations (Infante & Rancer, 1982).

As noted earlier, Infante and Rancer (1982) assert that an individual may perceive arguing as an exciting intellectual challenge. One may enjoy a competitive situation in which one attempts to defend a position and win points. In fact, one may feel excitement preceding an argument and feel invigorated, satisfied, and accomplished after the argument. On the other hand, some individuals are less likely to approach an argument. Infante and Rancer (1982) claim that a person who is low in argumentativeness recognizes the potential of an argument occurring or escalating in certain social situations; therefore a person low in argumentativeness will try to prevent an argument from happening, and will feel relieved when the argument is prevented. When the low argumentative person is provoked to argue, he/she will experience unpleasant feelings before, during, and after the argument. A highly argumentative person possesses high confidence in his or her ability to argue, whereas a low argumentative person has little confidence in the ability to argue (Infante & Rancer, 1982). The next section offers an overview of argumentativeness research.

**Argumentativeness Research**

**Instructional setting.** Argumentativeness has influence in the instructional setting. Schullery and Schullery (2003) report that those individuals with a higher level of education report higher scores on argumentativeness tendencies. Further, Roach (1992) examined the
relationship between levels of teacher argumentativeness and teacher age, teacher gender, and teacher grade level. Results indicate that male teachers were more argumentative than female teachers, older teachers were more argumentative than younger teachers, and teachers who taught upper grade levels were more argumentative than those teachers who taught lower grades. Schrodt (2003) found that perceived instructor argumentativeness was positively associated with the instructor’s credibility and evaluations. Myers (2002) explored the relationship between students’ motivation, learning, satisfaction, and perceived instructor argumentativeness and verbal aggressiveness. The findings reveal that students’ reports of their instructors who were perceived as low in verbal aggressiveness and high in argumentativeness were positively correlated with the students’ self-reports of state motivation, affective learning, cognitive learning, and satisfaction. In another study, Myers and Knox (2000) investigated argumentativeness, verbal aggressiveness, and student satisfaction with their instructor. They found that when instructors challenge the students’ responses and ideas by using argumentative methods, the instructors promote levels of affect toward the course, themselves, and the students describe having higher satisfaction. In another study by Myers (1998), it was revealed that teachers higher in argumentativeness were viewed as being more competent than submissive teachers.

Overall, argumentativeness in instructors is viewed as a positive influence in the classroom with increased student satisfaction. This supports Infante and Rancer’s (1982) notion that argumentativeness has a positive effect on communication. A goal of the present study is to determine if the positive outcomes of argumentativeness will extend to the sibling relationship. Argumentativeness research has also been conducted in the organizational setting. The next section will address argumentativeness research in the organizational setting.
**Organizational setting.** Extensive argumentativeness research has been conducted in organizational settings. Infante and Gorden (1985b) found that those subordinate workers who perceived their superiors high in argumentativeness and low in verbal aggressiveness had higher job satisfaction. Subordinates were also more satisfied with their superiors and other facets of the organizational setting when the superiors were more argumentative (Gorden, Infante, & Graham, 1988). Moreover, when superiors rated subordinates’ argumentativeness, it was found that the superiors’ ratings predicted the superiors’ satisfaction with the subordinates’ job satisfaction (Infante & Gorden, 1989). For subordinates and supervisors, argumentativeness positively impacts the quality of the organizational setting.

In work groups, Schultz (1982) found that argumentativeness influences leadership perception, where highly argumentative individuals are chosen as leaders over the moderate or mildly argumentative individuals. In addition, highly argumentative individuals are rated as being more influential in the group’s decision-making (Schultz, 1982). According to Infante (1981), people who are more argumentative are considered to be more credible communicators. Onyekwere, Rubin, and Infante (1991) found that individuals who are high in argumentativeness foster perceptions that they are more competent communicators than low argumentative people. Further, Nemeth (1986) asserts that an argumentative individual improves a group’s problem-solving and decision-making abilities by forcing everyone to be more careful, creative and thorough. In work groups, argumentativeness provides positive leadership qualities and influence. Once again, argumentativeness has been shown to have a positive outcome on communication. One may expect argumentativeness to cross over into one’s personal life, and the next section will address this area of research.

**Parenting.** Argumentativeness studies have also been conducted in the parenting context.
Bayer and Cegala (1992) examined how argumentativeness and verbal aggressiveness affect parenting styles. It was found that parents who were high in argumentativeness and low in verbal aggressiveness reported using an authoritative parenting style. According to Baumrind (1967, 1971) authoritative parents are good arguers, using reason to gain compliance. They also encourage verbal give-and-take in reaching an agreement with the child. In addition, they are more likely to acknowledge a child's argument based on reasoning. There’s an expectancy of appropriately mature behavior from the children and the parents consistently impose family rules. This style of parenting and argumentative behavior results in high communication satisfaction between children and their parents.

Martin and Anderson (1997) compared argumentativeness, verbal aggressiveness, and assertiveness of adult children in relation to their parents: sons’ and daughters’ levels of argumentativeness and verbal aggressiveness were positively correlated to their mothers’ levels of argumentativeness and verbal aggressiveness. In regards to sons’ and daughters’ similarity to their fathers’ argumentativeness and verbal aggressiveness, no significant relationship was reported. Adult children tend to mirror the argumentative and verbal aggressive behaviors of the mother, and not the father (Martin & Anderson, 1997).

**Marriage.** Argumentativeness carries over into one’s marriage. Rancer, Baukus, and Amato (1986) probed the issue of argumentativeness in relation to marital satisfaction. The researchers administered the Argumentativeness Scale (Infante & Rancer, 1982), the Verbal Aggressiveness Scale (Infante & Wigley, 1986), and a marital satisfaction measure to married couples. Thirty-one couples completed the scales. The results indicate that couples who are dissimilar in argumentativeness tendencies reported higher levels of marital satisfaction than those couples who had similar argumentativeness tendencies. In other words, couples where one spouse was
high in argumentativeness and the other was low in argumentativeness were happier than couples who reported similar levels of argumentativeness. Payne and Chandler-Sabourin (1990) conducted a similar study on nondistressed couples. A wife high in argumentativeness (as indicated by self-report and other-report) offers the best predictor of marital satisfaction. Wives scoring lower in argumentativeness tendencies reported lower levels of marital satisfaction. Clearly, argumentativeness plays an important role in marital satisfaction.

The role of argumentativeness is important in interpersonal relationships and relationship satisfaction. A conceptual overview of Interpersonal Communication Satisfaction and Relationship Satisfaction is provided next.

**Interpersonal Communication Satisfaction and Relationship Satisfaction**

**Definition of Communication Satisfaction**

Hecht (1978a) conceptualized communication satisfaction as the positive affect from a communication event that fulfilled expectations. In other words, communication satisfaction is the pleasurable emotion someone feels after successful and fulfilling interpersonal communication experiences. Communication satisfaction is marked by interest and involvement in the communication interaction. With communication satisfaction, there is an ease and flow of conversation (Hecht, 1984). Hecht (1978a, 1978b, 1978c) proposed communication satisfaction as an outcome variable, and it can be used to assess communication behaviors. Thus, using communication satisfaction as an outcome can aid individuals in understanding the expectations and emotional responses to communication that is sent and received. Therefore, communication satisfaction can be applied to the development of, and improvement to the quality of communication skills.

**Definition of Relationship Satisfaction**
Dainton, Stafford, and Canary (1994) defined relationship satisfaction as “an individual’s attitude toward the partner and the relationship, typically in terms of the perceived quality of the relationship” (p. 90). Similarly, relational satisfaction has also been defined as the extent to which an individual’s needs are fulfilled by a relational partner (Rusbult, Martz, & Agnew, 1998). There is a commonality in both of these definitions. They both look at how a relational partner fulfills the needs of another person, and how the relational partner brings quality to the relationship. In the present study, the relationship would be that of the sibling relationship, and satisfaction would be a product of the quality and needs being met in the relationship.

Based on the definition of communication satisfaction, and on the results of the studies on satisfaction of married couple mentioned above (Payne & Chandler-Sabourin, 1990; Rancer, Baukus, & Amato, 1986), one may wonder if similar results in regards to communication and relationship satisfaction would occur in sibling relationships. Sibling relationships reflect marriages in many ways. Often siblings live in the same house with one another, and have many shared-resources (cars, stove, television, etc.) as do married couples. In addition, many siblings see one another on a daily basis, as do most couples. Also, siblings are prone to argumentative behaviors at times, just as married couples are. So, if satisfaction is related to differing levels of argumentativeness between the husband and wife as mentioned above, would the same dynamics affect sibling satisfaction? From this understanding of communication and relationship satisfaction, the following hypotheses and research questions are posed:

H1: Perceived argumentativeness of a sibling will be positively related to communication satisfaction in the sibling relationship.

H2: Participant’s self-reported argumentativeness will be positively related to communication satisfaction in a sibling relationship.
RQ1a: Does the relationship between perceived argumentativeness of a sibling and communication satisfaction depend on whether the participant is high or low in argumentativeness?

RQ1b: Does the relationship between a participant’s self-reported argumentativeness and communication satisfaction depend on whether the sibling is high or low in argumentativeness?

H3: Perceived argumentativeness of a sibling will be positively related to relationship satisfaction in the sibling relationship.

H4: Participant’s self-reported argumentativeness will be positively related to relationship satisfaction in a sibling relationship.

RQ2a: Does the relationship between perceived argumentativeness of a sibling and relationship satisfaction depend on whether the participant is high or low in argumentativeness?

RQ2b: Does the relationship between a participant’s self-reported argumentativeness and relationship satisfaction depend on whether the sibling is high or low in argumentativeness?

The next section provides insight into a communication trait that is not considered to be a positive trait. The following section will review verbal aggressiveness.

**Conceptualization of Verbal Aggressiveness**

Often, argumentativeness is enmeshed with the destructive construct, verbal aggressiveness. Further, hostility is a destructive construct in that it intends to express irritability, negativism, resentment, and suspicion (Infante, 1987). According to Infante’s Aggressiveness Model of Interpersonal Communication discussed earlier, hostility and verbal aggressiveness both lie on
the destructive side of the constructive-destructive continuum. Both of these communication
traits intend to hurt the other person and hinder interpersonal communication. Verbal
aggressiveness differs from argumentativeness in that rather than attacking a point, one attacks
the self-concept of the other person (Infante, 1987). Verbal aggressiveness is considered negative
because it aims to hurt the other person psychologically and or emotionally; whereas
argumentativeness is content-focused, not person-focused (Infante, 1987). In other words, the
following quote summarizes the point, “while a physically aggressive person tries to inflict
bodily pain, a verbally aggressive person attempts to create mental pain” (Infante, Rancer, &

Five causes of verbal aggressiveness have been identified by research. Early research by
Infante, Trebing, Shepherd, and Seeds (1984) reported four of the five basic causes of verbal
aggression: psychopathology, disdain, social learning, and argumentative skill deficiency.
Psychopathology involves a victim (or perceived victim) who expresses transference when
he/she is reminded of a past hurt. This can be thought of a repressed hostility. As a result of this
past hurt being repressed over a period of time, the victim may end up verbally attacking another
person if this person uses a behavior that reminds the victim of the past hurt. The second cause of
verbal aggression is disdain. Disdain is extreme hatred for another person. At times, someone
may become verbally aggressive if they greatly dislike another person. They express hate
through their verbally aggressive messages. The third cause of verbal aggression is due to social
learning. With this, the cause of verbal aggression is due to one’s observation of a person who is
seen on a regular basis (i.e., a family member or friend) and that person frequently uses verbal
aggression. Consequently, the observer learns this behavior, and believes that it is an acceptable
way to communicate. One cannot underestimate the power of influence from people that we are
surrounded by in our environment. The fourth explanation of verbal aggression is an argumentative skill deficiency. One may end up using verbally aggressive messages out of frustration because he/she may not be able to attack another person’s arguments, and as a result, he/she resorts to personally attacking the other person. The lack of skills to construct an argument results in verbal aggressiveness instead (Infante et al., 1984).

In addition to the four causes of verbal aggression presented above, Beatty and McCroskey (1997) assert a fifth cause of verbal aggression. They argue that verbally aggressive traits are inherited. Verbal aggression is an expression of temperament. Further, people are born with biologically determined temperaments, and these temperaments are consistent throughout our lives. So the behavior of verbal aggressiveness is genetically determined, and one who inherits this temperament will be inclined to display this behavior in his or her communication (Beatty & McCroskey, 1997).

There are numerous types of verbally aggressive messages. For example, all of the following are considered verbally aggressive: character attacks, competence attacks, insults, maledictions, teasing, ridicule, profanity, nonverbal emblems (Infante & Wigley, 1986). Infante (1995) later included the following as types of verbally aggressive acts: background attacks, physical appearance attacks, commands, threats, blame, personality attacks, rejection, disconfirmation, negative comparison, sexual harassment, and attacking one’s significant other.

Moreover, the most fundamental effect of a verbally aggressive message is self-concept damage (Infante, Trebing, Shepard, & Seeds, 1984). In fact, self-concept damage can be more harmful and longer lasting than a physically aggressive act, such as a punch (Buss, 1961). As Rancer, Infante, and Womack (2003) point out, “a person can recover from many types of physical aggression such as being punched in the nose. Recovery from some forms of verbal
aggression never occurs” (p. 97). For instance, teasing a child can cause so much self-damage that he or she may endure the damage for a lifetime. On the other hand, some verbally aggressive messages may only have a short term effect on self-concept, such as: hurt feelings, anger, irritation, embarrassment, and discouragement (Infante & Wigley, 1986). Oftentimes, verbally aggressive messages can result in relationship deterioration or even relationship termination (Infante & Wigley, 1986).

Verbal aggressiveness is very damaging, not only in communication, but also in relationships. Scholars have explored the effects of verbal aggressiveness in many contexts. The next section will review verbal aggressiveness in various contexts.

**Verbal Aggressiveness Research**

A study by Infante, Riddle, Horvath, and Tumlin (1992) explored the following in regards to verbal aggressiveness: the types of verbally messages used, the different types of messages received, the perceptions of hurt due to verbally aggressive messages, and the reasons for using verbal aggression. The study was intended to increase the understanding of the person who has the trait to be verbally aggressive.

The study by Infante et al. (1992) occurred over two sessions. During the first session, the subjects completed the Verbal Aggressiveness Scale (Infante & Wigley, 1986). The second session, a week later, had the subjects complete four scales regarding their verbal aggressiveness. The first scale asked the subjects to report the number of times the following verbally aggressive messages were said to them in the past month: character attacks, competence attacks, background attacks, physical appearance attacks, maledictions, teasing, ridicule, threats, swearing, nonverbal emblems that were perceived to attack one’s self-concept (i.e. eye-rolling).

The second scale instructed the subjects to rate each of the verbally aggressive
messages in terms of the degree of psychological or mental hurt that was felt when they were on the receiving end of a verbally aggressive message. The third scale asked the subjects to indicate how many times during the past month that they used the 10 types of verbally aggressive messages that were listed above. The fourth part of the study asked the subjects to select the reasons that they used verbally aggressive messages. Infante et al. (1992) provided a list of twelve reasons for the subjects to select. The reasons were: reciprocity, disdain, anger, unable to think of an argument, a rational discussion that turned into a verbal fight, being taught to be verbally aggressive, the situation brought up a past hurt, in a bad mood, trying to be funny, imitating a television or movie character who had used a verbally aggressive message, trying to be tough, or wanting to be mean (Infante et al. 1992).

Discriminant analysis was used to analyze the data. Results revealed that people who were high in verbal aggressiveness used competence attacks, teasing, nonverbal emblems, and swearing more frequently than those who were less verbally aggressive. As far as who received verbally aggressive messages, it was found that those who were high in verbal aggressiveness received the same amount of verbally aggressive messages as those who were low in trait verbal aggressiveness. In regards to hurt, it was revealed that threats, competence attacks, and physical appearance attacks were the most hurtful. Finally, people high in verbal aggressiveness endorsed the following reasons to be verbally aggressive: to appear tough, being in a rational discussion that turned into a verbal fight, wanting to be mean, and having disdain for the other person.

In a study on argumentativeness and verbally aggressive behavior in a variety of disagreement situations, Infante, Myers, and Buerkel (1994) explored whether argumentativeness was perceived as constructive, and whether verbal aggressiveness was perceived as destructive. The authors selected family and organizational communication contexts to study. The family
context was selected because family members have less pressure to communicate in socially desirable ways; whereas the organizational setting was selected because it is more regulated and restricted, and employees are reluctant to display a less appealing side of oneself in public.

Participants in the study were asked to describe in writing an experience where a family or an organizational disagreement had occurred, and whether the disagreement was either constructive or destructive. The researchers then read the descriptions of the disagreements. The participants and researchers rated the communication as either argumentative or verbally aggressive. It was found that argumentativeness was observed in constructive disagreements, and verbal aggressiveness was observed in destructive disagreements—regardless of the communication context (family or organizational). Verbal aggressiveness was reported more in the family context as compared to the organizational context. This study implies that argumentativeness is viewed as being constructive in disagreements, and verbal aggressiveness is destructive in disagreements.

**Instructional setting.** Rocca and McCroskey (1999) found that college students perceived verbally aggressive instructors as using fewer immediacy behaviors as well as lower amounts of homophily as compared to instructors who were not verbally aggressive. Also, research suggests that verbal aggressiveness is related to lower amounts of state motivation and overall student satisfaction with high verbally aggressive instructors (Myers & Knox, 2000; Rocca & Meyers, 1999). Students view an instructor’s use of verbal aggressiveness as being inappropriate, and the instructor is viewed as being highly contentious (Martin, Anderson, Burant, & Weber, 1997). Highly verbally aggressive instructors do not give students the impression of being open to student questions or interactions (Meyers & Rocca, 2000). Goodboy and Myers (2011) looked at students’ argumentativeness and verbally aggressive traits as a means to express dissent in the
classroom. They focused on three types of dissent: expressive (an attempt to vent negative feelings in order to feel better), rhetorical (an attempt to persuade an instructor to correct a perceived wrongdoing), and vengeful (an attempt to ruin the instructor’s reputation) that students reported that they would use when confronting an instructor. In addition, the participants completed the Verbal Aggressiveness Scale and the Argumentativeness Scale. It was found that students high in argumentativeness used the rhetorical approach and those high in verbal aggressiveness used the rhetorical approach or the vengeful approach. The rhetorical approach is the more positive way to express dissent, whereas vengefulness is a negative way to express dissent. Verbally aggressive students favored the vengeful approach as one strategy, and this supports the notion that verbally aggressive communication can be destructive. The research examining instructor’s verbal aggressiveness demonstrates that verbal aggression is perceived as being destructive by the students. The next section will review verbal aggressiveness in the organizational setting.

**Organizational setting.** Not surprisingly, verbal aggressiveness in the organizational setting has also been found to be destructive. Verbally aggressive supervisors are rated unfavorably by subordinates, and verbally aggressive subordinates are rated unfavorably by supervisors (Gorden, Infante, & Izzo, 1988; Infante & Gorden, 1991; Madlock & Kennedy-Lightsey, 2010). Research also indicates that employees’ perceptions of supervisor’s verbal aggressiveness were correlated with lower credibility of the supervisor, and less liking of the supervisor (Cole & McCroskey, 2003). Research clearly reveals that verbal aggressiveness on the part of a supervisor or subordinate equates to lower satisfaction, supporting verbal aggressiveness as a destructive force.

Another aim of the present study is to determine whether negative effects of verbal aggressiveness in the instructional and organizational setting will extend to the sibling
relationship. Verbal aggressiveness in the interpersonal relationship context will be reviewed in
the following section.

**Interpersonal setting.** Not only is verbal aggressiveness destructive in the classroom and in
the organizational setting, but it has also been found to have negative effects in interpersonal
relationships. For example, according to Rubin (1970), liking is conceptualized as the degree of
favorable evaluation and respect directed toward another person. Myers and Johnson (2003)
investigated liking and verbal aggressiveness in interpersonal relationships. Participants in the
study were asked to consider an individual with whom they had a recent interaction, and to
reference this interaction when completing the Verbal Aggressiveness Scale (Infante and Wigley,
1986) and the Liking Scale (Rubin, 1970). Data analysis revealed that perceived verbal
aggressiveness of the person in the recent interaction was negatively correlated with liking for
the participant. In short, when individuals are perceived to be verbally aggressive, they are less
liked.

Research by Venable and Martin (1997) analyzed the relationship of communication
satisfaction and relationship satisfaction with argumentativeness and verbal aggressiveness in
dating relationships. Those relationships that either the self or the partner used verbal aggression
were negatively related to communication and relationship satisfaction. Overall, these results
indicate that when verbal aggressiveness occurs in the dating relationship, couples are
dissatisfied.

Rill, Baiochi, Hopper, Denker, and Olson (2009) sought to investigate the cause of verbal
aggressiveness in dating relationships by exploring the impact on: perception of partner
commitment, self-commitment, and self-esteem. The researchers had participants complete
Infante and Wigley’s (1986) Verbal Aggressiveness Scale, Rosenberg’s Self-Esteem Scale
Duncan and Ross’s (1998) Commitment Scale. Results showed that as perceptions of partner’s commitment to the relationship increases, self-esteem also increases. Furthermore, as one’s self-esteem increases, so does one’s commitment to the relationship. Also, when one’s reported self-esteem decreased, the predisposition toward verbal aggressiveness increased. Results also indicated that self-esteem was a predictor of one’s reported trait verbal aggressiveness, with those with higher self-esteem reporting less verbal aggressiveness, and those with lower self-esteem reporting higher levels of verbal aggressiveness. These findings suggest that there is a relationship between self-esteem and verbal aggressiveness.

While the above research examined verbally aggressive communication used within dating relationships, Sutter and Martin (1998) explored verbal aggressiveness in the disengagement, or break-up, of a romantic dating relationship. The research focused on the relationship between being trait verbally aggressive and the use of verbal aggressiveness during the break-up, and the perceived similarity of the partners in using verbal aggression in the break-up. Results revealed that the individuals who reported self or partner trait verbal aggressiveness were more likely to be verbally aggressive during the break-up. Also, the more that the participants in the study perceived themselves as using verbal aggression, the more that they reported their partner using verbal aggression. Likewise, the participants who perceived themselves as not using verbal aggressiveness reported their partners were less likely to use verbal aggressiveness. This implies that there is a reciprocity effect of verbal aggression in dating relationships. Simply put, people often respond to a verbally aggressive message with their own verbally aggressive message, and this cycle often leads to negative relational outcomes (Infante, Myers, & Buerkel, 1994).

In marriages, verbal aggressiveness can lead to serious relational problems (Sabourin, 1996). In fact, distressed couples use more verbally aggressive communication than nondistressed
couples (Halford & Sanders, 1990; Rancer, Baukus, & Amato, 1986; Sabourin & Stamp, 1995). Husbands of wives who are verbally aggressive show more signs of depression than husbands whose wives are not rated as being verbally aggressive (Segrin & Fitzpatrick, 1992). In addition, verbal aggression leads to reduced trust and relationship termination in marriages (Infante, 1995).

Another potentially close interpersonal relationship is the roommate relationship. Martin and Anderson (1995) explored verbal aggressiveness in the roommate relationship. Specifically, the researchers determined whether the roommates who reported being high in verbal aggressiveness would have less positive feelings for their roommates. They had roommates complete the Verbal Aggressiveness Scale (Infante & Wigley, 1986) and Hecht’s Communication Satisfaction Scale (1978). Statistical results revealed that roommates who were both high in verbal aggressiveness expressed less communication satisfaction than roommates who were both low in verbal aggression, or in instances where only one of the roommates reported being high in verbal aggressiveness. Thus, verbal aggression causes dissatisfaction in roommate relationships.

**Siblings.** Most people report being satisfied in their relationships with their siblings (Floyd & Parks, 1995). However, there are moments when siblings use destructive or antisocial actions toward their siblings in order to be mean, hurtful, or playful (Felson, 1983). Verbal aggressiveness is one of these destructive behaviors that some siblings use toward one another. Infante, Myers, and Buerkel (1994) contend that verbal aggression is common in family relationships due to the fact that family members have less pressure to use socially desirable communication. As Dunn (2000) states, siblings often communicate in an “uninhibited, no-holds-barred expressions of negative emotions” (p. 244).

aggressiveness in sibling relationships. The relationship between verbal aggressiveness, satisfaction, and interpersonal trust was examined. In addition, the relationship between verbal aggressiveness and teasing was studied, along with whether siblings who were more satisfied with their siblings found verbally aggressive messages to be more hurtful. Finally, Martin et al. (1997) looked at sibling sex influence on verbal aggressiveness in the sibling relationship. Results from the study revealed that self-reported and perceived sibling use of verbal aggressiveness between siblings correlated negatively to communication satisfaction and trust. In other words, when verbal aggression is present in relationships, there is less satisfaction and trust. Next, it was revealed that being verbally aggressive with one’s sibling was negatively related to teasing one’s sibling. Hence, individuals who report teasing their siblings tend to be more verbally aggressive. Additionally, sibling satisfaction was negatively related to being hurt from receiving verbally aggressive messages from a sibling. The results also indicated that female/female dyads tend to be more satisfied and use less verbally aggressive messages and teasing than the other dyads (female/male, male/female, male/male). Female/male sibling dyads expressed more verbal aggression than the other dyads. Females reported greater hurt from verbal aggressiveness than the male participants. As can be seen from this study, verbal aggression affects sibling relationships in a negative way, and it is considered hurtful.

