THE POWER OF OSTRACISM: CAN PERSONALITY INFLUENCE REACTIONS TO SOCIAL EXCLUSION?

by

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ABSTRACT

THE POWER OF OSTRACISM: CAN PERSONALITY

INFLUENCE REACTIONS TO

SOCIAL EXCLUSION?

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Ostracism, also labeled social exclusion, is seen by researchers and lay persons alike as one of the more socially painful events that is an inevitable part of life. Moreover, many theorists (e.g., Zadro, Williams, and Richardson, 2004) believe that no one is immune to the negative power of ostracism and that this sensitivity to ostracism is both primitive and adaptive. The primary focus of this dissertation was to examine how personality might moderate this sensitivity to social exclusion. In the first phase of the study, college students (N = 145) came to the laboratory in small groups to complete self-descriptions of their personality. Several days or weeks later, the participants came

back to the lab individually to play Cyberball, an online ball-tossing game in which they believed they were playing with other participants as part of a mental visualization task. In reality, the "other" participants were computerized confederates programmed by the researcher to simulate interpersonal ostracism. Participants were randomly assigned to be excluded or not excluded while playing Cyberball. After playing Cyberball, participants self-reported on their mood, threatened needs, dread of future interaction, and threat perception. Participants then interacted with a confederate blind to the experimental condition. Participants believed this confederate was one of the individuals with whom they had just played Cyberball. Results suggested some noteworthy qualifications about ostracism's general influence. First, need to belong (nBelong) moderated the influence of ostracism on threatened needs and changes in affect. Moreover, nBelong indirectly influenced face-to-face interactions via threatened self-esteem. Second, socially anxious participants reported more threatened needs, dread of future interactions, and threat perception after controlling for levels of exclusion. That is, the influence of social anxiety was *additive* to the influence of ostracism. Although social anxiety did not exacerbate the influence of ostracism, participants who had the worst outcomes were both excluded and socially anxious. Finally, securely attachment had an indirect influence on short-term reactions to exclusion. The results suggest that although no one was completely immune from the power of ostracism, certain aspects of personality may help to buffer against some of its influence.

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INTRODUCTION

1.1 General Overview of Social Exclusion

In 1890, William James, the founder of American psychology, wrote "If no one turned around when we entered, answered when we spoke, or minded what we did, but if every person we met 'cut us dead,' and acted as if we were non-existing things, a kind of rage and impotent despair would ere long well up in us, from which the cruelest bodily torture would be a relief; for these would make us feel that, however bad might be our plight, we had not sunk to such a depth as to be unworthy of attention at all" (pp. 293-294).

Although William James wrote this statement over 100 years ago, social ostracism (social exclusion), the phenomenon of being ignored or excluded by others, is still a ubiquitous and powerful phenomenon. Social exclusion is prevalent in most societies and cultures (Williams, 2001). For example, social exclusion can take place in many different social contexts, such as school (e.g., Asher & Parker, 1989; Crick, Casas, & Ku, 1999; Crick & Nelson, 2002), the workplace (e.g., Williams & Sommer, 1997), and within interpersonal relationships (e.g., Buss, Gnomes, Higgins, & Lauterbach, 1987; Gottman & Krokoff, 1992). Indeed, interpersonal rejection can be such a negative experience that most individuals actively strive to avoid being rejected

by others. Consequently, there is a strong desire in human nature to want to be accepted and to avoid being rejected (Kurzban & Leary, 2001). Ostracism (or exclusion) by others is a form of relational aggression. There are two major types of ostracism, physical and social ostracism, and both types have potentially different meanings to the target. For example, physical ostracism, the act of physically removing oneself, symbolizes permanent exit. The target of physical ostracism often infers that the source no longer wants to engage in any contact with the target and completely exits the situation, thus effectively cutting off all communications with the target. On the other hand, social ostracism symbolizes "social death"; that is, the source has not physically removed him/herself from the situation but rather ignores the target and therefore communicates, through nonverbal behaviors, that the target is inconsequential to him or her (Williams, 2001). In other words, the source is communicating to the target that he/she is invisible and has no influence. Consequently, social ostracism is considered by Williams (2001) to be the more negative of the two types of ostracism because during social ostracism the source is communicating to the target that he/she does not exist and that the target's existence is therefore meaningless.