Myers and Goodboy (2006) looked at perceived sibling use of verbal aggressiveness across the lifespan, and the impact of the verbally aggressive messages on liking, trust and commitment. The participants completed the Measure of Sibling Verbal Aggressiveness (Martin, Anderson, & Rocca, 2005), the Liking Scale (Rubin, 1970), the Dyadic Trust Scale (Larzelere & Huston, 1980), and the Measure of Commitment Scale (Stafford & Canary, 1991). The results revealed that perceived use of verbally aggressive messages in sibling relationships decreases across the
lifespan, and verbally aggressive messages are used more frequently in young adulthood than in middle or late adulthood. In addition, it was found that the use of some verbally aggressive messages were related indirectly to sibling liking, trust, and commitment. Five of the ten verbally aggressive messages used in this study were negatively correlated with liking, trust, and commitment. For example, the following five verbally aggressive messages were perceived negatively: “attacks my intelligence,” “makes fun of my physical appearance,” “complains to others about me,” “embarrasses me in front of others,” and “points out my faults to me.” According to Myers and Goodboy (2006), these five messages were more hurtful than the following five verbally aggressive messages: “teases me about my relationships with others,” “calls me uncomplimentary nicknames,” “threatens to get me in trouble,” “makes fun of how I talk,” and “tells me that I lack common sense.” Because the latter messages were perceived as less hurtful, they were not correlated with liking, trust, and commitment. Therefore, the more hurtful the verbally aggressive message, the less siblings are going to trust and like one another, and they will be less committed to the relationship.

When examining verbally aggressive messages and their effect on sibling relationship satisfaction, Teven, Martin, and Neupauer (1998) found that siblings’ verbal aggressiveness was negatively correlated with overall sibling relationship satisfaction. The more verbally aggressive messages that were used by siblings, the less satisfaction reported in the sibling relationship. The study also found differences in the number of verbally aggressive messages that males and females received. Females reported being on the receiving end of verbally aggressive messages more than males. As explained above, verbal aggressiveness negatively affects sibling relationship satisfaction, and women feel more verbally abused than males.

Martin, Anderson, and Rocca (2005) explored the relationship between verbal
aggressiveness, credibility, satisfaction, and trust in adult sibling relationships (siblings over 30). The participants reported their own use of verbal aggressiveness in their sibling relationship, and their perceptions of their siblings’ credibility. Martin et al. (2005) also looked at how much trust and satisfaction was reported in the sibling relationships. The results indicated that the participants’ use of verbally aggressive messages was negatively related to their perceptions of their siblings’ credibility. In other words, verbal aggressiveness in the sibling relationship decreases communication satisfaction, trust and credibility (Martin et al. (2005).

Research by Myers and Bryant (2008) sought to identify the specific types of verbally aggressive messages that emerging adult siblings (ages of 18 to 25 years old) use with one another. Next, Myers and Bryant (2008) determined whether these types of messages differed in perceived hurtfulness, intensity, and intent. The participants were instructed to provide an example of at least one verbally aggressive message that was said by their sibling. A content analysis was utilized, and the messages were coded and categorized. It was found that siblings use seven types of verbally messages in emerging adulthood, and these messages are: name calling, insults, withdrawal, physical acts or threats, repudiating the relationship, negative affect, and unfair comparisons. It was further reported that these verbally aggressive messages did not differ in their perceived hurtfulness, intensity, or intent. The research on verbal aggression clearly demonstrates that verbal aggressiveness is destructive in the sibling relationship, and even though the results may seem redundant, the following hypotheses and research questions will be posed for the present study:

H5: Perceived verbal aggressiveness of a sibling will be negatively related to communication satisfaction in the sibling relationship.

H6: Participant’s self-reported verbal aggressiveness will be negatively related to
communication satisfaction in the sibling relationship.

RQ3a: Does the relationship between perceived verbal aggressiveness of a sibling and communication satisfaction depend on whether the participant is high or low in verbal aggressiveness?

RQ3b: Does the relationship between a participant’s self-reported verbal aggressiveness and communication satisfaction depend on whether the sibling is high or low in verbal aggressiveness?

H7: Perceived verbal aggressiveness of a sibling will be negatively related to relationship satisfaction in the sibling relationship.

H8: Participant’s self-reported verbal aggressiveness will be negatively related to relationship satisfaction in the sibling relationship.

RQ4a: Does the relationship between perceived verbal aggressiveness of a sibling and relationship satisfaction depend on whether the participant is high or low in verbal aggressiveness?

RQ4b: Does the relationship between a participant’s self-reported verbal aggressiveness and relationship satisfaction depend on whether the sibling is high or low in verbal aggressiveness?

As mentioned in the first chapter, Infante, Chandler, and Rudd (1989) developed a model that attempts to predict violence as a result of an argumentative skill deficiency. This model, the Argumentative Skill Deficiency Model (ASDM), posits that individuals who are low in argumentativeness, or have an inability to produce arguments, are more prone to be verbally aggressive. As a result, the ASDM asserts that verbal aggressiveness becomes a catalyst for violence in a relationship (Infante, Chandler, & Rudd, 1989). Next, research on the ASDM will
be explored.

**Conceptualization of the Argumentativeness Skill Deficiency Model (ASDM)**

Early research by Toch (1969) and Bandura (1973) found that when people lack the verbal skills to handle a conflict constructively, they often resort to verbal aggression. Moreover, verbal aggression increases the chance of further aggression. In a similar fashion, Infante, Chandler, & Rudd (1989) introduced the Argumentativeness Skill Deficiency Model (ASDM) to predict aggression stemming from a lack of argumentative skills. The model posits that destructive communication such as verbal aggression serves as a catalyst for physical violence. On the other hand, constructive communication such as argumentativeness lowers the probability that verbal conflict will spiral into physical aggression (Infante, Chandler & Rudd, 1989). In other words, those who are low in trait argumentativeness, and those who have difficulty generating arguments become frustrated, and out of this frustration and anger, they are more likely to use verbal aggression, and this verbal aggression leads to other forms of aggression, like physical violence. A contributing factor to the ASDM is that oftentimes verbal aggression becomes a catalyst due to a norm of reciprocity (Infante, 1988). To explain, if one person is using verbally aggressive communication directed at another person, then this person may be inclined to resort to verbally aggressive communication as well. An end result could be escalating emotions and anger that may lead to physical violence.

**Research on the ASDM**

**Compliance-gaining.** The ASDM has been tested in various contexts. A connection between argumentativeness and verbal aggression leading to physical aggression has been established in several studies supporting the ASDM. For example, when looking at compliance-gaining strategies, Boster, Levine, and Kazoleas (1993) asked participants to partake in a series
of negotiations in which the participants’ compliance-gaining behaviors were measured. The researchers looked at how verbal aggressiveness and argumentativeness determined the type of compliance-gaining strategy used. The participants that reported using verbally aggressive messages used negative compliance-gaining strategies such as threats because they lacked the argumentative skills to use strategies that were more positive in nature (altruism, liking, compromise, negotiations, etc.). Also, highly argumentative people used more diverse compliance-gaining strategies such as altruism and negotiation than compared to less argumentative people. Overall, argumentativeness is positively associated with diversity in compliance-gaining strategies, whereas verbally aggressive individuals resort to negative compliance-gaining strategies such as threats, due to poor argumentative skills. This supports the ASDM in that a deficiency in argumentative skills induces verbal aggression, which may lead to violence as reported in the next study.

Another compliance-gaining study by de Turck (1987) had 394 students answer how likely they would be to use physical aggression to secure their persuasive goal in one of eight hypothetical compliance-gaining episodes. The participants also gave their demographic information. de Turck (1987) used a repeated measures analysis of variance in order to determine the persuasive agents’ likelihood of using physical aggression. The results showed that males were significantly more likely to use physical violence to persuade a noncompliant persuasive target, especially if the other person was male, as well as a noninterpersonal relational partner (a stranger, and not a friend or acquaintance). In addition, males were also more likely to use physical violence in order to achieve their persuasive goal after two attempts to communicatively secure their goal. Thus, males are more likely than females to use physical aggression in order to gain compliance.
Adolescents. Roberto (1999) applied the ASDM to aggressive and nonaggressive adolescent boys. Aggressive boys were those who had been suspended from school for fighting. Nonaggressive boys were those who had not been suspended and were identified as nonaggressive by their vice principal or teacher. Boys who were high in verbal aggressiveness and low in argumentativeness were suspended for fighting more often than boys low in verbal aggressiveness. Likewise, Roberto and Wilson (1996) predicted adolescent boys who were low in argumentativeness, and high in verbal aggressiveness would demonstrate a greater likelihood to act out violently than boys who were higher in argumentative skills. It was found that verbal aggressiveness predicted the physically aggressive behavior being studied. However, in both of these studies (Roberto, 1999; Roberto & Wilson, 1996), high verbal aggressiveness, but not argumentativeness, was found to predict physical aggression. In adolescents, verbal aggression was closely related to the more severe behaviors of physical aggression (Atkin, Smith, Roberto, Fediuk, and Wagner, 2002).

Parenting. Furthermore, Infante (2005) proposed a link between verbal aggressiveness and corporal punishment. Parents who are more skilled in generating arguments are better able to use the appropriate argument to convince a child to comply without needing to resort to corporal punishment. On the other hand, parents that lack argumentative skills rely more on verbal aggressiveness and eventually to corporal punishment to gain compliance. Kassing, Pearce, and Infante (2000) examined corporal punishment in father/son dyads. Fathers who were higher in verbal aggressiveness and less skilled in generating arguments were more prone to resort to corporal punishment as a way to gain compliance from his son as compared to those fathers who had greater argumentative skills. Similarly, Roberto, Carlyle, and Goodall (2007) found further support in parental use of corporal punishment as being a result of a lack of argument skill. In
their study, the authors investigated not only the child’s perception of parental use of verbal aggressiveness and physical aggressiveness, but also the parents’ self-reported use of verbal aggressiveness and corporal punishment. It was found that children and parents had similar perceptions of the parents’ use of verbal aggressiveness. Both child and parent rated those parents who were verbally aggressive used corporal punishment more than parents who reported lower verbal aggressiveness and higher argumentativeness.

**Intimate relationships.** The ASDM has also been supported in research investigating intimate relationships. For example, Infante, Chandler, and Rudd (1989) tested whether husbands and wives in violent marriages would be less argumentative and more verbally aggressive than husbands and wives in nonviolent marriages. Abused wives were selected from battered women’s shelters, and abusive husbands were selected from wife-abuse therapy. The non-abused wives were selected from the waiting room of a gynecologist’s office, and the non-abusive husbands were married college students or employees at a factory. The participants completed a self-report Argumentativeness Scale (Infante & Rancer, 1982) and Verbal Aggressive Scale (Infante & Wigley, 1986), as well the Argumentative Scale (Infante & Rancer, 1982) and Verbal Aggressive Scale (Infante & Wigley, 1986) based on their perceptions of their partners argumentative and verbally aggressive tendencies. Infante et al. (1989) found that spouses in violent marriages were significantly lower in self-reported argumentativeness and significantly higher in self-reported verbal aggressiveness as compared to those spouses in nonviolent marriages. Furthermore, couples in violent marriages reported that their spouses were lower in argumentativeness and higher in verbal aggressiveness as compared to spouses in nonviolent marriages.

In addition, research conducted on nonviolent and violent couples found that wives in
violent disputes used significantly more verbally aggressive acts in comparison to the wives in nonviolent marriages. Similarly, husbands in violent marriages were reported as engaging in more verbally aggressive acts as compared to husbands in nonviolent marriages (Infante, 1990; Sabourin, Infante, & Rudd, 1993). Infante, Chandler, and Rudd (1989) assert: “The consequences of spouse abuse, besides death, include injury, anxiety, depression, and self-concept for both the abused and abusive spouses, and a general decline in the quality of family life” (p. 163). Moreover, Coleman (1982) found that males attributed 55% of their physical aggression toward their spouse because they were provoked by their spouse’s use of verbally aggressive messages. These studies reveal resounding evidence that lacking argumentative skills, and using verbal aggression can lead to physical aggression in marriages.

Another study that investigates the ASDM was conducted by Carey and Mongeau (1996). The researchers looked at the role that verbal aggressiveness, argumentativeness, negotiation and coping strategies, social support, conflict tactics, and sex differences play in violent dating relationships. Carey and Mongeau (1996) had the participants think of their current or most recent dating relationship while completing the following measures: the Argumentativeness Scale (Infante & Rancer, 1982), the Verbal Aggressiveness Scale, (Infante & Wigley, 1986), the Ways of Coping Inventory (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986), the Social Support Scale (Milardo, 1984), and the Conflict Tactics Scale (Straus, 1979). It is important to note that the Conflict Tactics Scale is comprised of four dimensions: verbal reasoning, verbal aggression-coercion, physical aggression-threat, and severe violence.

A series of t-tests revealed that men were more verbally aggressive, had less social support, and used social support less as a coping strategy. Females engaged in more verbal aggression-coercion than males. Both females and males tended to use the physical aggression-threat
conflict tactic. However, males reported using the behavior “throw/smash/hit/kick something” significantly more than females. On the other hand, women were more likely than men to “slap” their partner, “hit/try to hit with something,” and “threaten to hit/throw something.”

In addition, Carey and Mongeau (1996) wanted to assess how verbal aggressiveness predicted the frequency of dating violence. The results support the Argumentativeness Skill Deficiency Model. Multiple Regression was utilized, and it was found that verbal and physical aggression were positively related. Seemingly, this is the major premise of the ASDM, which asserts that verbal aggression may lead to physical aggression. Conversely, argumentativeness was not a predictor of physical aggression. This also supports the ASDM, as the better argumentative skills one possesses, the less likely he/she will become verbally aggressive—which may lead to physical aggression.

It appears that the ASDM accurately predicts that a lack of argumentative skills leads to verbal aggression, which in many cases, results in physical aggression. “Although the ultimate causes of physical aggression may be economics, cultural, and demographic, one of the most proximate and powerful causes is verbal aggression” (Hamilton, 2012, p.6). However, the ASDM has received criticisms (Hamilton & Mineo, 2002; Roberto, 1999), which will be discussed in detail later in this chapter. Yet, research supports that the ASDM does demonstrate that a lack of argumentativeness skills leads to verbal aggression, and this in turn, becomes a catalyst for violence (Atkin, Smith, Roberto, Fediuk, & Wagner, 2002; Boster, Levine, & Kazoleas, 1993; Carey & Mongeau, 1996; deTurck, 1987; Infante, 2005; Infante, Chnadler, Chandler, & Rudd, 1989; Roberto, Carlyle, & Goodall, 2007). Rancer and Avtgis (2006) report that because the ASDM has been questioned in regard to if an argumentative skill deficiency is an explanation for verbal aggression, then “…additional research will need to be conducted
before its utility can be dismissed or retained” (p. 28). Therefore, this study is concerned with how the Argumentative Skill Deficiency Model will help predict the consequences of a lack of argumentative skills and the use of verbal aggressiveness between and among siblings.

As mentioned and explained earlier, there are many similarities between intimate-partner couples and siblings. To review, sibling relationships reflect intimate couples in many ways. Often siblings live in the same house with one another, and have many shared-resources as do couples. In addition, many siblings see one another on a daily basis, as do most couples. Also, siblings are prone to argumentative behaviors at times, just as intimate couples are.

Moreover, Cahn (1996) found the following research in which the same conclusions may be applicable to the sibling relationship. Cahn (1996) states, “Research shows that men are more likely to be the perpetrators of violence toward their female partners who are more likely to be their victims. Bograd (1990) reports that ‘wives suffer significantly more physical injuries than do husbands’” (p.133). According to Marshall (1994), males are more likely to hit or kick a wall, door, or furniture. Based on ASDM research, the following hypotheses and research questions will be posed in order to determine whether the same physically aggressive acts and dynamics occur in the sibling relationship:

H9: Participants’ self-reports of argumentativeness will be negatively related to their self-reports of verbal aggressiveness.

H10: Perceived argumentativeness of a sibling will be negatively related to perceived verbal aggressiveness of a sibling.

H11: In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to self-reports of physical aggressiveness when participants are low in argumentativeness, but not when they are high in argumentativeness.
RQ5: For participants low in argumentativeness, will self-reported verbal aggression be related to self-reported physical aggression when (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female? Will these effects be observed when the participants are high in argumentativeness?

H12: In male P-male S dyads, perceived verbal aggressiveness of a sibling will be positively related to perceived physical aggressiveness of a sibling when siblings are perceived to be low in argumentativeness, but not when they are perceived to be high in argumentativeness.

RQ6: For siblings low in argumentativeness, will perceived verbal aggressiveness of a sibling be related to perceived physical aggressiveness when (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female? Will these effects be observed when the siblings are high in argumentativeness?

H13: In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to perceived physical aggressiveness of a sibling.

RQ7: Will the above effect be observed when (a) both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female?

H14: In male P-male S dyads, perceived verbal aggressiveness of a sibling will be positively related to participants’ self-reports of physical aggressiveness.

RQ8: Will the above effect be observed when (a) both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the
sibling is female?

The above hypotheses and research questions are interested in the gender of the dyads. Much research has been conducted on argumentativeness and gender differences. In addition, research has explored gender differences in the use of verbally aggressive messages. The next section provides an overview of gender research pertaining to argumentativeness and verbal aggressiveness.

**Gender Differences in Argumentativeness, Verbal Aggressiveness and Physical Aggressiveness**

**Argumentativeness and Gender Differences**

Research indicates that males report higher levels of argumentativeness than females (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985). In his study on argumentative students in a speech class, Infante (1982) found a significant difference in male and female scores of argumentativeness, with males scoring higher in argumentativeness than females. Infante (1982) offered the explanation that males may be more argumentative because they are merely fulfilling sex-role expectations. Males are conditioned to be competitive and assertive, and by being argumentative, they fulfill male role behavior. Similarly, Rancer and Baukus (1987) studied how sex differences influenced beliefs about arguing. They concluded that men and women differ in their overall belief structures about arguing. Females view arguing as hostile and combative. In addition, they reported that an argument is a strategy to control another. Additionally, Nicotera and Rancer (1994) examined the influence of self-perceptions and social stereotyping in argumentativeness and verbal aggressiveness. The subjects completed Infante and Rancer’s (1982) Argumentativeness Scale, and it was again found that males reported higher scores in argumentativeness than females. Furthermore, in this study, both males
and females generalized males as being more argumentative than females. Other studies also indicate that males report higher levels of argumentativeness than females (Infante, 1985; and Rancer & Dierks-Stewart, 1985).

However, Schullery and Schullery (2003) conducted a study to determine the relationship of argumentativeness to age and to higher education. They sampled 639 adult (with the mean age being 37 and the age ranging from 19-67) full-time employees in order to assess argumentativeness depending on the years of schooling that the employees reported. The results indicate that argumentativeness in men declines through the twenties, and levels off around the age of forty-five. On the other hand, for women, argumentativeness decreases around thirty, and levels off in the fifties. Thus, it would appear that argumentative tendencies may change throughout the lifespan.

In summary, in young adults, research supports that males report higher argumentativeness levels than females (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985). However, research by Schullery and Schullery (2003) suggests that in older adults, argumentativeness decreases in males and females at different ages. While all of the research reports consistency in the study of gender and argumentativeness, there has been little research that has explored the relationship between argumentativeness and siblings. Therefore, the present study will explore gender differences in argumentativeness. The following hypothesis is presented:

H15: Male self-reported argumentativeness levels will be higher than female self-reported argumentativeness levels.

**Verbal Aggressiveness and Gender Differences**

Just as some research indicates that males report higher argumentativeness levels than
females (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985), research also indicates that males report higher levels of verbal aggressiveness than females (Infante, Wall, Leap, & Danielson, 1984; Johnson, Becker, Wigley, Haigh, & Craig, 2007; Jordan-Jackson, Lin, Rancer, & Infante, 2008; Nicotera & Rancer, 1994; Roberto & Finucane, 1997). For example, Infante, Wall, Leap, & Danielson (1984) explored whether or not individuals who reported high argumentativeness were more likely to receive verbally aggressive messages, and whether there were gender differences in the tendency to use verbally aggressive responses. It was found that males were more likely to use verbal aggressiveness than females when confronted with argumentative people. Thus, females reported less verbal aggressiveness than males (Infante et al., 1984).

In another study investigating verbal aggressiveness, Nicotera and Rancer (1994) looked at sex-based stereotypes regarding argumentativeness and verbal aggressiveness. In the study, after completing the Argumentativeness and Verbal Aggressiveness Scales, females scored significantly lower in both argumentativeness and verbal aggressiveness than the males in the study. In addition, when considering the perception of stereotypes of aggressive communication, both male and female participants in the study generalized males as being more argumentative and verbally aggressive than females. Here, according to both self-report measures, and perception measures of verbal aggressiveness, females display less verbal aggressiveness than males.

Moreover, Roberto and Finucane (1997) examined argumentativeness and verbal aggressiveness in the adolescent population. The researchers had 306 adolescents complete modified versions of the Argumentativeness Scale and Verbal Aggressiveness Scale. The changes in the instruments reflected vocabulary that adolescents could relate to and comprehend.
more than the vocabulary on the original scale. The modified instruments did not compromise the internal consistency or the reliability of the measures. The t-test scores showed that adolescent males scored significantly higher in argumentativeness and verbal aggressiveness than females. Therefore, in the adolescent population, females report lower levels of verbal aggressiveness than males.

When exploring verbal aggressiveness in public versus private arguments, it was revealed that women used similar levels of verbal aggressiveness as their male counterparts in private arguments. However, when engaged in a public argument, women were less likely to use verbal aggressiveness than men were in the public setting. Thus, overall, women are less likely to use verbal aggressiveness as compared to males.

Further, Jordan-Jackson, Lin, Rancer, and Infante (2008) examined the perceptions of the use of argumentativeness and verbal aggressiveness in same-sex dyads (male/male and female/female). Here it was found that the female dyads were less argumentative, but the women were more verbally aggressive than males. However, most research suggests that males report higher levels of verbal aggressiveness than females. Therefore, the following hypothesis is offered:

H16: Male self-reported verbal aggressiveness levels will be higher than female self-reported verbal aggressiveness levels.

Physical Aggressiveness and Gender Differences

As reported earlier, research by Cahn (1996) states, “Research shows that men are more likely to be the perpetrators of violence toward their female partners who are more likely to be their victims. Bograd (1990) reports that ‘wives suffer significantly more physical injuries than do husbands’” (p.133). According to Marshall (1994), males are more like to hit or kick a wall,
door, or furniture. Due to these findings, the following hypothesis is posited:

H17: Male self-reported physical aggressiveness will be higher than female self-reported physical aggressiveness.

The next section offers an overview on the criticisms and critiques of the concept of the ASDM, the Argumentativeness Scale, and the Verbal Aggression Scale.

**Critiques of the ASDM, Argumentativeness Scale, and Verbal Aggressiveness Scale**

As noted earlier, a fourth objective of the research will be to obtain information about whether scores on the Verbal Aggressiveness Scale are related to the occurrence of actual verbally aggressive behaviors as recalled by participants. First, criticisms of the ASDM, the Argumentativeness Scale, and the Verbal Aggression Scale are discussed.

**Critiques of the ASDM and Argumentativeness Training.** Although argumentativeness and the Argumentative Skill Deficiency Model have been studied extensively, neither argumentativeness, the Argumentativeness Scale, nor the ASDM are without their critics. One major criticism of the ASDM is that it suggests that one could undergo argumentation training, and the training should enhance argumentativeness, and in turn, inhibit one’s tendency to use verbally aggressive messages. However, Hamilton and Mineo (2002) state: “there is virtually no empirical evidence that ARGgt has a large negative effect on verbal aggressiveness” (p.284). (As noted earlier, ARGgt is an interaction of the tendency to approach arguments (ARGap) and the tendency to avoid arguments (ARGav). This is expressed as: \( \text{ARGgt} = \text{ARGap} - \text{ARGav} \) (Infante & Rancer, 1982). That is, one’s motivation to argue has not been found to decrease one’s tendency to use verbally aggressive messages in empirical studies.

A few studies have explored the relationship between argumentativeness and verbal
aggressiveness. First, because previous research suggests that males are more argumentative than females (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985) Kosberg and Rancer (1998) sought out to increase female’s argumentativeness skills. In order to do this, Kosberg and Rancer (1998) implemented a training program that examined the impact of training of argumentativeness skills in male and female participants in order to determine whether training could minimize any gender differences in argumentative behavior. In other words, any gender differences in motivation to argue that existed before the training would be annulled as a result of the argumentativeness skills training. As a result, there would be no significant differences between males and females in motivation to argue. In addition, due to the an increase of argumentativeness skills, the researchers expected to see verbal aggressiveness eliminated because once argumentative skills are mastered, the participants would no longer need to rely on verbally aggressive behaviors to express themselves.