Developmental researchers consider being ostracized as a form of victimization (e.g., Underwood, 2003). Victimization is defined as a relationship in which an individual is harassed and chronically abused by another person or group. The victimization experience could potentially lead to mistrust, insecurity, and fearfulness (Ladd, Kochenderfer, & Coleman, 1997). Recent research has shown that victimization can be the consequence of either or both of two types of aggression: overt (physical)

aggression and relational (or indirect) aggression (Crick & Grotpeter, 1995; Underwood, 2003). Ostracism, specifically social ostracism, is seen as an aspect of the larger system of relational victimization, which is aimed at harming an individual's relationships and reputation (Underwood, 2003). Crick, Casas, and Nelson (2002) have cited various social maladjustments related to relational victimization. For example, relational victimization has been linked to poor interpersonal relationships, internalizing problems (i.e., depression), and externalizing problems (i.e., delinquent behaviors).

Unfortunately, social ostracism is prevalent across different social contexts and different cultures. For example, in the Amish community, there is a term, *Meidung*, which means shunning which refers to an action aimed at disciplining members of the Amish faith (Gruter, 1986). *Meidung* refers to a period of time in which an individual is shunned by family, friends, and peers. If family, friends, and peers do not shun the target individual, as they are required to do, they also risk being shunned by others in the community.

Similarly, adolescents often engage in relational aggression such as social exclusion (Underwood, Scott, Galperin, Bjornstad, & Sexton, 2004). This type of aggression is primarily intended to destroy interpersonal relationships and status. Some researchers (e.g., Crick & Grotpeter, 1995, 1996; Crick & Zahn-Waxler, 2003) believe that girls engage mainly in relational aggression, whereas boys engage mainly in more overt forms of aggression (e.g., physical force). However, others (e.g., Underwood et al., 2004) contend that both boys and girls engage equally in relational aggression.

1.2 Social Exclusion and Threatened Needs

Two important empirical questions are why ostracism is so hurtful to individuals and why individuals try to avoid it. Research has found that both overt and relational victimization are equally harmful to children's adjustment (Waldrip, Malcolm, & Jensen-Campbell, 2006). That is, adolescents who report being overtly and/or relationally victimized tend to have poorer social adjustment than non-victimized adolescents. Similarly, Feshbach (1969) has stated that social exclusion or rejection is a painful event. Why should being excluded be as harmful as being physically abused?

A possible explanation for why physical and social pain are similarly harmful is that social pain and physical pain evolved to share the same underlying neural processing system that is linked to the affective experience of pain. Panskepp (1998) has proposed that the mammalian pain system evolved to include reactions to social pain to motivate/encourage mammals to limit social distance from others because closeness is paramount for survival. In other words, experiencing pain upon separation or rejection from others is adaptive for survival; it allows the individual to notice the separation or rejection, take it seriously, and attempt to remedy the situation.

Eisenberger and Lieberman (2005) and McDonald and Leary (2006) have recently proposed a new theory, Social Pain Overlap Theory, that views the pain of ostracism as one form of social pain. Social pain is defined as the pain and distress arising from the social distancing of others. This type of distress results from rejection, victimization, and/or exclusion. Researchers posit that the same neural mechanisms that are responsible for the emotional experience of physical pain are also responsible

for the emotional experience of social pain (Eisenberger, Lieberman, & Williams, 2003). Specifically, the anterior cingulate cortex or ACC is believed to be a neural alarm system that is activated in both physically and socially painful situations. Another explanation for why ostracism is so hurtful, one that does not necessarily contradict the social pain theory involves a threat to a basic evolved need to get along with others and be part of the group. An example of this explanation is Hogan's (1983) socioanalytic theory. It argues that our ancestors were those who possessed characteristics that would motivate them to get along with others in a group.