The researchers trained sixty-one male and seventy-one female students on techniques to improve their argumentative skills over a two-week period. It was found that after training, no significant differences were reported between males’ and females’ motivation to argue. Therefore, if any gender differences did exist before training (as research indicates), after the training, no differences in males’ and females’ argumentativeness tendencies existed. The researchers attribute the training as to being the reason that males and females were similar in their reports of their argumentative tendencies. Also, as a result of the training, it would be expected that any gender differences in verbal aggressiveness would be eliminated. However, just as research suggests that males are more verbally aggressive (Infante, Wall, Leap, & Danielson, 1984; Jordan-Jackson, Becker, Wigley, Haigh, & Craig, 2007; Jordan-Jackson, Lin, Rancer, & Infante, 2008; Nicotera & Rancer, 1994), they also reported being more verbally
aggressive in this study, even after argumentative skills training. Thus, the training provided by the Kosberg and Rancer (1998) “…did little to negate previously observed sex differences in verbally aggressive behavior” (p. 260). Here, it may be concluded that through training, it may be easier to induce individuals to be more argumentative, whereas it may be more difficult to reduce verbal aggressiveness.

This study (Kosberg and Rancer, 1998) raises questions about the ASDM. A major implication of the ASDM is that if verbal aggression can be controlled, then this can impede physical violence (Infante, Chandler, & Rudd, 1989). Kosberg and Rancer (1998) were not successful in training males to use better argumentative skills in order to reduce their verbally aggressive messages. This suggests that argumentativeness training only enhances argumentativeness, but it is unsuccessful in inhibiting verbal aggressiveness.

Yet, Kosberg and Rancer (1998) offer suggestions as to why verbal aggressiveness did not decrease after argument skill training. First of all, men have been conditioned to be more competitive than women. Out of competitiveness, they may resort to verbally aggressive messages to help get their points across. Secondly, the researchers assert that a better training system may need to be in place in order to reduce verbal aggressiveness. Further, two weeks may not be enough time to adequately train individuals in argumentative skills, and to also demonstrate the importance of decreasing the use of verbally aggressive messages (Kosberg & Rancer, 1998).

Moreover, research by Rancer, Whitecap, Kosberg, and Avtgis (1997) reflects similar findings in attempts to increase argumentativeness and reduce verbal aggressiveness in 238 adolescents who were in the seventh grade. A training program was addressed to increase argumentativeness and decrease verbal aggressiveness in this population. The researchers trained
the seventh grade students in argumentative skills, had the students practice the skills, and had them complete adolescent versions of the Argumentativeness Scale (Infante & Rancer, 1982) and Verbal Aggressiveness Scale (Infante & Wigley, 1986) during the first week of school (before the training occurred) and after the training took place. The researchers were interested to find out: if argumentativeness would increase after the training; if verbal aggressiveness would decrease after the training; and if the students would be able to generate significantly more arguments after the training occurred.

Once again, results varied with the training. After the training, students did significantly increase their general tendency to argue. Therefore, the training was effective in inducing students to become more argumentative. The results revealed another positive outcome of the study. The results showed a significant difference between the number of arguments that the students were able to generate before and after the training. Thus, the training helped the students learn how to better construct arguments.

However, as argumentativeness increased, so did verbal aggressiveness in the students. The training could not help control the use of verbally aggressive behaviors. In fact, the opposite happened, and the students became more verbally aggressive. These results conflict with the ASDM. Increasing argumentativeness should contribute to less verbal aggressiveness because the newly acquired arguing skills should help overcome or reduce the need to use verbally aggressive messages to express oneself.

It is important to note that Rancer et al. (1997) assert that the increase in verbal aggressiveness may be due to several explanations. For example, one explanation is that perhaps the students had a better understanding of verbal aggressiveness, and reported a more accurate self-analysis once they received information and training on verbal aggressiveness. In other
words, the students better understood what verbal aggressiveness was, and the scores on the
Verbal Aggressiveness Scale (Infante & Wigley, 1986) indicated that. A second possible
explanation provided was that in today’s society, verbal aggression is part of our culture, and it is
not internalized as a destructive form of communication. Case in point, mass media (TV, music,
movies) is full of verbally aggressive messages such as cursing and character attacks. Therefore,
constant exposure to the verbal aggressiveness in society and in the media desensitizes
adolescents to verbally aggressive behavior. Due to this desensitization, adolescents perceive this
behavior as being acceptable. As a result, they mimic the verbal aggressiveness that they have
internalized from the mass media. They are merely acting in ways they are exposed to on a daily
basis, and do not see verbal aggressiveness as a destructive form of communication. Instead, they
view it as an acceptable means of communication because they have a “that is the way that
everyone else talks/acts, so that is how I can/may act” viewpoint. A third possible explanation
offered is that more time and training needs to occur to help decrease verbal aggressiveness.
Training may need to be restructured to allot more time to cover the harmful outcomes and
effects of verbal aggressiveness.

In a follow-up study to the same adolescent population, Rancer, Avtgis, Kosberg, and
Whitecap (2000) examined if the levels of argumentativeness and verbal aggressiveness would
change approximately one year after the original training. Results indicated that there were no
significant differences between the levels of argumentativeness from this study in comparison to
the original study. This suggests that the skills training in argumentativeness was still effective in
that the argumentative scores did not decrease over the time span of the follow-up study. The
skills training for argumentativeness was successful. However, the results did indicate a change
in verbal aggressiveness, with verbal aggressiveness scores increasing in comparison to the
original study (Rancer, Whitecap, Kosberg, & Avtgis, 1997). Again, verbal aggressiveness was significantly higher the year after the original study and training. This study indicates that the argumentative skills training was beneficial, as the students’ argumentativeness did not decrease over the one year period. However, the results conflict with the ASDM. An increase in argumentativeness should result in a decrease in verbal aggressiveness.

As for the reassessment study, Rancer et al. (2000) again had several plausible explanations as to why verbal aggressiveness increased a year later after the training program. One explanation is that the adolescents may be frequent recipients of verbally aggressive messages, and as a result, they become more verbally aggressive themselves. A second explanation is that the students may have a difficult time understanding the difference between an attack on a person versus an attack on a position. So, perhaps the concepts of verbal aggressiveness and argumentativeness are being confused. Another explanation offered is that the training did not go into detail about the types of verbal aggressiveness, the causes of verbal aggression, or the dysfunctional consequences of the behavior. Therefore, the training needs revamped in order to help control verbal aggressiveness.

In regard to better training, Meyer, Roberto, Boster, and Roberto (2004) conducted a study in order to determine the effectiveness of a public health program called “Get Real About Violence.” The intent of the program was to reduce verbal and physical violence in the adolescent population. The program taught twelve lessons about physical aggression and verbal aggression to different high schools in the United States. Meyer et al. (2000) selected a pretest-posttest control group design in which to investigate how the program’s lesson would affect the participants’ verbal aggressiveness tendencies. The program lessons were taught to the experimental group during a class period. Prior to the program lessons, the participants
completed several measures about physical violence and aggression. Verbal aggressiveness was included as one of the measures. After the program lessons, the experimental group completed the same measures as they had prior to the lessons. The results of the pretest-posttest scores revealed that those participants who received the program training reported significantly lower verbal aggressiveness scores than the control group who did not receive any of the program training. In addition, the group that received the training reported a decreased tendency to participate in verbal aggressiveness in the future.

This study demonstrates that by using an effective method of training, people may be taught to become less verbally aggressive, if given the proper tools to do so. Rancer et al. (2000) asserted that one reason that the participants in their study became more verbally aggressive could be due to the fact that a better training program needed to be provided in order to reduce adolescent verbal aggressiveness. Meyer et al. (2004) demonstrate that the “Get Real About Violence” program was one such effective program that was able to reduce participant’s verbal aggressiveness. Therefore, with the right program, skills training may be capable of both increasing argumentativeness as well as reducing verbal aggressiveness.

Although the study mentioned above by Rancer et al. (2000) reported that training created an increase in argumentativeness and in verbal aggressiveness; this should not imply that an increase in argumentative skills will also result in an increase in verbal aggressiveness as well. For example, a study by Colbert (1993) examined verbal aggressiveness and argumentativeness scores in high school debate team students. Colbert (1993) looked at debaters who had one or more years of debate experience as compared to debaters who were just beginning the debate team. The results revealed that experienced debate students reported significantly lower verbal aggressiveness scores than those students who were just beginning to debate. This study
indicates that the students who were experienced knew how to argue better, and therefore, they relied less on verbal aggressiveness since they were skilled at attacking issues and not attacking self-concepts of others. Overall, the higher the argumentativeness skills resulted in a lower tendency to use verbal aggressiveness. This supports the notion of the ASDM, in that argumentativeness has a negative effect on verbal aggressiveness.

In addition, Sanders, Wiseman, and Gass (1994) established that argumentativeness has a negative effect on verbal aggressiveness. The study examined whether training in argumentation aided critical thinking by improving the ability to differentiate between strong and weak arguments, and whether training increased the need for cognition, argumentativeness, perceived arguing effectiveness and a decrease in verbal aggressiveness. Sanders et al. (1994) had participants complete questionnaires in the first and last weeks of a semester evaluating their argument perception, perceived arguing effectiveness, argumentativeness, need for cognition and verbal aggressiveness. The results showed that argument instruction enhanced the ability to determine weak examples and causal arguments, increased perceived arguing effectiveness and decreased verbal aggressiveness. These results support the ASDM by demonstrating that those who develop critical thinking skills through instruction/training become better able to construct strong arguments, thereby reducing a tendency to utilize verbally aggressive messages. The training in argumentativeness positively affected the reduction of verbal aggressiveness.

In sum, Hamilton and Mineo (2002) assert that there is virtually no empirical evidence that argumentativeness has a large negative effect on verbal aggressiveness. However, there are, in fact, studies that demonstrate that better argumentative skills result in a decrease in the use of verbal aggressiveness (Colbert, 1993; Meyers et al., 1994; Sanders et al., 1994) thereby supporting the ASDM.
Critiques of the Argumentativeness Scale

Wording of the scale. Dowling and Flint (1990) offer criticisms in regard to the Argumentativeness Scale (Infante & Rancer, 1982). The issue at stake is that of the wording used in the Argumentativeness Scale, which could pose difficulty assessing argumentativeness. It is argued that the term *argument* could have a different meaning to different people. For instance, participants may view the term *argument* as “relationally-based” rather than “rational content-based discussions of issues” (p186). In addition, the ARGav measure’s items do not use the term *issues*; whereas the ARGap measure does use the term *issues*. As mentioned previously, according to Infante and Rancer (1982), ARGav is one’s tendency to avoid arguments, and ARGap is one’s tendency to approach arguments. The term *issues* is relevant because it reflects the conceptualization of argumentativeness. By the ARGav measure not using *issues* in its wording, it may lead participants to perceive the avoidance items as having a negative connotation such as: fights, quarrels, and bickering, and not as an argument meant to be over issues, as the definition suggests.

In a study, Dowling and Flint (1990) investigated whether or not wording was problematic in the Argumentativeness Scale (Infante & Rancer, 1982). They reconstructed versions of the Argumentativeness Scale, and had students complete them. They also had the students complete the original version of the Argumentativeness Scale (Infante & Rancer, 1982). The four modified versions went as follows: form 1 was the original Argumentativeness Scale, form 2 used the altered wording of “arguing over controversial issues” in all of the items, form 3 replaced the word *issue* with *argument* in all of the items, form 4 included the wording “argument over controversial issues” in all of the items, and form 5 used the word *arguing* in all of the items, while deleting the term *issues* in the items. These various adjustments to the wording were
investigated to determine if the wording on the original Argumentativeness Scale and the wording on the modified scales would make a difference on how the subjects would respond to them. As a consequence, the wording on the altered scale items did make differences in the subjects’ responses. Specifically, the altered wording produced different scores on ARGap, ARGav, and ARGgt. Additionally, Dowling and Flint (1990) argue that individuals who are not familiar with academic meanings are more inclined to have significantly different scores in comparison to those who are more familiar with precise academic meanings.

Dowling and Flint (1990) advocate using the term *argument over controversial issues* into each item on the original Argumentativeness Scale. However, Rancer and Avtgis (2006) point out that while the ARGav items may not use the phrase *controversial issues*, the instructions on the original Argumentativeness Scale states explicitly: “This scale contains statements about arguing controversial issues.” Further, Rancer and Avtgis (2006) say that the researchers using the scale need to emphasize the instructions on the original Argumentativeness Scale before they administer it, and as a result, the problem of wording can be avoided.

**Social desirability.** One common concern with communication measurement scales is the issue of social desirability. Social desirability is the tendency for participants to respond to personality tests in such a way that presents them in a favorable light (Holden & Fekken, 1989). In other words, participants of a study may respond to a measurement in a way that makes them appear more socially desirable rather than their actual behavior or characteristics.

The Argumentativeness Scale (Infante & Rancer, 1982) has been examined in regard to social desirability. In order to test social desirability as a trait, Chen (1994) hypothesized that those who are high in social desirability would be significantly lower in argumentativeness than low social desirability individuals. Here it was presumed that lower argumentativeness is the
more socially desirable trait (as compared to high argumentativeness). A shortened, ten-item, Argumentativeness Scale (Infante & Rancer, 1982) and a Social Desirability Scale (Strahan & Gerbasi, 1972) were given to a group of college students. Based on the social desirability scores, the students were then divided into high and low social desirability groups. Chen (1994) reported that there was a significant effect for social desirability, $t(158) = -2.27, p < .05$, with high social desirability individuals ($M = 3.16, SD = 0.59$) scoring significantly lower argumentativeness scores than low social desirability individuals ($M = 3.38, SD = 0.60$). Thus, those who wanted to appear more socially desirable reported being less argumentative with the intention of looking more favorable.

However, Chen (1994) suggests that there was a problem of validity on one or both scales because the study only used pencil and paper scales, and not actual observations of the participants. Therefore, the results may not have reflected the participants’ real predispositions toward social desirability and/or argumentativeness. Moreover, Chen (1994) points out that the Argumentativeness Scale (Infante & Rancer, 1982) was only administered to American students; so, the results may not be generalizable to other cultures.

Furthermore, in another study on social desirability, Nicotera (1996) detected an additional limitation to Chen’s (1994) study. Nicotera (1996) reports that Chen (1994) utilized a disproportionate number of females in his sample, with two-thirds of the sample being female. As previous research indicates (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985), males tend to be more argumentative than females; therefore, argumentative behavior may be more socially desirable for males than females (Nicotera, 1996). Due to the disproportionate number of females to males in Chen’s (1994) study, Nicotera (1996) reports: “Chen’s study cannot be considered conclusive” (p. 27).
However, Nicotera (1996) examined if social desirability was an issue for the Argumentativeness Scale (Infante & Rancer, 1982). First of all, much like Dowling and Flint (1990) as discussed earlier, Nicotera (1996) asserts the word *argue* may have a negative connotation for many people. Specifically, the word *argue* may mean fight or quarrel to some respondents, and these terms are viewed more negatively. In addition, Nicotera (1996) argues: “…since the act of argument is sanctioned more for men than women, women answering the scale may be reluctant to rate themselves as argumentative” (p.25). Consequently, this reluctance by women may or may not mirror their actual argumentativeness level, and there may be a social desirability bias (Nicotera, 1996).

Nicotera (1996) tested social desirability of the Argumentativeness Scale (Infante & Rancer, 1982), and examined if participants were responding to the Argumentativeness Scale (Infante & Rancer, 1982) items on the basis of their own behavior, or were they responding based on the social desirability of the items on the Argumentativeness Scale (Infante & Rancer, 1982), or were they responding to the social desirability ratings based on how they perceived themselves. Two samples were drawn. The first sample was tested strictly for social desirability bias. The second sample was used to test for the impact of social desirability on self-report scores and to study the individual items of the Argumentativeness Scale (Infante & Rancer, 1982). The first sample completed Infante and Rancer’s (1982) Argumentativeness Scale and were asked to rate each item on a five-point Likert-type scale indicating their judgment of the item statement’s acceptability by society. From the results of the first sample, Nicotera (1996) created a summated scale, “…with “Avoid” subscale items reverse-scaled so that higher scores would indicate higher judgment of social desirability of argumentativeness” (p. 28). Then, the second sample completed two Argumentativeness Scales (Infante & Rancer, 1982), one reflecting the
participants own perspective of their argumentativeness, and one using the rating of the newly
created social desirability scale mentioned above

The results indicate that males \((M = 62.741, SD = 9.296)\) perceived argumentativeness to be
more socially desirable than females \((M = 60.512, SD = 8.249)\). In other words, women were
slightly more concerned with how argumentativeness may not be a socially desirable trait as
compared to men. Also, Nicotera (1996) found that self-report scores of argumentativeness and
self-report judgment of social desirability of the scale items were related \(r(283) = .2613, p < .0001\). According to Nicotera (1996): “Social desirability explains only 6.8% of the variance of
argumentativeness score \(r^2 = .0683\)” (p. 30). Nicotera (1996) concluded that the relationship
between the two was not strong, and that it was “hardly worth reporting” (p. 31). Also, the scales
were not found to be redundant. She stated that the Argumentativeness Scale can be used with
confidence, but the term argumentativeness a broader basis for

**Dimensionality.** Another concern with the Argumentativeness Scale is the notion of
it being bi-dimensional. Infante and Rancer (1982) reported that the Argumentativeness Scale is
bi-dimensional, however, that has been challenged. For instance, Blickle (1995) factor analyzed
the original 20 items on the Argumentativeness Scale, and reasoned that there may be three
dimensions to the Argumentativeness Scale. Items 16 (“I find myself unable to think of effective
points during an argument.”) and 18 (“I have the ability to do well in an argument.”) of the
Argumentativeness Scale loaded on the third dimension. The third dimension deals with one’s
self-report argumentative skill. Blickle (1995) urged that additional items be created for this new
dimension, and this would give the concept of argumentativeness a broader basis for
measurement.
Moreover, a meta-analysis on argumentativeness literature conducted by Hamilton and Mineo (2002) revealed that the Argumentativeness Scale may actually have multiple dimensions. Based on a meta-analysis and reanalysis findings reported by Blickle (1995), Blickle, Habasch, and Senft (1998), and Suzuki and Rancer (1994), Hamilton and Mineo (2002) report that multiple dimensions or subscales might exist. The following additional dimensions were reported: argumentative skill, curiosity, competitiveness, anxiety, and avoidance or withdrawal (Hamilton & Mineo, 2002). These additional dimensions indicate that there may be more than just the dimensions of ARGap (one’s tendency to approach arguments) and ARGav (one’s tendency to avoid arguments) to measure argumentativeness.

Furthermore, Levine, Kotowski, Beatty, and Van Kelegom (2012) argue that argumentativeness is scored both as two dimensions, and also as if it were unidimensional. ARGav scores are subtracted from ARGap scores giving an overall total ARGgt score. Levine et al. (2012) state: “Of course, adding or subtracting scores to obtain a total score presumes unidimensionality” (p. 98). Levine et al. (2012) argue that the notion that the Argumentativeness Scale is two-dimensional is inconsistent with the common practice of calculating a single score by subtracting ARGav from ARGap.

However, Infante, Rancer, and Wigley (2011) contend that the dimensionality of the Argumentative Scale is “…rather unequivocal” (p. 146). Infante et al. (2011) explain that in order to understand the factor structure of the Argumentativeness Model, one must understand the theoretical underpinnings of the Argumentativeness Model—the Theory of Achievement Motivation (Atkinson 1957, 1966). Atkinson’s (1957, 1966) theory asserts that there is an excitation-inhibition conflict when individuals are in situations in which they are being evaluated. Atkinson’s theory utilizes an approach-avoidance model that describes motivation to
engage in a behavior as an individual’s tendency to approach rewards and avoid punishments. When arguing controversial issues, one anticipates being evaluated, and the source of evaluation may be the opponent or observers of the argument (Infante & Rancer, 1982). Therefore, when evaluation of an argument is anticipated, the motivation to approach the argument or avoid the argument is activated. This model of argumentativeness helps predict behaviors in argumentative situations (Infante & Rancer, 1982).

With an understanding of the theoretical basis for the Argumentativeness Model, one can then examine how the Argumentativeness Scale resulted in the two dimensions—approach and avoidance. Originally, Infante and Rancer (1982) created 45 items to measure argumentativeness. Both approach (items indicating one’s tendency to approach an argument) and avoidance (items indicating one’s tendency to avoid getting into arguments) items were generated, and “an important part of the item generation was to determine if avoidance items would load unintendedly on the approach factor if positive wording was included in the item” (Infante et al., 2011, p. 147). The carefully worded items loaded as Infante and Rancer (1982) hypothesized, with positively worded items loading on the approach dimension, and negatively worded items loading on the avoidance dimension of the scale. The items clearly fell on the two dimensions, approach and avoidance, and this factor structure follows Atkinson’s exhibition/inhibition model. Therefore, the two factors of the Argumentativeness Scale were a product of a well-established theoretical underpinning (Atkinson’s Theory of Motivation), and were a result of factor loadings from numerous items that clearly generated the two factors for a bi-dimensional scale.

Validity. Another major criticism of the Argumentativeness Scale deals with the predictive and convergent validity of the Argumentativeness Scale. In their study, Kotowski, Levine,
Baker, and Bolt (2009) found that scores on the Argumentativeness Scale did not correlate strongly with observations of argumentative behavior. The Argumentativeness Scale measures self-report argumentativeness, but not actual argumentative behavior that can be observed. Further, Levine et al. (2012) claim that Infante et al. (2011) have a different view on the definition of the word behavior. Levine et al. (2012) state:

For us, behavior refers to overt actions. Behaviors are things people do and that we can see them doing. Communication behaviors involve people communicating with real other people in ways that are directly observable. Put differently, measuring communication behaviors involves someone actually refuting another’s assertions and verbal aggressiveness involves someone actually saying something with the intent of harming the message recipient’s self-concept. We exclude things such as memory and projection from our definition of behavior. We see imagined interactions and recalled communication as more cognition than behavior. So, we do not consider making a rating of a hypothetical message to a hypothetical other person in an imagined situation argumentative or aggressive behavior. (p. 98)

In order to test whether or not argumentativeness measures are self-report, but not actual behavior, Levine et al. (2012) conducted a meta-analysis on argumentativeness literature. In order to be considered, the literature had to examine the relationship between argumentativeness and argumentative behaviors. One hundred and nineteen studies using the Argumentativeness Scale were found. Only a couple of the studies actually examined the relationship between argumentativeness and any actual argumentative behavior of any sort. Of the 119 studies using the Argumentativeness Scale, two studies examined behavior-based evidence of convergent validity. Only twice were the Argumentativeness Scale and behavior related. The
Argumentativeness Scale did correlate highly with self-reported communication rather than with the actual behavior (Levine et al., 2012).

However, Infante et al. (2011) point out that the Argumentativeness Scale is designed to measure argumentative behaviors over time, not an individual behavior observed only once. Further, Infante et al. (2011) report: “The basic idea is a personality trait, at most, usually correlates around .30 with a single trait-relevant behavior, but significantly higher with an extensive set of relevant behaviors (Mischel, 1968), especially when observed over time…” (p. 149). As previously mentioned, Kotowski et al. (2009) found that scores on the Argumentativeness Scale did not correlate strongly with observations of argumentative behavior. Infante et al. (2011) contend that the Argumentativeness Scale is not designed to measure a single argumentative behavior; instead, it is designed to measure argumentative behaviors over time. Therefore, the Argumentativeness Scale does measure what it intends to measure, argumentativeness over time, thereby diminishing the criticism offered by Kotowski et al. (2009).

In sum, the ASDM and the Argumentativeness Scale have all undergone much criticism. First, Hamilton and Mineo argue that there is no support that argumentativeness has a large negative effect on verbal aggressiveness which is a contention of the Argumentativeness Skill Deficiency Model. However, there are, in fact, studies that demonstrate that better argumentative skills result in a decrease in the use of verbal aggressiveness (Colbert, 1993; Meyers, Roberto, Boster, & Roberto, 1994; Sanders, Wiseman, & Gass, 1994) thereby supporting the ASDM. Next, as for the Argumentativeness Scale, Dowling and Flint (1990) criticized the choice of wording on the scale, but Rancer and Avtgis (2006) state any problems can easily be avoided by having the instructions read and emphasized to any group or individual who may be completing
the scale. Also, Chen (1994) and Nicotera (1996) looked at social desirability in relation to the Argumentativeness Scale, and found several explanations as to why social desirability is not a substantial issue with the Argumentativeness Scale. As for the criticism of the Argumentativeness Scale having more than two dimensions (Blickle, 1995; Hamilton & Mineo, 2002; Levine, Kotowski, Beatty, & Van Kelegom, 2012), Infante, Rancer, and Wigley (2011) point out that Argumentativeness is based upon Atkinson’s Theory of Motivation which asserts that there is an excitation-inhibition conflict when individuals are in situations in which they are being evaluated. Atkinson’s theory utilizes an approach-avoidance model that describes motivation to engage in a behavior as an individual’s tendency to approach rewards and avoid punishments. Consequently, the two dimensions of the Argumentativeness Scale—approach and avoidance—are a result of the excitation-inhibition component to Atkinson’s well-established Theory of Motivation. In addition, the two factors emerged after a factor analysis was conducted on 45 items generated by Infante and Rancer (1982). Finally, the predictive validity of the Argumentativeness Scale was under scrutiny by Kotowski et al. (2009) who argued that the Argumentativeness Scale does not predict argumentative behaviors. Yet, Infante et al. (2011) assert that the Argumentativeness Scale was not designed to measure a single behavior; instead it is intended to measure argumentative behaviors over time. Therefore, the scale does measure what it was designed to measure. Given the evidence supporting argumentativeness and the Argumentativeness Scale, they will be utilized in the present study. According to Hamilton and Hample (2011) “Few theories of communication have generated as much enthusiasm for research as argumentative theory. Its key concepts of argumentativeness and verbal aggressiveness and the scales that measure them are among the most frequently used in the discipline” (p. 250). Next, criticisms of the Verbal Aggressiveness Scale will be discussed.
Critiques of the Verbal Aggressiveness Scale

**Dimensionality.** In their initial study, Infante and Wigley (1986) factor analyzed 20 items used to measure verbal aggressiveness. Two dimensions of the factors emerged: one consisting of items positively worded toward aggressiveness, and the other factor consisting of negatively worded aggressiveness items. However, Infante and Wigley (1986) attributed the second factor to a positive wording bias, therefore, they reasoned that the Verbal Aggressiveness Scale (VAS) should be unidimensional, rather than multidimensional. In other words, they asserted that the two dimensions came into view because of the positive and negative wording of the items, not because there were two separate dimensions of verbal aggressiveness.