Consistent with this type of theorizing, Kurzban and Leary (2001) have argued that group living is conducive to potential fitness opportunities such as mating and parental investment. In addition, individuals who live in groups often receive benefits through cooperation to achieve mutual goals. Furthermore, Kurzban and Leary contended that our ancestors inherited cognitive adaptations that helped them to avoid poor social exchange partners and contact with individuals who might carry communicable diseases. Baumeister and Tice (1990) have similarly argued that being a part of an important group is essential for one's survival and that being excluded increases the possibility of experiencing anxiety. Therefore, individuals possess an innate motivation to avoid being excluded.

Baumeister and Leary (1995) have suggested that there is a fundamental need to belong, and that threats to this need, such as social ostracism (or exclusion), can lead to several problems, such as maladjustment and behavioral or psychological pathology. Assuming that the need to belong is indeed a fundamental motivation, it follows that

individuals will engage in behaviors that are aimed at satisfying this need to belong. That is, much of human behavior should be directed at forming relationships with others and increasing one's level of belongingness. Baumeister and Leary emphasize that the need to belong is more than just a need for affiliation or a need for attachment. Their belongingness hypothesis posits that the need to belong is universal and has an evolutionary basis. That is, the need to form and maintain social bonds have both survival and reproduction benefits (Buss, 1990, 1991; Hogan, Jones, & Cheek, 1985). For example, living in cooperative groups better ensured human survival because groups often provide protection and help.

Baumeister and Leary's (1995) theory of belongingness also posits that positive affect should result from forming positive, satisfying interpersonal relationships, whereas negative affect (i.e., anxiety and depression) should result when these social bonds are broken or threatened. Accordingly, individuals who are socially excluded have their fundamental need to belong threatened, which in turn, should lead them to experience negative affect, such as anxiety and depression.

Similarly, Williams's (1997) model of ostracism proposes four fundamental needs (i.e., belonging, self-esteem, control, meaningful existence) some or all of which may be threatened during episodes of ostracism. Indeed empirical evidence supports the notion that ostracism threatens belonging, self-esteem, control, and meaningful existence needs (Williams, 2001). For example, Williams and Sommer (1997) found that participants who were ostracized during a ball-tossing game attempted to regain a sense of belongingness by contributing more to a group task than participants who were

not ostracized. Similarly, Williams, Shore, and Grahe's (1998) research on social ostracism, specifically the silent treatment, demonstrated that individuals who were the target of the silent treatment reported threats to their meaningful existence. Specifically, they reported an increase in feelings of invisibility and not being worthy of attention when they received the silent treatment from others. In addition, social ostracism threatens feelings of control. That is, the target of social ostracism is deprived of control when the source continually ignores the target's attempts to communicate (Sommer, Williams, Ciarocco, & Baumeister, 2001).

1.3 Reactions to Social Exclusion

According to Williams's (1997) model of ostracism, reactions to exclusion can be divided into three main categories: immediate reactions, short-term reactions, and long-term reactions. Immediate reactions are short-lived and somewhat free of cognitive interpretation. However, immediate reactions can lead to short-term reactions. Short-term reactions to social exclusion can potentially compel the individual to repair the needs (i.e., belongingness, self-esteem, control, and meaningful existence) that were previously threatened. For example, individuals may attempt to regain control of the situation. The long-term effects of ostracism include depression, learned helplessness, and despair (Williams, 2001).

1.3.1 Immediate Reactions

Immediate reactions to being socially excluded include negative affect, hurt feelings, physiological arousal, and anxiety (Williams, 2001; Leary, 1990). The results of several studies (Williams, 2001; Leary, Koch, & Hechenbleiker, 2001; Zadro, Williams, & Richardson, 2004) have revealed that ostracized individuals often experience psychological discomfort, such as feeling angry, being in a bad mood, and experiencing anxiety, than included participants experience. Furthermore, Snapp and Leary (2001) found that participants who were rejected by a confederate reported feeling more sadness and less happy than included participants were.

In several experiments, Williams (2001) reported that the majority of ostracized participants experienced one of two initial behaviors to being socially excluded: disengagement or face saving behaviors. When a participant realized that the other "participants" were not going to throw them the ball, the rejected participants would disengage by slouching down in their seat and averting their eyes. When engaging in face-saving behaviors, the rejected participants would look through their wallet, read the material they came to the experiment with, or walk around the room. In other words, the participants were communicating to the other "participants" that it did not matter to them that they were being excluded. However, all participants' initial affective reactions were the same. Whether they engaged in disengagement or face-saving behaviors, they all reported experiencing negative affective states such as anger, anxiety, and hurt feelings.

1.3.2 Short-term Reactions

Following the experience of initial negative emotions, excluded individuals usually attempt to regain or repair the needs that were threatened, either by strengthening or establishing social bonds with others, making self-affirmations, taking control, or by maintaining cultural buffers (Williams, 1997). For example, some individuals whose self-esteem has been lowered by social exclusion may engage in self-affirmation to make themselves feel better. Other individuals may try to take control of the situation in order to regain control, whereas others may maintain that they were being socially excluded because of their ethnicity. When an individual can blame being socially excluded on a group membership rather than themselves specifically, they are better able to cope with being rejected (Williams, 2001).

Another short-term reaction to social exclusion is dreading continued interaction with the source of the ostracism. For example, Geller, Goodstein, Silver, and Sternberg (1974) found that ostracized participants disliked and tried to avoid the individual(s) who had ostracized them. Similarly, Williams (2001) found that ostracized participants preferred to work with a group of people who had not previously ostracized them. Thus, individuals who have been socially excluded should dread interacting with another person who has previously excluded them when compared to nonexcluded individuals. In addition, their interactions should be more forced and awkward compared to individuals who have not been socially excluded.

1.3.3 Long-Term Reactions

Some long-term reactions to social exclusion include self-imposed isolation, learned helplessness, low self-esteem, and despondency. For example, targets of long-term ostracism do not attempt to regain lost needs; rather, these individuals give up and internalize the loss of their needs. For example, loss of belonging may lead the individual to believe that they do not belong anywhere and therefore are worthless. In addition, a severe loss of self-esteem can lead to chronic low self-esteem, and a chronic loss of control can ultimately lead to learned helplessness. Similarly, a loss of the sense of meaningful existence leads individuals to question the worth of their existence (Williams, 2001). Additionally, long-term ostracism or rejection can lead to suicide and depression (Williams & Zadro, 2001). Finally, aggression can be a long-term reaction to social exclusion or chronic rejection (Leary, Kowalski, Smith, & Phillips, 2003). For example, children who are chronically rejected by their peers are more likely to aggress against others (i.e., school shootings).

1.4 Individual Differences in Reactions to Social Exclusion

Although there seems to be an innate and universal tendency for individuals to react negatively to being socially excluded (Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997), it is possible that some individuals may be adversely affected by only the most serious threats to their inclusion status, whereas other individuals may be hypersensitive to all threats, minor or major, to their inclusion status (Nezlek et al., 1997). The idea that social behavior is a product of how the individual and the situation interact with each other is not new to social psychology (Lewin, 1935). Kurt Lewin,

one of the founders of social psychology, posited that personality effects are part of a larger interdependent system of social behavior. Lewin's field theory states that the person's behavior is a function of the interaction between the person and the environment (B = f(P, E), Lewin, 1935). Thus, reactions to social exclusion are not solely the result of the situation (e.g., threatened needs) but depend on the interplay between individual differences (e.g., differences in need to belong) and the specific social-contextual forces surrounding the individual (Higgins & Parsons, 1983).

Although Williams's (1997) model of ostracism briefly addressed potentially important personality attributes (i.e., attachment styles) that may buffer one against the negative effects of being a target of ostracism, very few studies have empirically examined this possibility. Other studies have described the susceptibility to the influence of ostracism as primal and universal (Zadro, Williams, & Richardson, 2004). In other words, there is little evidence that some people may be more susceptible to the negative influences of ostracism than are other people. Several studies that have examined social exclusion have not found evidence for such effects (e.g., see Williams, 1997, 2001; Baumeister, Twenge, & Nuss, 2002). Note, however, that previous research has predominately focused on the immediate reactions to social exclusion. With respect to these immediate reactions, there is little evidence that personality moderates the effects of ostracism on reactions (Williams, 1997; Williams & Sommer, 1997; Zadro, Williams, & Richardson, 2004). Thus, a limitation of previous studies that have not found individual differences in reactions to social exclusion is that they have focused exclusively on the victims' immediate reactions to social exclusion (e.g.,

immediate mood after the exclusion episode). However, at least one recent study (Zadro, Boland, & Richardson, 2006) has produced evidence that some people are more adversely affected by ostracism than are others. In their seminal research, Zadro, Boland, and Richardson found that socially anxious individuals who experienced ostracism were more likely to have a heightened level of threat perception and anxiety for a longer period of time after the ostracism episode than less socially anxious people.