The issue of unidimensionality has been criticized by many researchers (Beatty, Rudd, & Valencic, 1999; Kotowski, Levine, Baker, & Bolt, 2009; Levine, Beatty, Limon, Hamilton, Buck, & Chory-Assad, 2004; Levine, Kotowski, Beatty, & Van Kelegom, 2012). Research by Beatty, Dobos, Valencic, and Rudd (1998) examined the relationship between direct and indirect forms of verbal aggressiveness. The researchers found preliminary evidence that indicated a multidimensional treatment of the VAS might produce a more precise measure of trait verbal aggressiveness.

As a result of the study mentioned above, Beatty, Rudd and Valencic (1999) reexamined the VAS, arguing that it should be two factors, rather than one. They asserted that “while it seems unlikely that communicators predisposed toward verbal hostility would agree with the benevolent items, disagreement does not imply aggressiveness” (p. 12). Thus, the wording of the second factor was a true and legitimate factor, and it is best to consider benevolent and aggressive tendencies as separate dimensions, rather than having them as opposite ends of a single continuum (Beatty et al., 1999).
In order to test their two factor premise, Beatty, Rudd and Valencic (1999) had students complete the VAS. The data was then factor analyzed. Two dimensions emerged, with one dimension consisting of aggressively worded items, and a second factor consisting of benevolently worded items. From these findings, Beatty et al. (1999) urge that researchers using the VAS should only use the negatively worded aggressive items to assess verbal aggressiveness. Hence, they argue that only the negatively worded items measure verbal aggressiveness, whereas the positively worded items appear to assess interpersonal sensitivity—a completely different construct.

Furthermore, Levine, Beatty, Limon, Hamilton, Buck, Chory-Assad (2004) used a confirmatory factor analysis on the VAS, and found that a two-factor model was a better fit to measure verbal aggressiveness than the unidimensional model. The researchers had subjects complete the VAS. Once again, results indicate that the VAS is best as a bidimensional scale. Levine et al. (2004) state:

Thus, current findings provide the strongest evidence to date for bidimensionality. Simply put, only 10 items appear to measure verbal aggressiveness. Based on these results, it is recommended that researchers refrain from summing or averaging all 20 VAS items to obtain a single verbal aggressiveness score. Little is gained in either reliability or predictive utility, and there is a risk of invalid measurement. Instead, verbal aggressiveness scores can be calculated from the 10 aggressively worded, nonreflected items only. (p. 260)

Additionally, the researchers argue that the second dimension of the VAS measures a pro-social, supportive communication style. Hence, they argue that the second factor should not be scored. The authors argue that those items were not intended to measure benevolent, pro-social
communication, and a stronger measure of such a construct is possible.

Kotowski et al. (2009) also concluded that the VAS measures two constructs. The researchers argue that the conceptual definition of verbal aggressiveness explicitly specifies that a behavioral manifestation is key to the defining feature of verbal aggressiveness. Recall that verbal aggressiveness is defined as “a personality trait that predisposes people to attack the self-concepts of others” (Infante & Wigley, 1986, p. 61). Yet, Kotowski et al. (2009) assert that observational research linking behavior and self-report scales is missing. This absence is important because verbal aggressiveness is conceptualized as a behavior predisposition. In an experiment having subjects debate current issues, Kotowski et al. (2009) coded the verbally aggressive behavior of the subjects. In addition, the subjects completed the VAS. There was a lack of correlation between the observed behavior and the scores on the VAS. They argue that this indicates a problem with the construct validity. In the study, the scores on the VAS did not correlate substantially with observed verbal aggressiveness. So, the VAS appears to measure want-to-be verbal aggressiveness rather than the actual inclination to partake in authentic verbally aggressive behaviors. The researchers argue that the VAS measures cognitive and affective orientations rather than behaviors (Kotowski et al., 2009).

Infante, Rancer, and Wigley (2011) refute much of the criticisms articulated above. First of all, they point out that the VAS has demonstrated construct validity from a large number of studies (Infante, Chandler, & Rudd, 1989; Infante, Chandler-Sabourin, Rudd, & Shannon, 1990; Meyer, Roberto, Boster, & Roberto, 2004; Rancer, Whitecap, Kosberg, & Avtgis, 1997; Sabourin, Infante, & Rudd, 1993).

Next, Infante et al. (2011) argue the reasoning behind why the VAS is unidimensional. Originally, Infante and Wigley (1986) asserted that the second factor that emerged was a
methodological artifact. Researchers such as Beatty et al. (1999), Kotowski et al. (2009), and Levine et al. (2012) refer to the second factor as verbal benevolence. However, Infante et al. (2011) state:

Separating the scale into two factors, verbal aggressiveness and verbal benevolence, destroys that attempt to account for social desirability. Verbal benevolence is an interesting idea, and people who admit more to those items in the scale may, in fact, be more verbally benevolent. However, they are also admitting to verbally aggressive behavior, and that is precisely the a priori intent of the items. Therefore, we conclude that until there is good empirical reason for doing so, the 20 VA Scale items should be retained as a unidimensional measure. (p. 148)

**Validity.** Blickle, Habasch, and Senft (1998) conducted a study to examine the stability and validity of the 20-item VAS. The authors (1998) had participants complete the VAS to rate their own verbal aggressiveness, and they also had two observers (peers), either friends, acquaintances, relatives, or colleagues, complete the VAS in order to determine whether the self-report ratings and the other-report ratings would achieve consensus. Eight weeks later, the participants as well as the two observers completed the VAS again in order to determine the participant’s VAS. The authors designed a structural equation model of verbal aggressiveness for discriminant validation. One latent factor was the participant’s self-reported verbal aggressiveness. The assumption was that the latent construct had two strict parallel indicators. A second latent factor was the observer’s ratings of verbal aggressiveness. Again, the assumption was that the second latent construct had two strict parallel indicators. The structural equation model had an absolute fit ($X_{25}^2 = 29.5, p = .24$). The latent factors of self and observer ratings of the VAS obtained a correlation of $.81 (p < .05)$. Blickle et al. (1998) state: “…by and large the
discriminant analysis can be considered to be successful” (p. 296). The Cronbach’s alpha for the self-rating of the VAS was .77, and the Cronbach’s alpha for observer rating of the VAS was .83. The test/retest correlation scores on the VAS over the two-month period was .72 ($p < .05$).

Further, it was found that the observer-observer consensus of the VAS was .33 ($p < .05$). The authors averaged the two self-reports of the participants’ verbal aggressiveness, and the two observer ratings of the participants’ verbal aggressiveness, and a correlation of .52 ($p < .05$) was obtained. Blickle et al. (1998) also claim: “Thus, if the targets and observers behaved according to the instructions and did not talk to anybody while working on the questionnaire, the amount of self-peer agreement and scores on the peer-peer consensus can be considered good…In sum, there are good reasons to assume substantial criterion-related validity of the Verbal Aggressiveness scale [sic]” (p. 296).

Levine et al. (2012) contend that there is a problem with the construct validity of the VAS. They argue that the VAS measures self-report verbal aggressiveness, but not verbally aggressive behavior. In the same study using meta-analysis examining argumentative behavior mentioned earlier, Levine et al. (2012) also conducted a meta-analysis on the verbally aggressive literature to date. Studies included in the meta-analysis had to examine the VAS and verbally aggressive behaviors or studies that used the VAS and other survey verbal aggressiveness measures. One hundred and twenty-five studies employing the VAS were identified. The researchers used a coding system to determine if verbally aggressive behavior was measured in the 125 studies. Only 2 of the 125 studies looked at the VAS and verbally aggressive behavior. They found that the trait and behavior association for the VAS was approximately zero. “There is no evidence in the literature that scores on the VAS correlate with actual verbally aggressive behavior” (p. 107). Thus, their study implies that VAS does not measure verbally aggressive behavioral
predispositions; instead, it measures self-reported verbal aggressiveness.

Once again, similar to the Argumentativeness Scale, Infante et al. (2011) assert that the Verbal Aggressiveness Scale is designed to measure verbally aggressive communication behaviors over time, not an individual behavior observed only once. Further, Infante et al. (2011) point out that when measuring behaviors, a measure like the Verbal Aggressiveness Scale will more accurately correlate with verbal aggressiveness over time. This is based on the presumption from Mischel’s studies on personality traits, reporting a personality trait typically correlates around .30 with a single trait-relevant behavior, but significantly higher with an extensive set of relevant behaviors when observed over time. Hence, when Kotowski, Levine, Baker, and Bolt (2011) argued that the Verbal Aggressiveness Scale did not examine the relationship between verbal aggressiveness and any actual verbally aggressive behavior, Infante et al. (2011) contend that the Verbal Aggressiveness Scale is not designed to measure a single verbally aggressive behavior, instead it is designed to measure verbally aggressive behaviors over time. Therefore, the Verbal Aggressiveness Scale does measure what it intends to measure, verbally aggressive tendencies over time, thereby weakening the criticism offered by Kotowski et al. (2011).

Overall, the Verbal Aggressiveness Scale has received criticism (Beatty, Rudd, & Valencic, 1999; Kotowski, Levine, Baker, & Bolt, 2009; Levine, Beatty, Limon, Hamilton, Buck, & Chory-Assad, 2004; Levine, Kotowski, Beatty, & Van Kelegom, 2012), specifically in regard to the dimensionality of the scale. Although the VAS has been criticized for being bi/multidimensional, Infante, Rancer, and Wigley (2011) insist that two dimensions were a result of positive and negative wording of the items, not because there were two separate dimensions of verbal aggressiveness, therefore, they reasoned that the Verbal Aggressiveness Scale should be
unidimensional, rather than multidimensional. Even with the question of dimensionality of the VAS, the VAS has demonstrated a long line of validity and reliability in studies (Cole & McCroskey, 2003; Gorden, Infante, & Izzo, 1988; Infante & Gorden, 1991; Infante, Myers & Buerkel, 1994; Martin, Anderson, Burant, & Weber, 1997; Myers & Knox, 2000; Rill, Baiocchi, Hopper, Denker, & Olson, 2009; Rocca & Meyers, 1999; Venable & Martin, 1997). Therefore, the VAS can be considered a reliable and valid measure of verbal aggressiveness (Blickle, Habasch, & Senft, 1998).

The fourth objective of the research will be to explore the issue of validity of the Verbal Aggressiveness Scale. It is the goal of the researcher to achieve construct validity. I will use the shortened version of the Verbal Aggressiveness Scale developed by Infante and Wigley (1986). The shortened Verbal Aggressiveness Scale was created by Infante & Gorden (1989) and contains 10 Likert-type items (Rancer & Avtgis, 2006, pgs. 264-265). Past research has shown high reliability for this scale in a multitude of studies, and the Cronbach’s alpha is reported for the following studies: .81 (Anderson & Martin), .91 (Infante, Anderson, Herington, & Kim, 1993), .85 (Myers & Knox, 2000), .78 (Myers & Rocca, 2000). However, due to the criticisms mentioned above by Levine et al. (2012) that the Verbal Aggressiveness Scale does not measure actual verbally aggressive behaviors, I will also use the Verbal Aggressiveness Behavior Inventory as a means to measure actual verbally aggressive behaviors. The Verbal Aggressiveness Behavior Inventory is a questionnaire that Infante, Riddle, Horvath, and Tumlin (1992) used in their study on the uses and reasons for using verbal aggressiveness. Recall that Infante (1987) reported many forms of verbally aggressive messages such as: character attacks, physical appearance attacks, insults, swearing, threats, and ridicule to name a few. The Verbal Aggressiveness Behavior Inventory asks participants to recall the frequency with which they use...
verbally aggressive messages with their siblings.

The data obtained from the Verbal Aggressiveness Behavior Inventory will be correlated to the score on the Verbal Aggressiveness Scale in order to address the validity issue. A finding that scores on the measure of verbal aggressiveness predicts the frequency of real-life verbally-aggressive behaviors recalled by participants would contribute to evidence for the construct validity of the Verbal Aggressiveness Scale. Although the Verbal Aggressiveness Behavior Inventory is based on recalled behaviors, such data can contribute to construct validity. In addition, a possible correlation between verbal aggressiveness scores and the frequency of recalled behaviors would provide convergent validity. This is one way to establish construct validity of the Verbal Aggressiveness Scale. With this line of reasoning, the following research questions are posed:

RQ9: Will the participant’s verbal aggressiveness be positively related to the participant’s use of each of the ten verbally aggressive behaviors?

RQ10: Will the perceived verbal aggressiveness of the sibling be positively related to the perceived siblings’ use of each of the ten verbally aggressive behaviors?

**Perception in Interpersonal Communication**

It is also the aim of the researcher to gain insight into how argumentativeness and verbal aggressiveness affect sibling relationships. One way to achieve this is by getting the perspective of one sibling, in order to understand how his/her own communication behaviors, compounded with the perceptions of his/her siblings’ communication behaviors, affect communication satisfaction and relationship satisfaction. The following section offers insight into how the use of perception of one individual has been a viable method of measuring behaviors and satisfaction in various relationship dynamics.
To begin with, according to Devito (2003):

Your perceptions result from what exists in the world and from your own experiences, desires, needs and wants, loves and hatreds. Among the reasons why perception is so important in communication is that it influences your communication choices. The messages you send and listen to will depend on how you see the world, on how you size up specific situations, on what you think of the people with whom you interact. (p. 56)

Several studies have focused on how the participants’ perceived their communication partners (Beatty, Zelley, Dobos, & Rudd, 1994; Infante & Gorden, 1989; Martin, Anderson, & Mottet, 1997; Myers, Edwards, Wahl, & Martin, 2007; Myers & Goodboy, 2006; Myers & Know, 2000; Myers & Rocca, 2000; Rancer, Kosberg, & Bauskus, 1992). Studies such as these examine argumentativeness and verbal aggressiveness from the perspective of the participant in order to develop an understanding of how the participant makes sense of his/her communication and relationships with others.

One example of perception in relation to argumentativeness and verbal aggressiveness was examined in a study by Myers, Edwards, Wahl, and Martin (2007). In this study, Myers et al. (2007) investigated college student involvement in relation to how the students perceived their instructors’ aggressive communication behaviors such as argumentativeness and verbal aggressiveness. Participants completed modified versions of the Argumentativeness and Verbal Aggressiveness Scales, the Student Communication Motives Scale, the Student Propensity to Ask Questions Scale, the Overt Information-Seeking Strategy subscale, a modified version of the Interaction Involvement Scale, and the Out of Class Communication Scale. Myers et al. (2007) report that the Argumentativeness Scale had previous reliability coefficients ranging from .78 to .86 (Myers, 2002; Myers & Rocca, 2001; Schrodt, 2003), the Verbal Aggressiveness Scale had
previous reliability coefficients ranging from .78 to .85 (Myers, 2002; Myers & Rocca, 2001; Schrodt, 2003), the Student Communication Motives Scale had previous reliability coefficients ranging from .80 to .91 (Dunleavy, 2006; Mottet, Martin, & Myers, 2004; Myers, 2006), the Student Propensity to Ask Questions Scale had a previous reliability of .91 (Cunconan, 2002), the Overt Information-Seeking Strategy Subscale had prior coefficients of .73 and .75 (Myers, 1998b; Myers & Knox, 2001), and the Interaction Involvement Scale had a previous reliability coefficient of .80 (Myers, Martin, & Knapp, 2005).

Myers et al. (2007) found that students’ perceptions of instructors’ verbal aggressiveness were negatively related to their motives to communicate, their willingness to ask questions and seek information, their interaction involvement, and their out-of-class communication. In addition, students’ perceptions of their instructors’ argumentativeness were not positively associated with students’ motives to: communicate, ask questions, seek information, interact, or communicate out of class. This study demonstrates that perception is an important component of communication and communication behaviors. How a student perceives his or her instructor’s argumentativeness and verbal aggressiveness directly affects the communication between the instructor and student.

As previously mentioned, in their study, Infante and Gorden (1989) had superiors report their perceptions of subordinates’ argumentativeness (Cronbach’s alpha, .92), verbal aggressiveness (Cronbach’s alpha, .90), and affirming communicator style. Results indicated that superiors were satisfied with subordinates when the superior perceived the subordinate as being: low in verbal aggressiveness, high in argumentativeness, friendly, relaxed, and attentive. In this study, the perceived communication behavior of an individual plays an important role in how a superior evaluates his or her subordinate.
In particular interest to the present study is how perception is significant in the sibling relationship. Myers and Goodboy (2006) studied how one sibling perceived the verbal aggressiveness used by a sibling across the lifespan. As noted earlier, Myers and Goodboy (2006) had participants complete the Measure of Sibling Verbal Aggressiveness, the Liking Scale (Cronbach’s alpha, .93), the Dyadic Trust Scale (Cronbach’s alpha, .87), and the Measure of Commitment Scale (Cronbach’s alpha, .72). The results revealed that perceived use of verbally aggressive messages in sibling relationships decreases across the lifespan, and verbally aggressive messages are used more frequently in young adulthood than in middle or late adulthood. In addition, it was found that the use of some verbally aggressive messages were related indirectly to sibling liking, trust, and commitment. In this study, how the participant perceived the communication with his or her sibling directly influenced important qualities such as liking, trust, and commitment. This study shows that one sibling forms an impression of another through the perceived communication behavior of the sibling. The participants’ perceptions of the communication experience are what shape his or her beliefs about the communication and relationship.

These studies from different communication contexts all utilized a research design that examined argumentativeness and verbal aggressiveness from the perception of the participant. This design has been utilized in numerous studies (Beatty, Zelley, Dobos, & Rudd, 1994; Infante & Gorden, 1989; Martin, Anderson, & Mottet, 1997; Myers, Edwards, Wahl, & Martin, 2007; Myers & Goodboy, 2006; Myers & Know, 2000; Myers & Rocca, 2000; Rancer, Kosberg, & Bauskus, 1992), and similar conclusions were drawn with argumentativeness being constructive, and verbal aggressiveness being destructive in the different contexts. The perception of a participant is considered a valid research design and leads to valid conclusions. Therefore, the
present study follows this line of reasoning, and too is interested in the perception of the participant in regard to his siblings’ use of argumentativeness and verbal aggressiveness in interpersonal communication interactions.

A summary of the hypotheses and research questions being investigated appears on the next few pages.
Hypotheses and Research Questions Relating to Objective 1

H1: Perceived argumentativeness of a sibling will be positively related to communication satisfaction in the sibling relationship.

H2: Participant’s self-reported argumentativeness will be positively related to communication satisfaction in a sibling relationship.

RQ1a: Does the relationship between perceived argumentativeness of a sibling and communication satisfaction depend on whether the participant is high or low in argumentativeness?

RQ1b: Does the relationship between a participant’s self-reported argumentativeness and communication satisfaction depend on whether the sibling is high or low in argumentativeness?

H3: Perceived argumentativeness of a sibling will be positively related to relationship satisfaction in the sibling relationship.

H4: Participant’s self-reported argumentativeness will be positively related to relationship satisfaction in a sibling relationship.

RQ2a: Does the relationship between perceived argumentativeness of a sibling and relationship satisfaction depend on whether the participant is high or low in argumentativeness?

RQ2b: Does the relationship between a participant’s self-reported argumentativeness and relationship satisfaction depend on whether the sibling is high or low in argumentativeness?

H5: Perceived verbal aggressiveness of a sibling will be negatively related to
communication satisfaction in the sibling relationship.

H6: Participant’s self-reported verbal aggressiveness will be negatively related to communication satisfaction in the sibling relationship.

RQ3a: Does the relationship between perceived verbal aggressiveness of a sibling and communication satisfaction depend on whether the participant is high or low in verbal aggressiveness?

RQ3b: Does the relationship between a participant’s self-reported verbal aggressiveness and communication satisfaction depend on whether the sibling is high or low in verbal aggressiveness?

H7: Perceived verbal aggressiveness of a sibling will be negatively related to relationship satisfaction in the sibling relationship.

H8: Participant’s self-reported verbal aggressiveness will be negatively related to relationship satisfaction in the sibling relationship.

RQ4a: Does the relationship between perceived verbal aggressiveness of a sibling and relationship satisfaction depend on whether the participant is high or low in verbal aggressiveness?

RQ4b: Does the relationship between a participant’s self-reported verbal aggressiveness and relationship satisfaction depend on whether the sibling is high or low in verbal aggressiveness?

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**Hypotheses and Research Questions Relating to Objective 2**

H9: Participants’ self-reports of argumentativeness will be negatively related to their self-reports of verbal aggressiveness.

H10: Perceived argumentativeness of a sibling will be negatively related to perceived verbal
aggressiveness of a sibling.

H11: In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to self-reports of physical aggressiveness when participants are low in argumentativeness, but not when they are high in argumentativeness.

RQ5: For participants low in argumentativeness, will self-reported verbal aggressiveness be related to self-reported physical aggression when (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female? Will these effects be observed when the participants are high in argumentativeness?

H12: In male P-male S dyads, perceived verbal aggressiveness of a sibling will be positively related to perceived physical aggressiveness of a sibling when siblings are perceived to be low in argumentativeness, but not when they are perceived to be high in argumentativeness.

RQ6: For siblings low in argumentativeness, will perceived verbal aggressiveness of a sibling be related to perceived physical aggressiveness of the sibling when: (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female? Will these effects be observed when the siblings are high in argumentativeness?

H13: In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to perceived physical aggressiveness of a sibling.

RQ7: Will the above effect be observed when (a) both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female?

H14: In male P-male S dyads, perceived verbal aggressiveness of a sibling will be
positively related to participants’ self-reports of physical aggressiveness.

RQ8: Will the above effect be observed when (a) both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female?

Hypotheses Relating to Objective 3

H15: Male self-reported argumentativeness levels will be higher than female self-reported argumentativeness levels.

H16: Male self-reported verbal aggressiveness levels will be higher than female self-reported verbal aggressiveness levels.

H17: Male self-reported physical aggressiveness will be higher than female self-reported physical aggressiveness.

Research Questions Relating to Objective Four

RQ9: Will the participant’s verbal aggressiveness be positively related to the participant’s use of each of the ten verbally aggressive behaviors?

RQ10: Will the perceived verbal aggressiveness of the sibling be positively related to the perceived siblings’ use of each of the ten verbally aggressive behaviors?

The next chapter explains the methodology that will be employed to investigate the objectives of the dissertation.
Chapter III
Methodology

The previous chapter provided a literature review and detailed the hypotheses and research questions that will be tested in the study. The current chapter outlines the methodology that was employed to investigate the four objectives of the dissertation. The objectives are: (1) to investigate the effects that perceived argumentativeness and perceived verbal aggressiveness have on communication satisfaction and relationship satisfaction in sibling relationships; (2) to determine whether argumentative skill is related to the use of verbal aggressiveness by partners, and whether this verbal aggressiveness is related to physical aggression; (3) to assess whether there are gender differences in argumentativeness, verbal aggressiveness and physical aggression; (4) to explore the validity of the Verbal Aggressiveness Scale.

Method

Participants and Procedures

Participants were students enrolled in Kent State University’s undergraduate Communications courses. All people who were 18 or older, and had at least one sibling who was 16 years old or older, could participate in the study. The sample included 420 participants. One hundred and eighty participants were male, and 236 were female (4 of the respondents did not indicate their gender). The participants ranged in age from 18 to 54, and the mean age of the participants was 20.22 ($SD = 4.28$). The majority of the participants were Caucasian ($n = 325, 77.4\%$), with the other ethnicities being African ($n = 2, .5\%$), African American ($n = 25, 6\%$), Asian ($n = 33, 7.9\%$), Hispanic ($n = 7, 1.7\%$), Middle Eastern ($n = 11, 2.6\%$), Native American ($n = 2, .5\%$), Pacific Islander ($n = 1, .2\%$), and Other ($n = 11, 2.6\%$).

Participants of the study were asked to provide basic demographic information about a
sibling who they would think about when completing the survey described below. Two hundred twenty-nine of the reported siblings were male and 187 were female (4 of the respondents did not indicate their sibling’s gender). The siblings ranged in age from 16 to 53, and the mean age of the siblings was 21.70 ($SD = 5.90$). For the most part, the siblings’ ethnicity reflected the participants’ ethnicity with the following breakdown: Caucasian ($n = 324, 77.1\%$), African ($n = 2, .5\%$), African American ($n = 24, 5.7\%$), Asian ($n = 33, 7.9\%$), Hispanic ($n = 8, 1.9\%$), Middle Eastern ($n = 11, 2.6\%$), Native American ($n = 1, .2\%$), Pacific Islander ($n = 2, .5\%$), and Other ($n = 12, 7\%$).

The participants were asked to recall how many times they communicated (face-to-face, texting, Twitter, Facebook, etc.) with their sibling over the past six months. The mean number of communication events reported over the six month period was 247.20 ($SD = 189.99$), and the communication events ranged from 0 to 500. The sex dyad of the siblings was also explored, and there were 120 male/male dyads, 60 male/female dyads, 126 female/female dyads, and 109 female/male dyads.

Once the Kent State University Institutional Review Board approved the present study, a survey was created using Qualtrics, a web-based research surveying software. Participants provided informed consent by accepting the terms of the study, and had to click an “I agree” button indicating an understanding of consent in order to gain entry to the survey.

During the recruitment procedure, participants were told that the study involves sibling communication, and that, in order to participate, they must have at least one sibling who is 16 years old or older. If that condition was met, then that participant was permitted to proceed with the study.

Participants were asked to think of their communication and current relationship with their
sibling. Researchers have successfully utilized this method in other research studies (e.g., Martin, Anderson, & Rocca, 2005; Myers, 2001; Myers & Goodboy, 2006; Rocca & Martin, 1998). If a participant had more than one sibling, he or she was asked to consider just one of the siblings during the study.

At the beginning of the survey, the participants were provided a written statement that gave a general purpose of the study. Then, the participants were provided instructions for completing the survey. The following instructions were provided: “INSTRUCTIONS: Some of the items on this survey pertain to your current perception of your sibling. Only a sibling who is 16 years or older will provide the necessary criteria for this study. If you have more than one sibling who is 16 years or older, please choose one sibling to think of as you complete the survey. It is important for you to base your answers to all questions on this one sibling.”

The participants then completed the survey which contained the following items: the written instructions noted above, short form versions of the Argumentativeness Scale (Infante & Rancer, 1993) to report their own argumentativeness and their perception of the sibling’s argumentativeness, short form versions of the Verbal Aggressiveness Scale (Infante & Wigley, 1993) to report their own verbal aggressiveness and their perception of the sibling’s verbal aggressiveness, Harwood’s (2000) short-form version of Hecht’s (1978) Interpersonal Communication Satisfaction Inventory, VanLear’s (1991) Relationship Satisfaction Scale, the Physical Aggression factor of Buss and Perry’s (1992) Aggression Questionnaire, a Sibling Physical Aggression factor of Buss and Perry’s (1992) Aggression Questionnaire, a Verbal Aggressiveness Behavior Inventory, a Sibling Verbal Aggressiveness Behavior Inventory, and a demographic survey (including demographic information about the participant and the participant’s sibling).
**Measures**

**Argumentativeness scale.** In order to reduce participant fatigue, participants reported their own argumentativeness by completing a shortened version of the Argumentativeness Scale developed by Infante and Rancer (1982). The shortened Argumentativeness Scale was created by Infante & Gorden (1989) and contains 10 Likert-type items (Rancer & Avtgis, 2006, pgs. 263-264). Participants gave responses on a scale from 1 (almost never true) to 5 (almost always true). Past research using the shortened version of the Argumentativeness Scale has demonstrated high reliability in numerous studies, and the Cronbach’s alpha is reported for the following studies: .85 (Anderson & Martin, 1999) .73 (Infante, Anderson, Herington, & Kim, 1993), .82 (Infante & Gorden, 1989), .86 (Myers & Knox, 2000), .78 (Myers & Rocca, 2000). For the present study, the Cronbach’s alpha was .75. (See Appendix A).

Participants also reported the perceived argumentativeness of their sibling by filling out an adapted version of the same instrument. For example, item 2 states: “I am energetic and enthusiastic when I argue.” This statement was reworded to read: “My sibling is energetic and enthusiastic when he/she argues.” In addition, item 9 reads: “I have the ability to do well in an argument.” The statement was reworded to read: “My sibling has the ability to do well in an argument.” Other statements from the shortened Argumentativeness Scale were altered to reflect sibling’s argumentativeness. The shortened version of the Sibling Argumentativeness Scale was found to be reliable in this study with the Cronbach’s alpha being .77. (See Appendix B.)

**Verbal aggressiveness scale.** Once again, in order to reduce participant fatigue, participants reported their own verbal aggressiveness by completing the shortened version of the Verbal Aggressiveness Scale developed by Infante and Wigley (1986). The shortened Verbal Aggressiveness Scale was created by Infante & Gorden (1989) and contains 10 Likert-type items.
(Rancer & Avtgis, 2006, pgs. 264-265). This instrument contains 10 Likert-type items. Participants provided responses on a scale from 1 (almost never true) to 5 (almost always true). Past research has shown high reliability for this scale in a multitude of studies, and the Cronbach’s alpha is reported for the following studies: .81 (Anderson & Martin), .91 (Infante, Anderson, Herington, & Kim, 1993), .85 (Myers & Knox, 2000), .78 (Myers & Rocca, 2000). The present study reports the Cronbach’s alpha being .80 for the shortened Verbal Aggressiveness Scale. (See Appendix D).

Participants also reported the perceived verbal aggressiveness of their sibling by filling out an adapted version of the same instrument. For example, item 6 reads: “When people simply will not budge on a matter of importance, I lose my temper and say rather strong things to them.” This statement was reworded to read: “When people simply will not budge on a matter of importance, my sibling loses his or her temper, and says rather strong things to them.” In addition, item 8 reads: “When I attack a person’s ideas, I try not to damage his/her self-concept.” The statement was reworded to read: “When my sibling attacks a person’s ideas, my sibling tries not to damage his/her self-concept.” Other statements from the original Verbal Aggressiveness Scale were altered to reflect sibling’s verbal aggressiveness. The shortened version of the Sibling Verbal Aggressiveness Scale was found to be reliable in the present study, with Cronbach’s alpha being .89. (See Appendix E).

**Physical aggression questionnaire.** Buss and Perry (1992) developed the four-factor Aggression Questionnaire. The Aggression Questionnaire is comprised of: a 9-item Physical Aggression factor, a 5-item Verbal Aggression factor, a 7-item Anger factor, and an 8-item Hostility factor. Participants rate each item on a scale of 1 (almost never true) to 5 (almost always true). In the present study, only the Physical Aggression factor was utilized. Both
elements of hostility and verbal aggression were measured in Infante and Wigley’s (1986) Verbal Aggressiveness Scale. The factor of Anger was not of relevance to the current study.

However, measuring Physical Aggression was necessary in order to test the implications of the ASDM. Participants reported their own physical aggression by completing the Physical Aggression dimension of Buss and Perry’s (1992) Aggression Scale. (See Appendix G). This instrument contains 9 Likert-type items. Participants provided responses on a scale from 1 (almost never true) to 5 (almost always true). Participants also reported the perceived physical aggression of their sibling by filling out an adapted version of the same instrument. (See Appendix H). For example, item 3 states: “If somebody hits me, I hit back” This statement was reworded to read: “If somebody hits my sibling, he/she hits back.” In addition, item 8 reads: “I have threatened people I know.” The statement was reworded to read: “My sibling has threatened people he/she knows.” Other statements from the original Physical Aggression Scale were altered to reflect sibling’s physical aggression. Cronbach’s alpha for the Physical Aggression factor has exhibited high internal consistency in research: .80 (Abd-El-Fattah), .85 (Buss & Perry, 1992), .72 (Scarpa, Haden, & Abercromby, 2010). Both the Physical Aggression factor for the participant and for the sibling demonstrated high internal consistency in the present study with the Cronbach’s alpha being .83 and .89 respectively.

**Communication satisfaction scale.** Participants indicated their level of communication satisfaction with their sibling using a shortened version of Hecht’s (1978a, 1978b, 1978c) Interpersonal Communication Satisfaction Inventory that was modified to indicate communication satisfaction with a sibling (Harwood, 2000). The participants were given the following instructions: “We are interested in how you think about conversations with your sibling. It doesn’t matter whether the conversations are face-to-face, on the phone, through text,
through private Facebook messages, etc. Your answers to the items below should be based on how you typically feel about conversations with your sibling.” The revised inventory consists of 5 Likert-type items, ranging from strongly disagree (1), to strongly agree (5). The adapted communication satisfaction scale item number 1 reads: “I am generally satisfied with the conversations.” Further, item 4 reads: “I would like to have other conversations like those that I generally have with my sibling.” The short-form Interpersonal Communication Satisfaction Inventory has shown high reliability, with Cronbach’s alpha being reported in the following studies: .76, .89 (Harwood, 2000), .77, .90 (Lin, Harwood, & Bonnensen, 2002), .85 (Soliz & Harwood, 2010). The shortened version of the Interpersonal Communication Satisfaction Inventory was found to be reliable in this study, with the Cronbach’s alpha being .85. (See Appendix I).

**Relationship satisfaction scale.** Participants completed VanLear’s (1991) Relationship Satisfaction Scale. The scale consists of ten items that ask participants to rate responses ranging from strongly disagree (1) to strongly agree (5). Participants were instructed to indicate the degree to which they agree or disagree with the statements regarding their relationship with their sibling. Examples of the items are the following: “We have a very satisfying relationship,” “Our relationship is NOT very stable,” and “We are very close to each other.” Past research has shown strong in reliability: .93 (Tevan, Martin, and Neupauer, 1998); .94 (VanLear, 1991). The current study also reports strong reliability with Cronbach’s alpha being .95. (See Appendix J).

**Verbal aggressiveness behavior inventory.** Participants reported the frequency of verbally aggressive behaviors used in their relationships with their siblings by completing the Verbal Aggressiveness Behavior Inventory. The Verbal Aggressiveness Behavior Inventory is a
modified version of a questionnaire that Infante, Riddle, Horvath, and Tumlin (1992) used in their study on the uses and reasons for using verbal aggressiveness. Recall that Infante (1987) reported many forms of verbally aggressive messages such as: character attacks, physical appearance attacks, insults, swearing, threats, and ridicule to name a few. Participants were asked to recall the frequency in which they use verbally aggressive behaviors with their siblings. The Verbal Aggressiveness Behavior Inventory is concerned with the types of messages the participant and his/her sibling use in any interpersonal communication setting: email, face-to-face, texting, twitter, private Facebook messages, telephone conversations, etc.. Participants reported how often they used each verbally aggressive behavior toward their sibling on a scale of (1) Never to (5) Very often. (See Appendix K).

Participants also reported the perceived verbal aggressiveness behavior of their sibling by filling out the same instrument in regard to their siblings’ behaviors. The instructions read: This questionnaire is concerned with the types of messages you and your sibling use in any interpersonal communication setting: email, face-to-face, texting, twitter, private Facebook messages, telephone conversations, etc.. When you communicate with your sibling, how often do you use each behavior below toward your sibling? Participants reported how often they perceived their sibling using each verbally aggressive behavior toward the participant on a scale of (1) Never to (5) Very often. (See Appendix L).

**Demographic measure.** Participants completed a demographic survey with the following instructions: “Please answer the following questions about yourself and your sibling. If you have more than one sibling, choose one sibling to answer the following questions.” The questionnaire asked for the participant’s age, sex, ethnic background, sibling’s age, sibling’s sex, and sibling’s ethnic background. (See Appendix M).
Data Analysis

A combination of Pearson $r$ correlations and $t$-tests were used in the present study. Hypotheses 1 through 14 and research questions 1 through 10 were tested using Pearson $r$ correlations. Hypotheses 15, 16 and 17 were tested using independent samples $t$-tests.
Chapter IV

Results

The preceding chapter offered an overview of the methodology employed in the study. The current chapter will discuss the results of the study. First, descriptive statistics for the dependent and independent variables are presented, followed by the tests of hypotheses and answers to the research questions.

Means

Means for the following independent variables were computed: participants’ argumentativeness, perceived argumentativeness of siblings, participants’ verbal aggressiveness, and perceived verbal aggressiveness of siblings. The means for the following dependent variables were computed: participant physical aggressiveness, perceived sibling physical aggressiveness, communication satisfaction, and relationship satisfaction. Table 1 displays the means, standard deviations, and ranges for these independent and dependent variables. The mean score for participants’ argumentativeness was very close with the mean score of the perceived argumentativeness of the siblings, with the means being 3.19 ($SD = .36$) and 3.14 ($SD = .39$) respectively. Verbal aggressiveness scores differed slightly, with participants ($M = 2.46$, $SD = .65$) indicating that they perceived their siblings as being more verbally aggressive ($M = 2.82$, $SD = .82$). (A paired samples t-test reveals a significant difference between the mean scores of participant and perceived sibling verbal aggressiveness scores, $t(164) = -5.37, p < .01$). As for the dependent variables, the mean scores were: participant physical aggression, 2.23 ($SD = .76$), perceived sibling physical aggression, 2.45 ($SD = .90$), communication satisfaction, 3.88 ($SD = .79$) and relationship satisfaction, 3.90 ($SD = .89$). Appendix N provides a correlation matrix for the correlation coefficients between the independent variables, and Appendix O provides a
correlation matrix for the correlation coefficients between the dependent variables.

Table 1

*Means for Dependent and Independent Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Range/Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant argumentativeness</td>
<td>3.29</td>
<td>.36</td>
<td>(1 to 5)</td>
</tr>
<tr>
<td>Perceived sibling argumentativeness</td>
<td>3.14</td>
<td>.39</td>
<td>(1 to 5)</td>
</tr>
<tr>
<td>Participant verbal aggressiveness</td>
<td>2.46</td>
<td>.65</td>
<td>(1 to 5)</td>
</tr>
<tr>
<td>Perceived sibling verbal aggressiveness</td>
<td>2.82</td>
<td>.82</td>
<td>(1 to 5)</td>
</tr>
<tr>
<td>Dependent variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant physical aggression</td>
<td>2.23</td>
<td>.76</td>
<td>(1 to 9)</td>
</tr>
<tr>
<td>Perceived sibling physical aggression</td>
<td>2.45</td>
<td>.90</td>
<td>(1 to 9)</td>
</tr>
<tr>
<td>Communication satisfaction</td>
<td>3.88</td>
<td>.79</td>
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</tr>
<tr>
<td>Relationship satisfaction</td>
<td>3.90</td>
<td>.89</td>
<td>(1 to 10)</td>
</tr>
</tbody>
</table>

*Note. N = 420. Higher means indicate greater argumentativeness, verbal aggressiveness, physical aggression, communication satisfaction, and relationship satisfaction.*

**Argumentativeness, Verbal Aggressiveness, Communication Satisfaction and Relationship Satisfaction—Objective 1**

*Argumentativeness and communication satisfaction.* H1 predicted that there would be a positive relationship between perceived sibling argumentativeness and communication satisfaction. A zero-order correlation coefficient was obtained. Perceived sibling
argumentativeness was positively related to communication satisfaction, \( r(406) = .15, p < .01 \). H1 was supported (see Table 2).

H2 predicted that there would be a positive relationship between participant’s self-reported argumentativeness and communication satisfaction. A zero-order correlation coefficient was obtained. Participant’s self-reported argumentativeness was not significantly related to communication satisfaction, \( r(401) = .03, p = .56 \) (see Table 2). H2 was not supported.

RQ1a asked if the relationship between perceived argumentativeness of a sibling and communication satisfaction depended on whether the participant was high or low in argumentativeness, and RQ1b asked if the relationship between a participant’s self-reported argumentativeness and communication satisfaction depended on whether the sibling was high or low in argumentativeness. Median splits were used to classify argumentativeness as either being high or low. When investigating the descriptive statistics of argumentativeness, it was found that the median argumentativeness score for participants was 3.2. Participants were considered to be high (\( n = 177 \)) in argumentativeness if they scored higher than 3.2 on the Argumentativeness Scale, and they were considered low (\( n = 178 \)) in argumentativeness if they scored lower than 3.2 on the Argumentativeness Scale. The range of scores for participants high in argumentativeness was 3.3-4.4 (\( M = 3.50, SD = .20 \)), and the range of scores for participants low in argumentativeness was 1.1-3.1 (\( M = 2.88, SD = .25 \)). Forty-nine of the participants fell at the median score, and they were excluded from analysis. The median perceived siblings’ argumentativeness score was 3.1. Perceived sibling argumentativeness scores were considered high (\( n = 198 \)) if they scored higher than 3.1, and low (\( n = 178 \)) if they scored lower than 3.1 on the Argumentativeness Scale. The range of scores for siblings perceived to be high in argumentativeness was 3.2-4.3 (\( M = 3.45, SD = .22 \)), and the range of scores for siblings
Table 2

*Zero-order Correlations of Argumentativeness and Verbal Aggressiveness with the Dependent Variables (Hypotheses 1-8)*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Communication satisfaction</th>
<th>Relationship satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived sibling argumentativeness</td>
<td>.15**</td>
<td>.07</td>
</tr>
<tr>
<td>Participant argumentativeness</td>
<td>.03</td>
<td>-.08</td>
</tr>
<tr>
<td>Perceived sibling verbal aggressiveness</td>
<td>-.38**</td>
<td>-.38**</td>
</tr>
<tr>
<td>Participant verbal aggressiveness</td>
<td>-.21**</td>
<td>-.18**</td>
</tr>
</tbody>
</table>

*Note. N = 420. ** p < .01.*

perceived to be low in argumentativeness was 1.0-3.0 ($M = 2.76, SD = .27$). Fifty-five of the perceived siblings’ argumentativeness scores fell at the median score, and they were excluded from analysis. Zero-order correlations were obtained for RQ1a-b. The results showed a significant positive relationship between perceived argumentativeness of a sibling and communication satisfaction when the participant was high in argumentativeness, $r(172) = .18, p < .05$. However, there was no significant relationship between the perceived argumentativeness of a sibling and communication satisfaction when the participant was low in argumentativeness, $r(173) = .13, p = .10$. Therefore, RQ1a implies that support for H1 (perceived sibling argumentativeness was positively related to communication satisfaction) applies only when participants are high in argumentativeness. Results also showed that there were no significant
relationships between participant’s argumentativeness and communication satisfaction when a sibling was perceived high $r(188) = .01, p = .95$, or low, $r(150) = .05, p = .58$ in argumentativeness (see Table 3).

**Argumentativeness and relationship satisfaction.** H3 posited a positive relationship between perceived argumentativeness of a sibling and relationship satisfaction. A zero-order correlation coefficient was obtained. Perceived sibling argumentativeness was not positively related to relationship satisfaction, $r(402) = .07, p = .19$ (see Table 2). H3 was not supported.

H4 predicted that there would be a positive relationship between participant’s self-reported argumentativeness and relationship satisfaction in sibling relationships. A zero-order correlation coefficient was obtained. Participant’s self-reported argumentativeness was not positively related to relationship satisfaction, $r(398) = -.08, p = .13$ (see Table 2). H4 was not supported.

RQ2a asked if the relationship between perceived argumentativeness of a sibling and relationship satisfaction depended on whether the participant was high or low in argumentativeness, and RQ2b asked if the relationship between a participant’s self-reported argumentativeness and relationship satisfaction depended on whether the sibling was perceived to be high or low in argumentativeness. Once again, median splits were used to classify argumentativeness as either being high or low. As reported above, participants were considered to be high ($n = 177$) in argumentativeness if they scored higher than 3.2 on the Argumentativeness Scale, and they were considered low ($n = 178$) in argumentativeness if they scored lower than 3.2 on the Argumentativeness Scale. The median perceived argumentativeness score of siblings was 3.1. Sibling argumentativeness scores were perceived to be high ($n = 198$) if they scored higher than 3.1, and low ($n = 178$) if they scored lower than 3.1 on the
Table 3

*Relationship of Independent Variables to Communication Satisfaction and Relationship Satisfaction as a Function of Sibling ARG, Sibling VA, Participant ARG, and Participant VA*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Communication satisfaction</th>
<th>Relationship satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>$r$</td>
</tr>
<tr>
<td><strong>Perceived sibling argumentativeness:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>given a high ARG participant</td>
<td>174</td>
<td>.18*</td>
</tr>
<tr>
<td>given a low ARG participant</td>
<td>175</td>
<td>.13</td>
</tr>
<tr>
<td><strong>Participant argumentativeness:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>given a high ARG sibling</td>
<td>190</td>
<td>.01</td>
</tr>
<tr>
<td>given a low ARG sibling</td>
<td>156</td>
<td>.05</td>
</tr>
<tr>
<td><strong>Perceived sibling verbal aggressiveness:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>given a high VA participant</td>
<td>197</td>
<td>-.29**</td>
</tr>
<tr>
<td>given a low VA participant</td>
<td>179</td>
<td>-.45**</td>
</tr>
<tr>
<td><strong>Participant verbal aggressiveness:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>given a high VA sibling</td>
<td>175</td>
<td>-.07</td>
</tr>
<tr>
<td>given a low VA sibling</td>
<td>200</td>
<td>-.17*</td>
</tr>
</tbody>
</table>

*Note.* Figures are zero-order correlation coefficients. ARG = argumentativeness.

VA = verbal aggressiveness. * $p < .05$. ** $p < .01$.

Argumentativeness Scale. Zero-order correlations were obtained. Results showed that there were no significant relationships between perceived argumentativeness of a sibling and relationship satisfaction when the participant was high, $r(172) = .08, p = .31$, or low, $r(173) = .10, p = .18$, in
argumentativeness. For RQ2b, zero-order correlations were obtained in order to determine if
there was a relationship between a participant’s self-reported argumentativeness and relationship
satisfaction when the sibling was perceived to be high, $r(188) = -.14, p = .05$, or low, $r(150) = -
.03, p = .71$, in argumentativeness. There was a significant negative relationship between
participant’s argumentativeness and relationship satisfaction when a sibling was considered high
in argumentativeness, (this correlation just reached significance), but not when the sibling was
considered low in argumentativeness (see Table 3).

**Verbal aggressiveness and communication satisfaction.** H5 predicted that perceived
verbal aggressiveness of a sibling would be negatively related to communication satisfaction. A
zero-order correlation coefficient was obtained. Perceived verbal aggressiveness of a sibling was
negatively related to communication satisfaction, $r(408) = -.38, p < .01$. H5 was supported.

H6 proposed that participant’s self-reported verbal aggressiveness would be
negatively related to communication satisfaction in the sibling relationship. A zero-order
correlation coefficient was obtained. Participant’s self-reported verbal aggressiveness was
negatively related to communication satisfaction, $r(399) = -.21, p < .01$. H6 was supported.

RQ3a asked if the relationship between perceived verbal aggressiveness of a sibling and
communication satisfaction depended on whether the participant was high or low in verbal
aggressiveness, and RQ3b asked if the relationship between a participant’s self-reported verbal
aggressiveness and communication satisfaction depended on whether the sibling was perceived
to be high or low in verbal aggressiveness. Median splits were used to classify verbal
aggressiveness as either being high or low. The median score of verbal aggressiveness reported
by participants was 2.4. Participants were considered to be high ($n = 201$) in verbal
aggressiveness if they scored higher than 2.4 on the Verbal Aggressiveness Scale, and they were
considered low \((n = 181)\) in verbal aggressiveness if they scored lower than 2.4 on the Verbal Aggressiveness Scale. The range of scores for participants high in verbal aggressiveness was 2.5-4.8 \((M = 2.99, SD = .41)\), and the range of scores for participants low in verbal aggressiveness was 1.0-2.3 \((M = 1.89, SD = .32)\). Twenty of the participants fell at the median score, and they were excluded from analysis. The median score of perceived verbal aggressiveness of a sibling according to the participants was 2.9. Perceived sibling verbal aggressiveness scores were considered high \((n = 187)\) if they were higher than 2.9, and low \((n = 203)\) if they were lower than 2.9 on the Verbal Aggressiveness Scale. The range of scores for siblings perceived to be high in verbal aggressiveness was 3.0-5.0 \((M = 3.53, SD = .51)\), and the range of scores for siblings perceived to be low in verbal aggressiveness was 1.0-2.8 \((M = 2.16, SD = .47)\). Twenty-one of the perceived siblings’ verbal aggressiveness scores fell at the median score, and they were excluded from analysis. Zero-order correlations were obtained. Results indicate that there was a significant negative relationship between perceived verbal aggressiveness of a sibling and communication satisfaction when the participant was high in verbal aggressiveness, \(r(195) = -.29, p < .01\). There was a significant negative relationship between the verbal aggressiveness of a sibling and communication satisfaction when the participant was low in verbal aggressiveness, \(r(177) = -.45, p < .01\). Using a Fisher r-to-z transformation, there was a significant difference between the coefficients just mentioned \(r = -.29\) and \(r = -.45\) (test statistic = -1.79, \(p = .037\), one tailed). However, there was not a significant relationship between participant’s verbal aggressiveness and communication satisfaction when a sibling was perceived to be high in verbal aggressiveness, \(r(173) = -.07, p = .40\). This finding implies that support for H6 (participant’s self-reported verbal aggressiveness was negatively related to communication satisfaction) only applies when the sibling is perceived to be high in verbal aggressiveness. There was a significant
negative relationship between participant’s verbal aggressiveness and communication satisfaction when a sibling was perceived to be low in verbal aggressiveness, \( r(198) = -.17, p < .05 \) (see Table 3).