Other potentially important personality attributes, besides social anxiety, that have not yet been examined in the literature may at least partially buffer individuals against the negative effects of ostracism/social exclusion, for example secure attachment style. Moreover, although personality effects may be minimal in the immediate aftermath of the exclusion episode, such effects may be more evident as short-term or long-term consequences (e.g., heightened perceived threat, dread of future interactions, impaired subsequent interactions).

1.5 Overview of Need to Belong as an Individual Difference

An important individual difference in the manner of how one reacts to being socially excluded is the need to belong (nBelong). Baumeister and Leary (1995) define the nBelong as an individual's need to form and maintain strong affectively positive interactions with others. That is, individuals have evolved the need for frequent personal contact with other individuals and to perceive this contact in terms of stable long-term interpersonal bonds. In other words, individuals are motivated to interact with others and to form positive long-term social bonds. Since belonging is a fundamental need, if one does not form strong positive relationships, he/she could

experience adverse effects on his/her well-being, adjustment, and health. Therefore, the need to belong refers to the fundamental motivation to be accepted (Baumeister & Leary, 1995). For that reason, the need to belong often motivates individuals towards social acceptance and the avoidance of social rejection (Leary, 2001).

However, individuals vary on their need to belong (Leary, 1990). That is, some individuals crave it and are especially sensitive to situations that impede their belongingness with others. In other words, when individuals who are high in the need to belong (nBelong) experience social exclusion, they may experience greater negative affect, threatened needs (especially belongingness), and try to reconnect with others in order to regain their loss in belongingness (Baumeister & Leary, 1995).

1.6 Overview of Social Anxiety

Another important dimension that should be associated with differential reactions to social exclusion is social anxiety. Baumeister and Tice (1990) have put forth a social exclusion theory of anxiety, which argues that individuals experience anxiety because of the threat or actual breaking of social bonds. Leary (1990) elaborated on three important fundamental propositions in Baumeister and Tice's social exclusion theory of anxiety. First, individuals actively avoid being excluded from groups that are important to them. That is, people seek to maintain inclusion in important family, peer, work, and social groups, rather than indiscriminately seeking inclusion in all groups. Consequently, rejection from important social groups is hypothesized to lead to negative affective states (i.e., depression, anxiety).

Second, the majority of behaviors performed by an individual ultimately reflect attempts to improve his/her inclusionary status. In other words, individuals strive to act in ways that are acceptable to the group to avoid being excluded. Similarly, Baumeister and Tice (1990) suggested that individuals may be excluded from a group based on three reasons: (1) not contributing to the group, (2) violating group norms, and (3) possessing undesirable traits. As a result of these three reasons, individuals act in ways as to minimize their chances of being excluded by their group.

The third proposition states that negative affective states are the result of one's perception that their inclusionary status is less than desirable. That is, Leary (1990) views inclusionary-status as a continuum rather than an inclusion-exclusion dichotomy. For example, at one pole is maximal inclusion (i.e., others seek out the individual) and the opposite pole is maximal exclusion (i.e., others physically reject, exclude, or ostracize the individual). Viewing inclusionary-status as gradations, rather than as a dichotomy, allows researchers to better measure and analyze people's reactions to exclusion.

Similarly, Chorpita and Barlow (1998) view anxiety as an innate negative affective state that is the result of uncontrollability and unpredictability. Affective traits are stable predispositions in responding to situations, whereas states are more transient responses to the situation (Rosenberg, 1998). Also, states can be broken down into two groups: moods and emotions. Moods are transient states that are consistently changing throughout the day. Emotions are also transient states; however, emotions are

experienced as acute, intense, brief physiological changes that are the result of responding to a meaningful situation (Rosenberg, 1998).