**Verbal aggressiveness and relationship satisfaction.** H7 posited that perceived verbal aggressiveness of a sibling would be negatively related to relationship satisfaction. A zero-order correlation coefficient was obtained. Perceived verbal aggressiveness of a sibling was negatively related to relationship satisfaction, \( r(404) = -.38, p < .01 \). H7 was supported.

H8 predicted that there would be a negative relationship between participant’s self-reported verbal aggressiveness and relationship satisfaction in the sibling relationship. A zero-order correlation coefficient was obtained. Participant’s self-reported verbal aggressiveness was negatively related to relationship satisfaction, \( r(393) = -.18, p < .01 \). H8 was supported.

RQ4a asked if the relationship between perceived verbal aggressiveness of a sibling and relationship satisfaction depended on whether the participant was high or low in verbal aggressiveness, and RQ4b asked if the relationship between a participant’s self-reported verbal aggressiveness and relationship satisfaction depended on whether the sibling was perceived to be high or low in verbal aggressiveness. As indicated earlier, median splits were used to classify verbal aggressiveness as either being high or low. Again, participants were considered to be high \((n = 201)\) in verbal aggressiveness if they scored higher than 2.4 on the Verbal Aggressiveness Scale, and they were considered low \((n = 181)\) in verbal aggressiveness if they scored lower than 2.4 on the Verbal Aggressiveness Scale. The median score of perceived verbal aggressiveness of a sibling according to the participants was 2.9. Perceived sibling verbal aggressiveness scores were considered high \((n = 187)\) if they were higher than 2.9, and low \((n = 203)\) if they were
lower than 2.9 on the Verbal Aggressiveness Scale. Zero-order correlations were obtained. Results indicate that there was a significant negative relationship between perceived verbal aggressiveness of a sibling and relationship satisfaction when the participant was high in verbal aggressiveness, $r(195) = -.35, p < .01$. There was a significant negative relationship between the verbal aggressiveness of a sibling and relationship satisfaction when the participant was low in verbal aggressiveness, $r(177) = -.39, p < .01$. There were no significant relationships between participant’s verbal aggressiveness and relationship satisfaction when a sibling was perceived to be high $r(173) = -.09, p = .24$, or low in verbal aggressiveness $r(198) = -.10, p = .16$ (see Table 3).

Table 4 offers a summary of the findings for the hypotheses and research questions pertaining to Objective 1.

Table 4

*Hypothesis and Research Questions Related to Objective One -- The Effects of Argumentativeness and Verbal Aggressiveness on Communication and Relationship Satisfaction in Sibling Relationships*

<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Perceived argumentativeness of a sibling will be positively related to communication satisfaction in the sibling relationship.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Participant’s self-reported argumentativeness will be positively related to communication satisfaction in a sibling relationship.</td>
<td>Not supported</td>
</tr>
<tr>
<td>RQ1a: Does the relationship between perceived argumentativeness of a sibling and communication satisfaction depend on whether the participant is high or low in SIB ARG argumentativeness?</td>
<td>A significant positive relationship between and COMM SAT when the PART was high (not low) in ARG.</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1b: Does the relationship between a participant’s self-reported argumentativeness and communication satisfaction depend on whether the sibling is high or low in argumentativeness?</td>
<td>No significant relationships between PART ARG and COMM SAT when SIB was high or low in ARG.</td>
</tr>
<tr>
<td>H3: Perceived argumentativeness of a sibling will be positively related to relationship satisfaction in the sibling relationship.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H4: Participant’s self-reported argumentativeness will be positively related to relationship satisfaction in a sibling relationship.</td>
<td>Not supported</td>
</tr>
<tr>
<td>RQ2a: Does the relationship between perceived argumentativeness of a sibling and relationship satisfaction depend on whether the participant is high or low in argumentativeness?</td>
<td>No significant relationships between SIB ARG and REL SAT when the PART was high or low in ARG.</td>
</tr>
<tr>
<td>RQ2b: Does the relationship between a participant’s self-reported argumentativeness and relationship satisfaction depend on whether the sibling is high or low in argumentativeness?</td>
<td>Significant negative relationship between PART ARG and REL SAT when the SIB was high (not low) in ARG.</td>
</tr>
<tr>
<td>H5: Perceived verbal aggressiveness of a sibling will be negatively related to communication satisfaction in the sibling relationship.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Participant's self-reported verbal aggressiveness will be negatively related to communication satisfaction in the sibling relationship.</td>
<td>Supported</td>
</tr>
<tr>
<td>RQ3a: Does the relationship between perceived verbal aggressiveness of a sibling and communication satisfaction depend on whether the participant is high or low in verbal aggressiveness?</td>
<td>Significant negative relationships between SIB VA and COMM SAT when PART was high and low in VA.</td>
</tr>
<tr>
<td>Hypothesis/research question</td>
<td>Finding</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>RQ3b: Does the relationship between a participant’s self-reported aggressiveness and communication satisfaction depend on whether the sibling is high or low in verbal aggressiveness?</td>
<td>A significant negative relationship between PART VA and COMM SAT when SIB was low (not high) in VA.</td>
</tr>
<tr>
<td>H7: Perceived verbal aggressiveness of a sibling will be negatively related to relationship satisfaction in the sibling relationship.</td>
<td>Supported</td>
</tr>
<tr>
<td>H8: Participant’s self-reported verbal aggressiveness will be negatively related to relationship satisfaction in the sibling relationship.</td>
<td>Supported</td>
</tr>
<tr>
<td>RQ4a: Does the relationship between perceived verbal aggressiveness of a sibling and relationship satisfaction depend on whether the participant is high or low in verbal aggressiveness?</td>
<td>Significant negative relationships between SIB VA and REL SAT when the PART was high and low in VA.</td>
</tr>
<tr>
<td>RQ4b: Does the relationship between a participant’s self-reported verbal aggressiveness and relationship satisfaction depend on whether the sibling is high or low in verbal aggressiveness?</td>
<td>No significant relationships between PART VA and REL SAT when the SIB was high or low in VA.</td>
</tr>
</tbody>
</table>

*Note. ARG = argumentativeness. COMM SAT = communication satisfaction. PART = participant. REL SAT = relationship satisfaction. SIB = sibling. VA = verbal aggressiveness.*

**ASDM Implications—Objective 2**

**Argumentativeness in relation to verbal aggressiveness.** H9 proposed that participant’s self-reports of argumentativeness would be negatively related to self-reported verbal aggressiveness. A zero-order correlation coefficient was obtained. Participant’s self-reported argumentativeness was not negatively related to their self-reported verbal
aggressiveness, \( r(387) = .05, p = .34 \). H9 was not supported.

H10 predicted that there would be a negative relationship between perceived argumentativeness of a sibling and perceived verbal aggressiveness of a sibling. A zero-order correlation coefficient was obtained. Perceived argumentativeness of a sibling was not negatively related to perceived verbal aggressiveness of a sibling, \( r(399) = -.02, p = .65 \). H10 was not supported.

**Sibling dyads and the ASDM.** H11 predicted that in male P-male S sibling dyads, the participant’s self-reported verbal aggressiveness would be positively related to self-reported physical aggressiveness when participants were low in argumentativeness, but not when they were high in argumentativeness. A median split was used to classify argumentativeness as either being high or low. Participants \( n = 43 \) were considered to be high in argumentativeness if they scored higher than 3.2 on the Argumentativeness Scale, and they were considered low \( n = 42 \) in argumentativeness if they scored lower than 3.2 on the Argumentativeness Scale. Zero-order correlations were obtained. Participant’s self-reported verbal aggressiveness was positively related to self-reported physical aggressiveness when the participants were low in argumentativeness, \( r(41) = .59, p < .05 \). However, participant’s self-reported verbal aggressiveness was also positively related to self-reported physical aggressiveness when the participants were high in argumentativeness, \( r(40) = .36, p < .05 \) (see Table 5). H11 was partially supported.

For participants low in argumentativeness, RQ5 asked whether self-reported verbal aggressiveness would be related to self-reported physical aggressiveness when (a), both siblings were female \( n = 61 \), (b), the participant was female and the sibling was male \( n = 40 \), or (c), the participant was male and the sibling was female \( n = 25 \). Would these effects be observed
when the participants were high in argumentativeness? As explained earlier, a median split indicated that a participant would be considered low in argumentativeness if he or she scored lower than 3.2 on the Argumentativeness Scale, and considered high in argumentativeness if he scored higher than 3.2 on the Argumentativeness Scale. Zero-order correlations were obtained.

Results revealed that the only significant positive relationship found when the participant was low in argumentativeness was that between the female P-female S dyad, \( r(59) = .68, p < .01 \). There were no significant relationships between self-reported verbal aggressiveness and self-reported physical aggressiveness when participants were low in argumentativeness in the female P-male S dyad, \( r(38) = .28, p = .25 \), nor the male P-female S dyad, \( r(23) = .39, p = .06 \). Results showed that there were significant positive relationships between self-reported verbal aggressiveness and self-reported physical aggressiveness when participants were high in argumentativeness in two dyads: female P-female S, \( r(42) = .53, p < .01 \), female P-male S, \( r(50) = .60, p < .01 \), but not the male P-female S, \( r(25) = .37, p > .05 \). (See Table 5).

H12 proposed that in male P-male P sibling dyads, the perceived verbal aggressiveness of a sibling would be positively related to perceived physical aggressiveness of a sibling when siblings were perceived to be low (\( n = 44 \)) in argumentativeness, but not when they were perceived to be high (\( n = 49 \)) in argumentativeness. A median split was used to classify perceived argumentativeness of the sibling as either being high or low. Sibling argumentativeness scores were considered high if they scored higher than 3.1, and low if they scored lower than 3.1 on the Argumentativeness Scale. Zero-order correlations were obtained. Results showed that the perceived verbal aggressiveness of a sibling was positively related to the perceived physical aggressiveness of a sibling when siblings were perceived to be low in argumentativeness, \( r(42) = .68, p < .01 \). In addition, perceived verbal aggressiveness of a sibling
was positively related to the perceived physical aggressiveness of a sibling when siblings were perceived to be high in argumentativeness, $r(47) = .65, p < .01$ (see Table 5). H12 was partially supported.

Table 5

Relationship of Verbal Aggressiveness to Physical Aggressiveness for Participants and Siblings High and Low in Argumentativeness (Zero-order correlation coefficients)

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Male participant</th>
<th>Female participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male sibling</td>
<td>Female sibling</td>
</tr>
<tr>
<td>Participant VA with Participant PA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>given a high ARG participant</td>
<td>.35*</td>
<td>.37</td>
</tr>
<tr>
<td>(n = 41)</td>
<td>(n = 27)</td>
<td>(n = 52)</td>
</tr>
<tr>
<td>given a low ARG participant</td>
<td>.58**</td>
<td>.39</td>
</tr>
<tr>
<td>(n = 43)</td>
<td>(n = 25)</td>
<td>(n = 40)</td>
</tr>
</tbody>
</table>

Sibling VA with Sibling PA

| given a high ARG sibling | .65** | .79** | .71** | .59** |
| (n = 47)       | (n = 30) | (n = 49) | (n = 67) |        |
| given a low ARG sibling | .68** | .66** | .70** | .58** |
| (n = 45)       | (n = 19) | (n = 36) | (n = 38) |        |

Note. ARG = argumentativeness. VA = verbal aggressiveness. PA = physical aggressiveness. * $p < .05$. ** $p < .01$. 
RQ6 asked for siblings perceived low in argumentativeness, would perceived verbal aggressiveness of a sibling be related to perceived physical aggressiveness of the sibling when (a), both siblings were female \((n = 38)\), (b), the participant was female and the sibling was male \((n = 36)\), or (c), the participant was male and the sibling was female \((n = 19)\). Would these effects be observed when the siblings were high in argumentativeness? A median split indicated that a sibling would be perceived low in argumentativeness if he or she scored lower than 3.1 on the Argumentativeness Scale, and would be considered high in argumentativeness if he or she scored higher than 3.1 on the Argumentativeness Scale. Zero-order correlations were obtained. It was found that there were significant positive relationships between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness when the sibling was low in argumentativeness in all three dyads. The following results were obtained: the female P-female S dyad, \(r(36) = .59, p < .01\), the female P-male S dyad, \(r(34) = .70, p < .01\), and the male P-female S dyad, \(r(17) = .66, p < .01\). In addition, it was found that there were significant positive relationships between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness when the sibling was high in argumentativeness in all three dyads. The following results were obtained: the female P-female S dyad, \(r(65) = .59, p < .01\), the female P-male S dyad, \(r(47) = .71, p < .01\), and the male P-female S dyad, \(r(28) = .79, p < .01\). (See Table 5).

H13 predicted that in male P-male S dyads \((n = 108)\), participants’ self-reports of verbal aggressiveness would be positively related to perceived physical aggressiveness of a sibling. A zero-order correlation coefficient was obtained. Participants’ self-reports of verbal aggressiveness was positively related to perceived physical aggressiveness, \(r(106) = .23, p < .05\). H13 was supported.

RQ7 asked if participants’ self-reports of verbal aggressiveness would be positively related
to perceived physical aggressiveness of a sibling when (a), both siblings were female \((n = 120)\), (b), the participant was female and the sibling was male \((n = 103)\) or (c), the participant was male and the sibling was female \((n = 57)\). Zero-order correlations were obtained. Results showed that the only significant positive relationship was that of the female P-male S dyad, \(r(101) = .27, p < .01\). The dyads of female P-female S \(r(118) = .10, p = .13\), and male P-female S \(r(55) = .17, p = .22\), had no significant relationships (see Table 6).

Table 6

*Zero-order Correlations of Verbal Aggressiveness and Physical Aggressiveness as a Function of Relationship Type*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Male participant</th>
<th>Female participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male sibling</td>
<td>Female sibling</td>
</tr>
<tr>
<td>Participant VA with Sibling PA</td>
<td>(.23^*)</td>
<td>(.17)</td>
</tr>
<tr>
<td>((n = 108))</td>
<td>((n = 57))</td>
<td>((n = 103))</td>
</tr>
<tr>
<td>Sibling VA with Participant PA</td>
<td>(.42^{**})</td>
<td>(.18)</td>
</tr>
<tr>
<td>((n = 115))</td>
<td>((n = 58))</td>
<td>((n = 105))</td>
</tr>
<tr>
<td></td>
<td>(.27^{**})</td>
<td>(.23^*)</td>
</tr>
<tr>
<td></td>
<td>((n = 122))</td>
<td></td>
</tr>
</tbody>
</table>

*Note. VA = verbal aggressiveness. PA = physical aggressiveness. \(^* p < .05. \^{**} p < .01.\)*

H14 predicted that in male P-male S dyads \((n = 115)\), perceived verbal aggressiveness of a sibling would be positively related to participants’ self-reported physical aggressiveness. A zero-
order correlation coefficient was obtained. Perceived verbal aggressiveness of a sibling was positively related to participants’ self-reported physical aggressiveness, $r(113) = .42, p < .01$. H14 was supported.

RQ 8 asked if the above effects would be observed when (a) both siblings were female ($n = 122$), (b) the participant was female and the sibling was male ($n = 105$), or (c) the participant was male and the sibling was female ($n = 58$). Zero-order correlations were obtained. Results revealed a significant positive relationship in the female P-female S dyad, $r(120) = .23, p < .05$, and the female P-male S dyad, $r(103) = .27, p < .01$. There was no significant difference in the male P-female S dyad $r(56) = .18, p = .16$ (see Table 6).

Table 7 offers a summary of the findings for the hypotheses and research questions regarding Objective 2.

Table 7

*Hypothesis and Research Questions Related to Objective Two-- Applying the ASDM to the Sibling Relationship*

<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H9: Participants’ self-reports of argumentativeness will be negatively related to their self-reports of verbal aggressiveness.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H10: Perceived argumentativeness of a sibling will be negatively related to perceived verbal aggressiveness of a sibling.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H11: In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to self-reports of physical aggressiveness when participants are low in argumentativeness, but not when they are high in argumentativeness.</td>
<td>Partially supported. PART VA was positively related to PA when participants were both high and low in ARG.</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RQ5:</strong> For participants low in argumentativeness, will self-reported verbal aggressiveness be related to self-reported physical aggression when (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female?</td>
<td>Significant positive relationship found in the female P-female S dyad when the PART was low in ARG, but not in the other dyads.</td>
</tr>
<tr>
<td>Will these effects be observed when participants are high in argumentativeness?</td>
<td>Significant positive relationships between PART VA and PART PA when PART high in ARG in the female P-female S and the male S dyads.</td>
</tr>
<tr>
<td><strong>H12:</strong> In male P-male S dyads, perceived verbal aggressiveness of a sibling will be positively related to perceived physical aggressiveness of a sibling when siblings are perceived to be low in argumentativeness, but not when they are perceived to be high in argumentativeness.</td>
<td>Partially supported. SIB VA was positively related to PA when siblings were both high and low in ARG.</td>
</tr>
<tr>
<td><strong>RQ6:</strong> For siblings low in argumentativeness, will perceived verbal aggressiveness of a sibling be related to perceived physical aggressiveness of the sibling when: (a), both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female? Will these effects be observed when siblings are high in argumentativeness?</td>
<td>Significant positive relationships between SIB VA and SIB PA when the SIB was both high and low in ARG in all three dyads.</td>
</tr>
<tr>
<td><strong>H13:</strong> In male P-male S dyads, participants’ self-reports of verbal aggressiveness will be positively related to perceived physical aggressiveness of a sibling.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>RQ7:</strong> Will the above effect be observed when (a) both siblings are female, (b) the participant is female and the sibling is male, or (c) the participant is male and the sibling is female?</td>
<td>PART VA positively related to SIB PA in the female P-male S dyad.</td>
</tr>
<tr>
<td><strong>H14:</strong> In male P-male S dyads, perceived verbal aggressiveness of a sibling will be positively related to participants’ self-reports of physical aggressiveness.</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Gender Differences in Argumentativeness, Verbal Aggressiveness, and Physical Aggressiveness—Objective 3

In order to compare male and female self-reported argumentativeness levels (H15), verbal aggressiveness levels (H16), and physical aggressiveness (H17), independent t-tests were conducted. Results from these analyses are shown in Table 6. There were no significant differences in males and females in regard to self-reported argumentativeness, $t(398) = -0.82$, $p = .78$; $d = -0.08$. H15 was not supported. Males reported higher levels of verbal aggressiveness than females, $t(396) = 4.90$, $p < .01$; $d = 0.49$. H16 was supported, Likewise, H17 was supported, with males reporting higher levels of physical aggressiveness than females, $t(404) = 5.43$, $p < .01$; $d = 0.55$ (see Table 8).

Validity and the Verbal Aggressiveness Scale—Objective 4

Means for participants’ and siblings’ perceived verbally aggressive behaviors were computed. Table 10 displays the means and standard deviations of participants’ and siblings’ perceived verbally aggressive behaviors. As for verbally aggressiveness behaviors, participants reported their most frequently used verbally aggressive behaviors as being the same verbally...
Table 8

Means and Independent Samples t-tests for Gender Differences in Argumentativeness, Verbal Aggressiveness, and Physical Aggressiveness

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argumentativeness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>171</td>
<td>3.17</td>
<td>.38</td>
<td>-.82</td>
</tr>
<tr>
<td>Females</td>
<td>229</td>
<td>3.20</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>Verbal aggressiveness</td>
<td></td>
<td></td>
<td></td>
<td>4.90**</td>
</tr>
<tr>
<td>Males</td>
<td>169</td>
<td>2.64</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>229</td>
<td>2.33</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>Physical aggressiveness</td>
<td></td>
<td></td>
<td></td>
<td>5.43**</td>
</tr>
<tr>
<td>Males</td>
<td>176</td>
<td>2.21</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>230</td>
<td>1.85</td>
<td>.68</td>
<td></td>
</tr>
</tbody>
</table>

Note. ** p < .01, two-tailed.

Table 9 offers a summary of the findings for the hypotheses and research questions relating to Objective 3.

Table 9

Hypothesis Related to Objective Three -- Gender Differences in Argumentativeness, Verbal Aggressiveness and Physical Aggressiveness

<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H15: Male self-reported argumentativeness levels will be higher than female self-reported argumentativeness levels.</td>
<td>Not supported</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Hypothesis/research question</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H16: Male self-reported verbal aggressiveness levels will be higher than female self-reported verbal aggressiveness levels.</td>
<td>Supported</td>
</tr>
<tr>
<td>H17: Male self-reported physical aggressiveness will be higher than female self-reported physical aggressiveness.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

*Note. N = 420.*

aggressive behaviors they perceived their siblings using. For example, the four verbally aggressive behaviors used most often by the participant were the same as those perceived to be used most often by the sibling. These included: nonverbal emblems, swearing, ridicule, and teasing.

RQ9 asked if the participant’s verbal aggressiveness would be positively related to the participant’s use of each of the ten verbally aggressive behaviors. Zero-order correlations were obtained. Results indicated that each of the ten verbally aggressive behaviors was positively related to the participant’s verbal aggressiveness: nonverbal emblems, $r(400) = .19, p < .01$, swearing, $r(400) = .27, p < .01$, threats, $r(400) = .34, p < .01$, ridicule, $r(400) = .33, p < .01$, teasing, $r(400) = .13, p < .01$, malediction, $r(400) = .31, p < .01$, physical appearance attacks, $r(400) = .36, p < .01$, background attacks, $r(400) = .30, p < .01$, competence attacks, $r(400) = .34, p < .01$, and character attacks, $r(400) = .31, p < .01$ (see Table 10).

The Cronbach’s alpha for the Verbal Aggressiveness Behavior Inventory was .87, and can be regarded as reliable. Out of all ten of the verbal aggressiveness behaviors, teasing had a low correlation with verbal aggressiveness ($r = .13$). Therefore, a Cronbach’s alpha coefficient was obtained for the Verbal Aggressiveness Behavior Inventory dropping the behavior, teasing. With
teasing dropped, the Cronbach’s alpha for the Verbal Aggressiveness Behavior Inventory was .88. There was a minimal difference between the Cronbach’s alpha coefficients (.87 and .88) when teasing was included or excluded from the scale reliability analysis. Given this minimal difference, teasing can still be considered a verbally aggressive behavior on the Verbal Aggressiveness Behavior Inventory.

RQ10 asked if siblings’ perceived verbal aggressiveness would be positively related to the siblings’ perceived use of each of the ten verbally aggressive behaviors. Zero-order correlations were obtained. Results showed that each of the ten verbally aggressive behaviors was positively related to the siblings’ perceived verbal aggressiveness: nonverbal emblems, \( r(409) = .34, p < .01 \), swearing, \( r(409) = .40, p < .01 \), threats, \( r(409) = .48, p < .01 \), ridicule, \( r(409) = .47, p < .01 \), teasing, \( r(409) = .26, p < .01 \), malediction, \( r(409) = .44, p < .01 \), physical appearance attacks, \( r(409) = .41, p < .01 \), background attacks, \( r(409) = .40, p < .01 \), competence attacks, \( r(409) = .45, p < .01 \), and character attacks, \( r(409) = .41, p < .01 \) (see Table 10).

A Cronbach’s alpha coefficient was obtained for the Sibling Verbal Aggressiveness Behavior Inventory, and this coefficient was .90. Once again, the behavior of teasing had a low correlation with verbal aggressiveness \( (r = .26) \). A reliability analysis was run on the Verbal Aggressiveness Behavior Inventory with teasing dropped. The Cronbach’s alpha coefficient with teasing dropped was .90. There was no difference in the reliability of the scale when teasing was included or excluded. This finding suggests that teasing belongs on the measure.

To further explore participant’s verbal aggressiveness behaviors, a mean score for participants across all of the verbally aggressive behaviors was calculated. Then, zero-order correlations were obtained to determine if there was a relationship between the participant’s verbal aggressiveness \( (M = 2.46, SD = .65) \) and the participant’s use of verbally aggressive
Table 10

Zero-order Correlations of Verbal Aggressiveness Scores with Verbally Aggressive Behaviors

<table>
<thead>
<tr>
<th>Verbally-aggressive behavior</th>
<th>Participant’s verbally-aggressive behaviors</th>
<th>Sibling’s verbally-aggressive behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation w/ participant VA</td>
<td>Correlation w/ sibling VA</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>r</td>
</tr>
<tr>
<td>Nonverbal emblems</td>
<td>2.96 (1.06)</td>
<td>.19**</td>
</tr>
<tr>
<td>Swearing</td>
<td>2.87 (1.21)</td>
<td>.27**</td>
</tr>
<tr>
<td>Threats</td>
<td>1.77 (1.00)</td>
<td>.34**</td>
</tr>
<tr>
<td>Ridicule</td>
<td>2.42 (1.10)</td>
<td>.33**</td>
</tr>
<tr>
<td>Teasing</td>
<td>3.34 (1.10)</td>
<td>.13**</td>
</tr>
<tr>
<td>Maledictions</td>
<td>2.13 (1.06)</td>
<td>.31**</td>
</tr>
<tr>
<td>Physical appearance attacks</td>
<td>1.86 (1.09)</td>
<td>.36**</td>
</tr>
<tr>
<td>Background attacks</td>
<td>1.63 (0.91)</td>
<td>.30**</td>
</tr>
<tr>
<td>Competence attacks</td>
<td>1.97 (1.03)</td>
<td>.34**</td>
</tr>
<tr>
<td>Character attacks</td>
<td>2.04 (1.12)</td>
<td>.31**</td>
</tr>
</tbody>
</table>

Note. N = 402 Participants. N = 411 Siblings. VA = verbal aggressiveness score. Verbally aggressive behaviors were reported on a scale from 1 (Never) to 5 (Very often). ** p < .01.
between the participant’s verbal aggressiveness and the participant’s use of verbally aggressive behaviors, \( r(400) = .42, p < .01 \).

Similarly, a mean score for siblings’ perceived behaviors across all of the verbally aggressive behaviors was calculated. Then, zero-order correlations were obtained to determine if there was a relationship between the siblings’ verbal aggressiveness \((M = 2.82, SD = .82)\) and the siblings’ perceived use of verbally aggressive behaviors \((M = 2.23, SD = .82)\). Results indicated that there was a significant positive relationship between the siblings’ verbal aggressiveness and the siblings’ perceived use of verbally aggressive behaviors, \( r(409) = .56, p < .01 \).

Table 11 offers an overview of the findings regarding the research questions pertaining to Objective 4. The present chapter provided the results to the research hypotheses and research questions given in chapter two. The following chapter will discuss the findings, the implications of the results, the limitations of the study, and possible future research directions.

Table 11

<table>
<thead>
<tr>
<th>Research Questions Related to Objective Four – Construct Validity of the Verbal Aggressiveness Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis/research question</td>
</tr>
<tr>
<td>RQ9: Will the participant’s verbal aggressiveness be positively related to the participant’s use of each of the ten verbally aggressive behaviors?</td>
</tr>
<tr>
<td>RQ10: Will the perceived verbal aggressiveness of the sibling be positively related to the perceived siblings’ use of each of the ten verbally aggressive behaviors?</td>
</tr>
</tbody>
</table>

*Note. VA = Verbal aggressiveness.*
Chapter V

Discussion

The aim of this study was to examine argumentativeness and verbal aggressiveness in sibling relationships. Specifically, the study had four overall objectives. The first objective was to determine whether perceived argumentativeness and perceived verbal aggressiveness are related to communication satisfaction and relationship satisfaction in sibling relationships. The second objective was to investigate whether argumentative skills are related to the use of verbal aggressiveness by partners in sibling relationships, and whether this verbal aggressiveness is related to physical aggression. The third objective was to examine gender differences in argumentative skill and verbal aggressiveness, as well as to determine whether gender of the participant was related to physical aggression in same-sex and opposite-sex sibling dyads. The fourth objective was to explore the validity of the Verbal Aggressiveness Scale by obtaining information about whether scores on the Verbal Aggressiveness Scale were related to the occurrence of actual verbally aggressive behaviors as recalled by the participants. The current chapter will summarize the study’s findings, with implications discussed. In addition, limitations and directions for future research are provided.

Summary and Implications

Objective 1—Effects of Argumentativeness and Verbal Aggressiveness on Sibling Relationships

Argumentativeness, communication satisfaction and relationship satisfaction. The relationship of argumentativeness to communication and relationship satisfaction in sibling relationships was explored. Participants indicated that the perceived argumentativeness of a sibling was positively related to communication satisfaction (H1). This relationship was expected
because argumentativeness is considered a positive trait in that it can help cultivate interpersonal communication (Infante & Rancer, 1982).

However, no significant relationships were found between participant’s argumentativeness and communication satisfaction, participant’s argumentativeness and relationship satisfaction, and perceived argumentativeness of a sibling and relationship satisfaction. These results are surprising given the past findings that led Infante and Rancer (1996) to the following conclusion: “Perhaps the most striking feature of the body of research based on the argumentativeness and verbal aggressiveness frameworks is that the outcomes of argumentativeness are positive and all the outcomes of verbal aggression are negative” (p. 327). This quote suggests that argumentativeness would be positively related to communication and relationship satisfaction because argumentativeness is a constructive form of communication, and it would generate positive outcomes in sibling relationships.

In addition, the present study investigated whether different pairings of high and low argumentativeness in sibling dyads would relate to higher communication or relationship satisfaction (RQ1a-b and RQ2a-b). A significant positive relationship between perceived argumentativeness of a sibling and communication satisfaction was observed when the participant was high in argumentativeness. Also, there was a significant positive relationship between a participant’s self-reported argumentativeness and relationship satisfaction when the sibling was perceived to be high in argumentativeness. These findings are consistent with previous research on argumentativeness indicating that argumentativeness can help cultivate interpersonal communication (Infante & Rancer, 1982).

However, the results showed that there was not a relationship between participant’s argumentativeness and communication satisfaction when the sibling was high in
argumentativeness. Nor was there a relationship between perceived argumentativeness of a sibling and relationship satisfaction when the participant was high in argumentativeness. These results are inconsistent with the previous research in other communication contexts (e.g., group, organizational, instructional) which found that argumentativeness is related to communication and relationship satisfaction (Infante & Gordon, 1989; Myers, 2002; Schodt, 2003).

One possible explanation of the unexpected results for argumentativeness and communication and relationship satisfaction is suggested by the method of the survey distribution. As respondents participated in the study online, it was not possible to provide verbal instructions about how to interpret the Argumentativeness Scale. Although the standard instructions for completing the Argumentativeness Scale were printed at the beginning of the Argumentativeness Scale on the survey, the participants were not told that argumentativeness involves arguing controversial topics, and does not mean a verbal altercation or what some may consider a fight. As mentioned in chapter two, Dowling and Flint (1990) note that the term argument could have a different meaning to different people. For instance, participants may view the term argument as “relationally-based” rather than “rational content-based discussions of issues” (p186). In fact, Dowling and Flint (1990) advocate using the term argument over controversial issues into each item on the original Argumentativeness Scale. However, as previously discussed, Rancer and Avtgis (2006) point out that, while not all items on the scale may use the phrase controversial issues, the instructions on the Argumentativeness Scale states explicitly: “This scale contains statements about arguing controversial issues.” Further, Rancer and Avtgis (2006) say that the researchers using the scale need to emphasize the instructions on the original Argumentativeness Scale before they administer it, and as a result, the problem of wording can be avoided. However, due to the scale being administered online, at no point were
the researcher and participants face-to-face. Hence, the instructions were not verbally emphasized to the participants, as Rancer and Avtgis (2006) advocate. This could account for why argumentativeness was not correlated positively with communication or relationship satisfaction. The participants simply may have misunderstood the meaning of argumentativeness.

Another possible explanation of why argumentativeness was not related to communication and relationship satisfaction may have to do with the participants’ self-reported argumentativeness scores and the siblings’ perceived argumentativeness scores. Recall that the mean argumentativeness score for the participant was 3.19 ($SD = .36$), and the mean perceived argumentativeness score of the sibling was 3.14 ($SD = .39$). These scores are almost identical. In fact, there was a significant positive relationship between participants’ argumentativeness and perceived siblings’ argumentativeness, $r(204) = .34, p < .01$. The participants perceived their sibling mirroring their own argumentativeness tendencies. Perhaps if the participants perceived their siblings as being more argumentative than themselves, or if there was not a positive relationship between participants’ argumentativeness and perceived siblings’ argumentativeness, then the participants may have perceived communication and relationship satisfaction more positively.

**Verbal aggressiveness, communication satisfaction and relationship satisfaction.** When exploring verbal aggressiveness and communication satisfaction, both participant and perceived sibling verbal aggressiveness were negatively related to communication satisfaction. Likewise, verbal aggressiveness of the both the participant and of the sibling were negatively related to relationship satisfaction. Recall from chapter two that verbal aggressiveness is considered a destructive form of communication (Infante, 1987). This study also implies that verbal aggressiveness is destructive in that it is negatively related to communication satisfaction. This
finding supports previous research that verbal aggressiveness has been shown to have a negative impact on satisfaction (Goodboy & Myers, 2011; Madlock & Kennedy-Lightsey, 2010; Myers & Johnson, 2003; Myers & Rocca, 2000). Regardless of who was reported to be verbally aggressive, the participant or the sibling, there was a negative relationship to communication and relationship satisfaction.

Furthermore, the present study investigated whether different pairings of high and low verbal aggressiveness in sibling dyads would result in greater communication or relationship satisfaction. In regard to communication satisfaction, it was found that there was a significant negative relationship between perceived verbal aggressiveness of a sibling and communication satisfaction when the participant was high in verbal aggressiveness. It was also found that there was a significant negative relationship between perceived verbal aggressiveness of a sibling and communication satisfaction when the participant was low in verbal aggressiveness. There were no significant relationships between a participant’s self-reported verbal aggressiveness and relationship satisfaction when the sibling was perceived to be low or high in verbal aggressiveness.

With this, if the participant was high or low in verbal aggressiveness, the results were the same. There was a significant negative relationship between the perceived verbal aggressiveness of a sibling and communication and relationship satisfaction, regardless of the participant’s verbal aggressiveness level. However, for the most part, there were no significant relationships between a participant’s verbal aggressiveness and communication and relationship satisfaction when the sibling was either high or low in verbal aggressiveness. The only exception was when the sibling was perceived to be low in verbal aggressiveness, there was a significant negative relationship between participant verbal aggressiveness and communication satisfaction.
Other than that, the verbal aggressiveness of a participant was not related to communication or relationship satisfaction. However, the verbal aggressiveness of a sibling was related to communication and relationship satisfaction. Here, participants see their siblings’ verbal aggressiveness as a communication behavior that influences communication and relationship satisfaction. Yet, participants did not perceive their own verbal aggressiveness as a factor influencing communication or relationship satisfaction.

Perhaps the participants saw their own verbally aggressive behaviors as harmless. For example, if the participants teased their siblings, they may have assumed their teasing was innocent, or playful. Recall that teasing was one form of a verbally aggressive behavior (Infante & Wigley, 1986). It may be that the participants did not view their own use of teasing as being harmful. Yet, when they thought about their siblings teasing them, the participants saw the siblings’ behaviors as being malicious, or as an attack. In other words, the teasing was considered verbally aggressive. Therefore, because the participants saw their intentions for using the verbally aggressive behaviors (playful or funny) as being innocent or without malice, they scored and considered themselves to be less verbally aggressive than their siblings. However, because they did not perceive their siblings’ use of teasing or any other verbally aggressive behavior as being playful, innocent, or without malice, they viewed their siblings as being more verbally aggressive.

Due to the destructive nature of verbal aggressiveness, it should be emphasized in the homes, schools, counselors’ offices, organizations, companies, etc. the dire need to develop communication skills that help eliminate verbal aggressiveness. In this study, it became obvious that verbal aggressiveness is destructive in sibling relationships, but it can be just as destructive in all other interpersonal relationships.
Objective 2—Implications of the ASDM

**Argumentativeness in relation to verbal aggressiveness.** It was predicted (Hypothesis 9) that participants’ self-reports of argumentativeness would be negatively related to self-reported verbal aggressiveness, while it was also predicted (Hypothesis 10) that there would be a negative relationship between perceived argumentativeness of a sibling and perceived verbal aggressiveness of a sibling. Interestingly, neither of these two hypotheses were supported. One would expect that argumentativeness scores would be negatively related to verbal aggressiveness scores, as these two communication behaviors have been conceptualized on opposite ends of a communication aggressiveness spectrum, with argumentativeness being constructive, and verbal aggressiveness being destructive.

However, as pointed out above, the instructions for the different scales that were included in the online survey were not verbally explained to the participants. One possible explanation of hypotheses 9 and 10 not being supported could be that the participants did not recognize the different communication phenomenon that the scales were trying to measure. Perhaps if the participants had a better understanding of argumentativeness, verbal aggressiveness, and the difference between the two, then the results would have met the researcher’s expectations. On the other hand, it was left to the participants to differentiate meanings of argumentativeness and verbal aggressiveness. These differences may not have been obvious to respondents who are not familiar with scholarly research, and the operational definitions used in scholarly research.

**Sibling dyads and the ASDM implications.** It is important to mention that the measures of the participant’s and sibling’s argumentativeness, verbal aggressiveness and physical aggression do not ask about argumentativeness, verbal aggressiveness and physical aggressiveness in the sibling relationship per se; rather they are general measures of argumentativeness, verbal
aggressiveness, and physical aggressiveness. For example, while the data may indicate a significant relationship between siblings high in verbal aggressiveness and physical aggressiveness, it is not known for sure the extent to which verbal aggressiveness is associated with physical aggressiveness in the specific sibling relationship that the participants reported about.

Sibling dyads in relation to argumentativeness, verbal aggressiveness, and physical aggressiveness were explored. In male P-male S sibling dyads, the participant’s self-reported verbal aggressiveness was positively related to self-reported physical aggressiveness when participants were low in argumentativeness, but not when they were high in argumentativeness. Here it was presumed that if one does not know how to generate arguments well, he will resort to using verbally aggressive messages, which then is related to the use of physical aggression. However, it was also found that if the participant was high in argumentativeness, there was a positive relationship between verbal aggressiveness and physical aggressiveness in the male P-male S sibling dyad. One would expect that if participants reported high argumentativeness scores, then they would be able to avoid using verbally aggressive messages that are related to the use of physical aggression.

Additionally, in male P-male S sibling dyads, the perceived verbal aggressiveness of a sibling was positively related to perceived physical aggressiveness of a sibling when siblings were perceived to be low in argumentativeness, but not when they were perceived to be high in argumentativeness. In male P-male S dyads, perceived verbal aggressiveness of the sibling and perceived physical aggressiveness of the sibling was positively related when the sibling was perceived to be low in argumentativeness. Again, it was presumed that because a sibling does not know how to generate arguments well, he resorts to using verbally aggressive messages, which
then is related to the use of physical aggression. Yet, results also indicated that if the sibling was perceived to be high in argumentativeness tendencies, there was a positive relationship between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness in male P-male S sibling dyads. As indicated above, one would expect that if siblings were perceived to be high in argumentativeness, then they would be able to avoid using verbally aggressive messages that are related to the use of physical aggression.

These findings contradict one of the underpinnings of the Argumentativeness Skill Deficiency Model (ASDM). To review, the ASDM posits that destructive communication such as verbal aggressiveness serves as a catalyst for physical violence. On the other hand, constructive communication such as argumentativeness reduces the likelihood that verbal conflict will spiral into physical aggression (Infante, Chandler & Rudd, 1989). According to the ASDM, those participants who were low in argumentativeness should have had a positive relationship between verbal aggressiveness and physical aggressiveness because they lacked the necessary argumentative skills that helps deter physical violence. In the present study, participants who were perceived to be low in argumentativeness had significant positive relationships between verbal aggressiveness and physical aggression. Conversely, results revealed that there was also a significant positive relationship between self-reported verbal aggressiveness and self-reported physical aggressiveness when the participant was high in argumentativeness. In other words, verbal aggression and physical aggression were positively related when one reported high argumentativeness. This is actually opposite of what the ASDM asserts. If one is high in argumentativeness, then he/she will have the necessary argumentative skills to avoid using verbally aggressive messages that can lead to physical aggression. Yet, in this study, high argumentativeness in a participant was still related to physical aggressiveness.
These findings fail to support the just mentioned assumption of the ASDM. This implies that some of the criticisms of the ASDM may be correct. Perhaps the ASDM is not completely accurate in that the model may not be able to predict that argumentative skill deficiencies will result in a greater propensity to be verbally aggressive, which then can lead to violence. In fact, one who possesses high argumentative skills may still be verbally aggressive and physically aggressive. As noted in chapter two, the ASDM has received many criticisms. For example, Hamilton and Mineo (2002) claim that there is a lack of evidence that demonstrates that argumentativeness has a large negative effect on verbal aggressiveness. Also, many attempts by researchers to increase argumentativeness in order to reduce verbal aggressiveness have been conducted (Kosberg & Rancer, 1998; Rancer, Avtgis, Kosberg, & Whitecap, 2000; Rancer, Whitecap, Kosberg, & Avtgis, 1997). However, in each of the studies listed, every attempt to increase the subjects’ argumentativeness levels resulted in increased verbal aggressiveness levels as well. Here it can be assumed that argumentativeness training enhanced argumentativeness, but was unsuccessful in inhibiting verbal aggressiveness. Thus, one’s argumentative ability may not decrease the use of verbal aggressiveness as the present study finds, as well as many other studies. (Kosberg & Rancer, 1998; Rancer, Avtgis, Kosberg, & Whitecap, 2000; Rancer, Whitecap, Kosberg, & Avtgis, 1997). Therefore, one must use the assumptions of the ASDM with caution.

On the other hand, it may be that a better measure of argumentativeness is needed before the assumption mentioned above is dismissed. Perhaps one’s self-reported argumentativeness level, or one’s perception of a sibling’s argumentativeness level is not an adequate way to obtain argumentativeness levels. Obtaining argumentativeness levels through an experimental observation research design may produce more accurate argumentativeness levels. This is just
one other way to collect data examining argumentativeness levels, but other methods could be employed. These other measures may be more indicative of one’s true argumentativeness levels, so until these measures are utilized, the underlying assumptions of the ASDM should not be entirely rejected.

For participants low in argumentativeness, a relationship between self-reported verbal aggressiveness and physical aggressiveness was examined in each of the sibling dyads of female P-female S, female P-male S, and male P-female S. It was found that the only significant positive relationship for the siblings was that between the female P-female S dyad. For participants high in argumentativeness, significant positive relationships were found between self-reported verbal aggressiveness and physical aggressiveness in all three sibling dyads: female P-female S, female P-male S, and male P-female S.

For siblings low in argumentativeness, a relationship between perceived verbal aggressiveness of a sibling and perceived physical aggressiveness of the sibling was investigated in the sibling dyads of female P-female S, female P-male S, and male P-female S. In all three dyads, when siblings were perceived to be low in argumentativeness, there were significant positive relationships between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness. Also, in all three dyads, when siblings were perceived to be high in argumentativeness, there were significant positive relationships between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness.

These results are intriguing for a few reasons. First of all, it was found that in the female P-female S sibling dyad, there was a relationship between verbal aggressiveness and physical aggressiveness. This could suggest that in a female siblings may become physically aggressive when she lacks argumentative skills and she is verbally aggressive. (Note that the current study
only found a relationship between verbal aggressiveness and physical aggressiveness, and this does not indicate that verbal aggressiveness causes physical aggressiveness). This is interesting because people generally associate physical aggressiveness between males, not necessarily females. As previously mentioned in chapter two, research by Cahn (1996) states, “Research shows that men are more likely to be the perpetrators of violence toward their female partners who are more likely to be their victims. Bograd (1990) reports that ‘wives suffer significantly more physical injuries than do husbands’” (p.133). Further, according to Marshall (1994), males are more like to hit or kick a wall, door, or furniture.

Also, recall from chapter two, that Martin, Anderson, Burant, and Weber (1997) looked at sibling sex influence on verbal aggressiveness in the sibling relationship. Results from that study indicated that female/female dyads tended to be more satisfied and used less verbally aggressive messages and teasing than the other dyads (female/male, male/female, male/male). Results from the present study are inconsistent with the results from the Martin et al. (1997) study. This may be because the Martin et al. (1997) study was conducted almost twenty years ago. Female’s use of verbal aggressiveness may have increased over the last couple of decades. Perhaps females are being conditioned or are learning how to be more aggressive. As a result, the communication that they use is more aggressive, even if it is destructive, as is the case for verbal aggressiveness.

However, the current findings demonstrate that verbal aggression and physical aggression do not discriminate. One who is verbally aggressive, whether the person be male or female, may be prone to physical aggression, despite research and stereotypical beliefs about males being more aggressive than females.

Another interesting finding of these results is that there was a significant positive relationship between self-reported verbal aggressiveness and self-reported physical
aggressiveness when the participant was low in argumentativeness in the female P-female S sibling dyad, and there were significant positive relationships between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness in the female P-female S dyad, the female P-male S dyad, and the male P-female S dyad. These results do support the ASDM in that a lack of argumentative skills relates positively to verbal aggression and physical aggression between siblings.

On the other hand, when high argumentativeness scores were reported, both participants’ and perceived siblings’ verbal aggressiveness was found to relate to physical aggressiveness in all four sibling dyads: male P-male S, female P-female S, female P-male S, and male P-male S. These results are inconsistent with the ASDM. As stated earlier, if the participants or siblings were high in argumentativeness, it would be expected that they would not be prone to use verbally aggressive messages, and these messages would not be related to physical aggressiveness. Once again though, verbal aggressiveness and physical aggressiveness are positively related. Although the assumption of the ASDM that a presence of argumentative skills helps reduce verbally messages was not met, the assumption of the ASDM that verbal aggressiveness and physical aggressiveness is related is consistent with the ASDM.

Surprisingly, when participants perceived the sibling to be low in argumentativeness, in all three sibling dyads, it was found that there was a significant positive relationship between perceived sibling verbal aggressiveness and perceived sibling physical aggressiveness. This puts forward the idea that when the participants of the study perceived their siblings as being low in argumentativeness, they saw a relationship between verbal aggressiveness and physical aggressiveness in their siblings, but participants were not as likely to see the same relationship for themselves. Put another way, when the participants were low in argumentativeness they did
not report a relationship between their own verbal aggressiveness and physical aggression (except in the female P-female S dyad). Yet, when their siblings were perceived to be low in argumentativeness, they saw a relationship between their perceived siblings’ verbal aggressiveness and their perceived siblings’ physical aggressiveness. Perhaps the participants saw more destructive communication behaviors in their siblings than they did in themselves. As mentioned earlier, the mean verbal aggressiveness score of the participant was 2.46 ($SD = .65$). The mean verbal aggressiveness score of the sibling was 2.82 ($SD = .82$). As it was reported in the previous chapter, results of a paired samples $t$-test revealed a significant difference between the means of participants’ and siblings’ verbal aggressiveness. Since the participants viewed their sibling as being more verbally aggressive it may simply be that the siblings were more verbally aggressive. However, one must not rule out the possibility of social desirability. It could be that the participants reported lower verbal aggressiveness scores because they could not be objective in their scoring of themselves, or perhaps they did not want to appear negative or undesirable in the view of the researcher who was reading the results. As Frey, Botan, and Kreps (2000) report about social desirability, “sometimes people don’t report the truth” (p. 96). Either way, social desirability could account for the discrepancy between self-reported verbal aggressiveness and perceived sibling verbal aggressiveness.

When exploring verbal aggressiveness and physical aggressiveness, with argumentativeness not considered, participant’s in male P-male S dyads reported that verbal aggressiveness was positively related to perceived physical aggressiveness of a sibling. Also, the perceived verbal aggressiveness of a sibling in male P-male S dyads was positively related to participants’ self-reported physical aggressiveness. In other words, verbal aggressiveness was shown to have a strong relationship with physical aggressiveness. One implication of the ASDM is that verbal
aggression can become a catalyst for physical violence. This does provide support that assumption of the ASDM. Yet, another core assumption of the ASDM is that a lack of argumentative skills result in verbal aggressiveness, which then may lead to physical aggressiveness. However, the assumption of an argumentative skill deficiency is not present in this case. Therefore, it cannot be stated that these results lend support to the ASDM. Instead, it can suggest that verbal aggression and physical aggression are often related to one another.

Further support was found that verbal aggressiveness and physical aggressiveness are often related. Verbal aggressiveness, either by the participant or by the sibling, in relation to physical aggressiveness was explored in the sibling dyads of female P-female S, female P-male S, and male P-female S. It was found that there was a relationship between verbally aggressive sisters and physical aggressiveness with their brothers. Furthermore, it was found that there is a relationship between female perceptions of a verbally aggressive sister, and physical aggression, as well as a relationship between a sister’s perceptions of a verbally aggressive brother and physical aggression. Once again verbal aggressiveness may be related to physical aggressiveness, regardless of one’s sex. However, it is important to note that there were no findings that the male participant paired with a female sibling indicated a relationship between verbal aggressiveness and physical aggressiveness. Any physically aggressive relationships between males and females implied in these results were those reported by females in regard to their brothers. Yet, results above did indicate a positive relationship between verbal aggressiveness and physical aggressiveness between brothers. Therefore, we can certainly assume that verbal aggressiveness is often accompanied with physical aggressiveness. As Hamilton (2012) states: “Although the ultimate causes of physical aggression may be economics, cultural, and demographic, one of the most proximate and powerful causes is verbal aggression”
This study offers further support that verbal aggressiveness, even in the sibling relationship, is related to physical aggressiveness.

**Objective 3—Gender Differences in Argumentativeness, Verbal Aggressiveness and Physical Aggressiveness**

In the present study, gender differences in argumentativeness, verbal aggressiveness, and physical aggressiveness were examined. Interestingly, there were no significant differences found in argumentativeness scores in regard to gender. In fact, there was virtually no difference in reported argumentativeness between males ($M = 3.17$, $SD = .38$) and females ($M = 3.20$, $SD = .34$).

Past research has found that males report higher levels of argumentativeness than females (Infante, 1982; Infante, 1985; Nicotera & Rancer, 1994; Rancer & Dierks-Stewart, 1985). It was documented earlier in the literature review that males may report higher levels of argumentativeness because they are merely fulfilling sex-role expectations (Infante, 1982). Males are conditioned to be competitive and assertive, and by being argumentative, they fulfill male role behavior. Similarly, Rancer and Baukus (1987) studied how sex differences influenced beliefs about arguing. They concluded that men and women differ in their overall belief structures about arguing. Females view arguing as hostile and combative. In addition, they reported that an argument is a strategy to control another (Rancer & Baukus, 1987).

However, it is important to point out that those studies were all conducted about 25 years ago. A more recent study by Schullery and Schullery (2003), found that for men, argumentativeness decreases throughout their twenties, and the decrease in argumentativeness levels off around the age of 45. For women, argumentativeness does not begin to decrease until their thirties, and this decrease continues through to their fifties. The Schullery and Schullery
(2003) study, and the present study imply that there may be a shift in the way women view argumentativeness. Women today may be more willing to express themselves than were the women 25 years ago. Perhaps the suggestions offered by Infante (1982) and Rancer and Baukus (1987) mentioned above no longer holds true. Women today may now be conditioned to be more competitive and assertive, and they do not see arguing as a hostile communication behavior. In fact, Schullery and Schullery (2003) suggest: “…perhaps the women’s movement has raised the argumentativeness of younger women (p. 219). As time progresses, so do some of the communication behaviors of women.

In regard to verbal aggressiveness, the present study supports previous research findings, with females reporting significantly lower levels of verbally aggressiveness than males. Research has consistently shown that males report higher levels of verbal aggressiveness than females (Infante, Wall, Leap, & Danielson, 1984; Johnson, Becker, Wigley, Haigh, & Craig, 2007; Jordan-Jackson, Lin, Rancer, & Infante, 2008; Nicotera & Rancer, 1994; Roberto & Finucane, 1997). Several researchers have offered various reasons as to why males report higher levels of verbal aggressiveness than females. For example, Kosberg and Rancer (1998) propose that men have been conditioned to be more competitive than women. Out of competitiveness, they may resort to verbally aggressive messages to help get their points across. They wish to win a point, and they will use a verbally aggressive message to do so.

Also, as noted earlier, Rancer, Whitecap, Kosberg, and Avtgis (1997) suggest that in today’s society, verbal aggression is part of our culture, and it is not considered or viewed as a destructive form of communication. For instance, the mass media (TV, music, movies) is full of verbally aggressive messages such as cursing, character attacks, nonverbal emblems, teasing, and ridicule. These behaviors all occur in movies, television shows, music, and even on the internet.
Therefore, this constant exposure to the verbal aggressiveness in society and in the media desensitizes us, and maybe males even more, to verbally aggressive behavior. Due to this desensitization, males may perceive this behavior as being acceptable. As a result, males may imitate the verbal aggressiveness that they have internalized from the mass media. They are merely acting in ways they are exposed to on a daily basis, and do not see verbal aggressiveness as a destructive form of communication. Instead, they view it as an acceptable means of communication because they have a “that is the way that everyone else talks/acts, so that is how I can/may act” viewpoint.

Although there may be several explanations as to why males report higher verbal aggressiveness levels than females, the implication is that males need to learn other ways of communicating their thoughts, anger, or frustrations. Perhaps this can be achieved through parents, mentors, counselors, spouses, teachers, or even siblings who can teach those males who are verbally aggressive to relay their thoughts and feelings in a more socially acceptable, safer way.

Just as males were found to report higher verbal aggressiveness than females, they also reported higher physical aggressiveness levels. This finding was not surprising, as males are stereotypically, and possibly realistically, notorious for getting into more physical altercations compared to females.

**Objective 4—Validity of the Verbal Aggressiveness Scale**

**Verbally aggressive behaviors.** As mentioned in chapter two, the Verbal Aggressiveness Scale has received much criticism (Beatty, Rudd, & Valencic, 1999; Kotowski, Levine, Baker, & Bolt, 2009; Levine, Beatty, Limon, Hamilton, Buck, & Chory-Assad, 2004; Levine, Kotowski, Beatty, & Van Kelegom, 2012). Yet the Verbal Aggressiveness Scale has demonstrated a long

Nonetheless, due to the criticisms mentioned earlier by Levine et al. (2012) that the Verbal Aggressiveness Scale does not measure actual verbally aggressive behaviors, the Verbal Aggressiveness Behavior Inventory was also used as a means to measure recalled verbally aggressive behaviors. The relationship between participant’s verbal aggressiveness obtained from the 10-item Verbal Aggressiveness Scale and each of the ten verbally aggressive behaviors from the Verbal Aggressiveness Behavior Inventory was examined. Comparing the data from these two measures, gathered in different ways, helps provide evidence of construct validity for the Verbal Aggressiveness Scale. Therefore, it was explored if the Verbal Aggressiveness Behavior Inventory would relate to the use of verbal aggressiveness reported in the Verbal Aggressiveness Scale.

Through zero-order correlations, it was found that each of the ten verbally aggressive behaviors from the Verbal Aggressiveness Behavior Inventory was positively related to the participant’s verbal aggressiveness. Likewise, siblings’ perceived verbal aggressiveness was positively related to the siblings’ perceived use of each of the ten verbally aggressive behaviors. In addition, another zero-order correlation test revealed that there was a significant relationship between the participant’s verbally aggressiveness behaviors and the participant’s use of verbal aggressiveness. The means of the participant’s verbally aggressive behaviors ($M = 2.46, SD = .65$) and participant’s verbal aggressiveness scores ($M = 2.29, SD = .72$) both suggest low levels...
of verbal aggressiveness. A zero-order correlation test also revealed that there was a significant relationship between the siblings’ perceived verbally aggressiveness behaviors and the siblings’ perceived use of verbal aggressiveness. Once again, the means of the perceived siblings’ verbally aggressive behaviors ($M = 2.23$, $SD = .82$) and the siblings’ verbal aggressiveness scores ($M = 2.82$, $SD = .82$) both suggest low levels of verbal aggressiveness.

While the Verbal Aggressiveness Scale has received much criticism, the present study found that the scale proved to be reliable for both participants and perceived siblings verbal aggressiveness with Cronbach’s alpha being .80 and .89 respectively. Although the Verbal Aggressiveness Behavior Inventory is based on recalled behaviors, the findings that each of the ten verbally aggressive behaviors of the participant and the sibling were positively related to verbal aggressiveness does provide support for construct validity of the Verbal Aggressiveness Scale. Construct validity, according to Frey, Botan, and Kreps (2000): “is the extent to which scores on a measurement instrument are related in logical ways to other established measures” (p. 117). The scores obtained from the Verbal Aggressiveness Scale did logically relate to the recalled behaviors reported on the Verbal Aggressiveness Behavior Inventory. Therefore, in the present study, the 10-item Verbal Aggressiveness Scale demonstrated reliability and construct validity. These findings can lend support for the use of the 10-item Verbal Aggressiveness Scale.

**Limitations and Directions for Future Research**

There are several limitations to the present study. The first limitation concerns the sample used in the study. The majority of the participants in this study were undergraduate college students. As a result, the participants were mainly young adults, obtaining a college education. This implies that the study cannot be generalized to a greater population. Furthermore, previous research suggests that the sibling relationship undergoes many changes throughout the lifetime
The current study highlights argumentativeness and verbal aggressiveness in the young adult population, and many changes in these communication behaviors and the sibling relationship can change over time. Future research should attempt to obtain participants with a wide variety of ages in order to achieve a better representative sample, and in order to gain insight into the relationship among argumentativeness, verbal aggressiveness, and physical aggressiveness in sibling relationships across the lifespan. In addition, future studies should use a more diverse sample, with participants representing varying socioeconomic backgrounds.

In regard to the sample, another limitation that should be acknowledged deals with the fact the present study had a rather large sample size ($N = 420$). It must be noted that having such a large sample size creates a higher potential for Type I error in significance tests. There was potential for relationships between the variables to be significant, when in fact, they were not. Given such a large sample, the effect size should also be addressed. It should be acknowledged that some of the significant correlations indicate rather small effect sizes. However, a correlation of $0.20 - 0.40$ can be considered a low correlation, with a “…definite but small relationship” (Frey, Botan, and Kreps, 2000, p. 360).

Another limitation of the study concerns the research design. It was the aim of the researcher to gain insight into how argumentativeness and verbal aggressiveness related to communication satisfaction and relationship satisfaction in sibling relationships. One way to achieve this was by getting the perspective of one sibling, in order to understand how his/her own communication behaviors, compounded with the perceptions of his/her siblings’ communication behaviors, affected communication satisfaction and relationship satisfaction. As a result, this study solicited the perspective of only one sibling. However, future research should attempt to incorporate both
siblings’ perspectives of their communication behaviors and relationships. Research such as this could explore how the role of one sibling’s argumentativeness and verbal aggressiveness plays in his/her perceptions of his/her sibling’s argumentativeness and verbal aggressiveness. It may be that one sibling’s verbal aggressive interacts with his/her perceptions of his/her sibling’s verbal aggressive, thereby affecting communication satisfaction and relationship satisfaction. In addition to this, research could also explore why siblings engage in aggressive communication behaviors. It would be of interest to find out why siblings decide to use verbally aggressive messages, to become physically aggressive, or to engage in argumentative communication.

Furthermore, it was found that in the sibling dyad, participant and perceived sibling verbal aggressiveness was positively related to physical aggressiveness when both siblings were female, and when the participant was a female and the sibling was a male. Females in the female P-female S and female P-male S dyad reported relationships between verbal aggressiveness and physical aggressive much like the male P-male S dyads. This was an interesting and surprising finding, and it should be explored more in future research.

An additional limitation of the research design involves using self-report and other-report instruments. One problem with using surveys is that the respondents may not accurately or honestly answer the questionnaires. In addition, when having the participants complete questionnaires about their siblings, the participants may have been biased in their responses due to how they view their siblings. However, using survey research is very useful when gathering information about populations that are too large for every participant to be sampled (Frey, Botan, & Kreps, 2000). Future research could employ mixed methods when collecting data by conducting interviews with the participants or conducting an experimental research design in order to overcome some of the limitations that is associated with survey research.
In addition to the limitations of a survey research design, there is also the limitation of the measures being used. As noted in chapter two, both the Argumentativeness Scale (Blickle, 1995; Hamilton & Mineo, 2002; Levine, Kotowski, Beatty, & Van Kelegom, 2012) and the Verbal Aggressiveness Scale (Beatty, Rudd, & Valencic, 1999; Kotowski, Levine, Baker, & Bolt, 2009; Levine, Beatty, Limon, Hamilton, buck, & Chory-Assad, 2004; Levine, Kotowski, Beatty, & Van Kelegom, 2012) have received much criticism. As Myers and Knox (2000) point out, both the 20-item Argumentativeness and Verbal Aggressiveness scales have demonstrated validity (Infante & Rancer, 1996). Although the present study did find support for the construct validity of the 10-item Verbal Aggressiveness Scale, future research may want to further explore the validity of the shortened versions of the Argumentativeness Scale and the Verbal Aggressiveness Scale. Future studies may want to use a research design that observes actual argumentative or verbally aggressive behaviors in order to provide further support for the Argumentativeness and Verbal Aggressiveness Scales.

Another limitation of the study concerns the use of correlational research. According to deVaus (2001): “People often confuse correlation with causation. Simply because one event follows another, or two factors co-vary, does not mean that one causes the other. The link between the two events may be coincidental rather than causal” (p. 3). Once again, future research should consider using an experimental research design. In this type of research technique, the behaviors of the participants can be observed, and further insight and conclusions can be drawn from aggressive communication behaviors and sibling communication satisfaction and relationship satisfaction.

In conclusion, 85% of United States citizens have a sibling (Stocker, Furman, & Lanthier,
1997). These are the people that many of us go to in a time of joy, sadness, celebration, and comfort. It is important to understand what communication behaviors affect the quality of sibling relationships. This study examined verbal aggressiveness and argumentativeness in the sibling relationship. However, the research in this study just sheds a tiny light into how argumentativeness and verbal aggressiveness impact sibling relationships. These two communication behaviors should be explored from different angles in order gain an even better understanding of communication and sibling relationships. The sibling relationships is a cradle-to-grave relationship. For that reason, scholars need to acquire an understanding of the factors that influence the extent to which it is a positive, satisfactory relationship.
APPENDIXES
Appendix A
Argumentativeness Scale

Instructions: This questionnaire contains statements about arguing controversial issues. Indicate how often each statement is true for you personally by placing the appropriate number in the blank to the right of the statement.

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

1. While in an argument, I worry that the person I am arguing with will form a negative impression of me. *
   ______

2. I am energetic and enthusiastic when I argue.
   ______

3. I enjoy a good argument over a controversial issue.
   ______

4. I prefer being with people who rarely disagree with me. *
   ______

5. I enjoy defending my point of view on an issue.
   ______

6. When I finish arguing with someone I feel nervous and upset. *
   ______

7. I consider an argument an exciting intellectual challenge.
   ______

8. I find myself unable to think of effective points during an argument. *
   ______

9. I have the ability to do well in an argument.
   ______

10. I try to avoid getting into arguments. *
    ______

* Items reverse coded
Appendix B
Sibling Argumentativeness Scale

Instructions: This questionnaire contains statements about arguing controversial issues. Indicate how often you believe each statement is true for your sibling by placing the appropriate number in the blank to the right of the statement.

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

1. While in an argument, my sibling worries that the person he/she is arguing with will form a negative impression of him/her. * 

2. My sibling is energetic and enthusiastic when he/she argues. 

3. My sibling enjoys a good argument over a controversial issue. 

4. My sibling prefers being with people who rarely disagree with him/her. * 

5. My sibling enjoys defending his/her point of view on an issue. 

6. When my sibling finishes arguing with someone he/she feels nervous and upset. * 

7. My sibling considers an argument an exciting intellectual challenge. 

8. My sibling is unable to think of effective points during an argument. * 

9. My sibling has the ability to do well in an argument. 

10. My sibling tries to avoid getting into arguments. * 

* Items reverse coded
Appendix C
Original 20-Item Argumentativeness Scale

Instructions: This questionnaire contains statements about arguing controversial issues. Indicate how often each statement is true for you personally by placing the appropriate number in the blank to the right of the statement.

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

1. While in an argument, I worry that the person I am arguing with will form a negative impression of me. _____
2. Arguing over controversial issues improves my intelligence. _____
3. I enjoy avoiding arguments. _____
4. I am energetic and enthusiastic when I argue. _____
5. After I finish an argument, I promise myself that I will not get into another. _____
6. Arguing with a person creates more problems for me than it solves. _____
7. I have a pleasant, good feeling when I win a point in an argument. _____
8. When I finish arguing with someone, I feel nervous and upset. _____
9. I enjoy a good argument over a controversial issue. _____
10. I get an unpleasant feeling when I realize I am about to get into an argument. _____
11. I enjoy defending my point of view on an issue. _____
12. I am happy when I keep an argument from happening. _____
13. I do not like to miss the opportunity to argue a controversial issue. _____
14. I prefer being with people who rarely disagree with me. _____
15. I consider an argument an exciting intellectual challenge. _____
16. I find myself unable to think of effective points during an argument. _____
17. I feel refreshed and satisfied after an argument on a controversial issue. _____
18. I have the ability to do well in an argument. _____
19. I try to avoid getting into an argument. _____
20. I feel excitement when I expect that a conversation I am in is leading to an argument. _____
Appendix D
Verbal Aggressiveness Scale

Instructions: This survey is concerned with how we try to get people to comply with our wishes. Indicate how often each statement is true for you personally when you try to influence other persons. Use the following scale:

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

___1. I am extremely careful to avoid attacking individuals’ intelligence when I attack their ideas. *

___2. When individuals are very stubborn, I use insults to soften their stubbornness.

___3. I try very hard to avoid having other people feel bad about themselves when I try to influence them. *

___4. If individuals I am trying to influence really deserve it, I attack their character.

___5. I try to make people feel good about themselves even when their ideas are stupid. *

___6. When people simply will not budge on a matter of importance, I lose my temper and say rather strong things to them.

___7. When individuals insult me, I get a lot of pleasure out of really telling them off.

___8. When I attack a person’s ideas, I try not to damage his/her self-concept. *

___9. When I try to influence people, I make a great effort not to offend them. *

___10. When nothing seems to work in trying to influence others, I yell and scream in order to get some movement from them.

* Items reverse coded
Appendix E
Sibling Verbal Aggressiveness Scale

Instructions: This survey is concerned with how we try to get people to comply with our wishes. Indicate how often each statement is true for your sibling when he/she is trying to influence other persons. Use the following scale:

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

___ 1. My sibling is extremely careful to avoid attacking individuals’ intelligence when he/she attacks their ideas. *
___ 2. When individuals are very stubborn, my sibling uses insults to soften their stubbornness.
___ 3. My sibling tries very hard to avoid having other people feel bad about themselves when he/she tries to influence them. *
___ 4. If individuals my sibling is trying to influence really deserve it, my sibling will attack their character.
___ 5. My sibling will try to make people feel good about themselves even when their ideas are stupid. *
___ 6. When people simply will not budge on a matter of importance, my sibling loses his or her temper, and says rather strong things to them.
___ 7. When individuals insult my sibling, My sibling gets a lot of pleasure out of really telling them off.
___ 8. When my sibling attacks a person’s ideas, my sibling tries not to damage his/her self-concept. *
___ 9. When my sibling tries to influence people, he/she makes a great effort not to offend them. *
___ 10. When nothing seems to work in trying to influence others, my sibling yells and screams in order to get some movement from them.

* Items reverse coded
Appendix F
Original 20-Item Verbal Aggressiveness Scale

Instructions: This survey is concerned with how we try to get people to comply with our wishes. Indicate how often each statement is true for you personally when you try to influence other persons. Use the following scale:

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

___ 1. I am extremely careful to avoid attacking individuals’ intelligence when I attack their ideas.
___ 2. When individuals are very stubborn, I use insults to soften their stubbornness.
___ 3. I try very hard to avoid having other people feel bad about themselves when I try to influence them.
___ 4. When people refuse to do a task I know is important, without good reason, I tell them they are unreasonable.
___ 5. When others do things I regard as stupid, I try to be extremely gentle with them.
___ 6. If individuals I am trying to influence really deserve it, I attack their character.*
___ 7. When people behave in ways that are in very poor taste, I insult them in order to shock them into proper behavior.
___ 8. I try to make people feel good about themselves even when their ideas are stupid.
___ 9. When people simply will not budge on a matter of importance I lose my temper and say rather strong things to them.
___ 10. When people criticize my shortcomings, I take it in good humor and do not try to get back at them.
___ 11. When individuals insult me, I get a lot of pleasure out of really telling them off.
___ 12. When I dislike individuals greatly, I try not to show it in what I say or how I say it.
___ 13. I like poking fun at people who do things which are very stupid in order to stimulate their intelligence.
___ 14. When I attack a person’s ideas, I try not to damage his/her self-concept.
___ 15. When I try to influence people, I make a great effort not to offend them.
___ 16. When people do things which are mean or cruel, I attack their character in order to help correct their behavior.
___ 17. I refuse to participate in arguments when they involve personal attacks.
___ 18. When nothing seems to work in trying to influence others, I yell and scream in order to get some movement from them.
___ 19. When I am not able to refute others’ positions, I try to make them feel defensive in order to weaken their positions.
___ 20. When an argument shifts to personal attacks, I try very hard to change the subject.
Appendix G
Physical Aggression Scale

Please rate each of the following items in terms of how characteristic they are of you. Use the following scale for answering these items:

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

___ 1. Once in a while I can’t control the urge to strike another person.

___ 2. Given enough provocation, I may hit another person.

___ 3. If somebody hits me, I hit back.

___ 4. I get into fights a little more than the average person.

___ 5. If I have to resort to violence to protect my rights, I will.

___ 6. There are people who pushed me so far that we came to blows.

___ 7. I can think of no good reason for ever hitting a person. *

___ 8. I have threatened people I know.

___ 9. I have become so mad that I have broken things.

* Item reverse coded
Appendix H
Sibling Physical Aggression Scale

Please rate each of the following items in terms of how characteristic they are of your sibling. Use the following scale for answering these items:

1 – Almost never true
2 – Rarely true
3 – Occasionally true
4 – Often true
5 – Almost always true

___ 1. Once in a while my sibling can’t control the urge to strike another person.
___ 2. Given enough provocation, my sibling may hit another person.
___ 3. If somebody hits my sibling, he/she will hit back.
___ 4. My sibling gets into fights a little more than the average person.
___ 5. If my sibling has to resort to violence to protect his/her rights, he/she will.
___ 6. There are people who pushed my sibling so far that they came to blows.
___ 7. My sibling can think of no good reason for ever hitting a person. *
___ 8. My sibling has threatened people he/she knows.
___ 9. My sibling has become so mad that he/she has broken things.

* Item reverse coded
Appendix I
Communication Satisfaction Inventory

Instructions: We are interested in how you think about conversations with your sibling. It doesn’t matter whether the conversations are face-to-face, on the phone, through text, through private Facebook messages, etc. Your answers to the items below should be based on how you typically feel about conversations with your sibling.

1 – Strongly disagree
2 – Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

___1. I am generally satisfied with the conversations.
___2. I do not enjoy the conversations. *
___3. I am generally dissatisfied with the conversations. *
___4. I would like to have other conversations like those that I generally have with my sibling.
___5. These conversations flow smoothly.

* Items reverse coded
Appendix J
Relationship Satisfaction Scale

Instructions: Please indicate the degree to which you agree or disagree with the following statements regarding your relationship with your sibling.

1 – Strongly disagree
2 – Disagree
3 – Neither agree nor disagree
4 – Agree
5 – Strongly agree

___1. We have a very satisfying relationship.
___2. We are very close to each other.
___3. Our relationship in NOT very stable. *
___4. Our relationship makes me happy.
___5. Our relationship is strong.
___6. Our relationship is very special and important to me.
___7. I trust my sibling completely.
___8. We have a good relationship.
___9. I feel like we have an equitable relationship.
___10. I do NOT really feel like a part of the team with my sibling.*

* Items reverse coded
Appendix K
Verbal Aggressiveness Behavior Inventory

This questionnaire is concerned with the types of messages you and your sibling use in any interpersonal communication setting: email, face-to-face, texting, twitter, private Facebook messages, telephone conversations, etc. When you communicate with your sibling, how often do you use each behavior below toward your sibling?

1 – Never
2 – Rarely
3 – Sometimes
4 – Often
5 – Very often

1. Character attacks: _____
2. Competence attacks: _____
3. Background attacks: _____
4. Physical appearance attacks: _____
5. Maledictions/talking bad about one another: _____
6. Teasing: _____
7. Ridicule: _____
8. Threats: _____
9. Swearing: _____
10. Nonverbal Emblems/eye-rolling, gestures: _____
Appendix L
Sibling Verbal Aggressiveness Behavior Inventory

This questionnaire is concerned with the types of messages you and your sibling use in any interpersonal communication setting: email, face-to-face, texting, twitter, private Facebook messages, telephone conversations, etc.. When you communicate with your sibling, how often does your sibling use each behavior below toward you?

1 – Never
2 – Rarely
3 – Sometimes
4 – Often
5 – Very often

1. Character attacks:        _____
2. Competence attacks:    _____
3. Background attacks:    _____
4. Physical appearance attacks:   _____
5. Maledictions/talking bad about one another: _____
6. Teasing:      _____
7. Ridicule:      _____
8. Threats:      _____
9. Swearing:      _____
10. Nonverbal Emblems/eye-rolling, gestures: _____
Appendix M
Demographic Measure

Instructions: Please answer the following questions about yourself, and the sibling who you just answered about in the previous questionnaire.

How old are you in years? _____

Are you male or female? _____

What is your ethnic/racial background?

_____ African
_____ African American
_____ Asian
_____ Caucasian
_____ Hispanic
_____ Middle Eastern
_____ Native American/Alaska Native
_____ Pacific Islander
_____ Other

Keeping the sibling that you just answered about in the previous questionnaire in mind, how old is your sibling in years? _____

Is your sibling male or female? _____

What is your sibling’s ethnic/racial background?

_____ African
_____ African American
_____ Asian
_____ Caucasian
_____ Hispanic
_____ Middle Eastern
_____ Native American/Alaska Native
_____ Pacific Islander
_____ Other
Appendix N
Correlation Matrix for Independent Variables

Summary of Intercorrelations for Scores on the Argumentativeness Scales and Verbal Aggressiveness Scales.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant ARG</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Perceived sibling ARG</td>
<td>.39**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Participant VA</td>
<td>.05</td>
<td>-.11*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>4. Perceived sibling VA</td>
<td>.09</td>
<td>-.02</td>
<td>.35**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note. N = 420. ARG = argumentativeness. VA = verbal aggressiveness. * p < .05. ** p < .01.
Appendix O
Correlation Matrix for Dependent Variables

Summary of Intercorrelations for Scores on the Physical Aggressiveness Scales and Relationship and Communication Satisfaction

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant PA</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived sibling PA</td>
<td>.46**</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
<td>Communication satisfaction</td>
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<td>-.26**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Relationship satisfaction.09</td>
<td>-.18**</td>
<td>-.26**</td>
<td>.69**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Note. N = 420. PA = physical aggressiveness. ** p < .01.*
References