Social anxiety is a common negative affective state that can result from being excluded from important groups (Leary, 1990) such as family, friends, peer, and work groups. Similarly, social anxiety can also be a trait, that is, a specific way in which an individual responds to environmental situations. For example, Schlenker and Leary (1982) believe that social anxiety is often the result of concerns for how an individual is perceived and evaluated by others. In other words, social anxiety is the result of anxiety over presenting the "right" image of oneself to others. Therefore, people strive to be seen in the best light possible and use different self-presentational strategies to achieve that goal. That is, high socially anxious individuals, according to Schlenker and Leary's (1982) model, tend to place a great deal of importance on making positive impressions and believe that it may be impossible to actually make those impressions, therefore leading to social anxiety.

According to previous research (Daly & McCroskey, 1984; Leary, 1983a), socially anxious individuals tend to limit their involvement with others in social interactions. Socially anxious individuals tend to disaffiliate themselves with situations in which they anticipate or expect to feel nervous in order to avoid anxiety (Leary, 1983a; Watson & Friend, 1969). However, when socially anxious individuals are not able to avoid a social situation, they tend to adopt a passive interaction style and participate less during interactions with others (Cheek & Buss, 1981; Glasgow & Arkowitz, 1975; Watson & Friend, 1969). That is, high socially anxious individuals are

less likely to initiate conversations, and they speak less frequently and for less duration when involved in social interactions.

In addition to a withdrawing from social situations, socially anxious individuals often employ a certain pattern of verbal responses or language behaviors that are exchanged between a communicator and a recipient during an interpersonal encounter. Specifically, they use patterns of verbal responses that are intended to minimize their participation in dyadic social interactions (Stiles, 1978). Socially anxious individuals typically utilize verbal styles that allow them to assume either a passive interactional style and/or to engage in impression management techniques in which they express a positive, safe image of themselves to others (Leary, Knight, & Johnson, 1987). For example, Leary, Knight, and Johnson (1987) demonstrated that high socially anxious individuals are particularly likely to use questions (a request for information such as "Who is your roommate?" "Who do you have for Intro to Psychology?") and acknowledgements (used to convey receipt of another's communication such as "Uh-huh," "Okay."), which require minimal participation. This pattern of usage is consistent with the view of socially anxious individuals as people who are trying to avoid in-depth, self-disclosing conversations with others while still maintaining a positive self-presentation.

Research on adult anxiety has shown that anxious adults are biased in their interpretation of environmental events (MacLeod, Mathews, & Tata, 1986). Specifically, highly anxious adults are more likely to interpret ambiguous situations as threatening (Butler & Mathews, 1983) than less anxious individuals are. Even inclusion

episodes that can be interpreted as somewhat ambiguous may lead to greater threat perceptions for individuals who are more socially anxious. Similarly, Barrett, Rapee, Dadds, and Ryan (1996) demonstrated that anxious children were more likely to interpret ambiguous scenarios as more threatening than non-anxious children. Thus, it is not surprising socially anxious individuals should react very negatively to social exclusion episodes. Indeed, compared to non-anxious individuals, they should see social exclusion episodes as more threatening and experience more anxiety after such episodes. Conversely, individuals who are socially anxious may experience a greater threat to their needs when the situation is ambiguous, such as when the situation involves some degree of inclusion (Zadro, Boland, & Richardson, 2006).

1.7 Overview of Adult Attachment

Finally, one's internal working model of attachment may affect how one reacts to a social exclusion episode. Ainsworth's studies (Ainsworth, Bell, and Stayton, 1971, 1974) of maternal care-giving indicate that there are two qualitatively distinct types of attachments in infancy: secure and insecure. Infants whose mother (or primary caregiver) is attentive and sensitive to the child's signals and needs tend to develop a secure attachment, whereas infants whose mother is insensitive to the child's signals and needs tend to develop insecure attachments.

These attachments styles persist in adulthood through the development of internal working models (Bowlby, 1988); the difference is that the adult is attached to an adult significant other rather than to their parent or caregiver. Internal working models are assumed to consist of two interrelated models: a model of the self and a

model of other. The self-model includes perceptions about the self such as one's worth, lovability, and competence, whereas the other model includes expectations such as the belief that significant others will be dependable and trustworthy. A secure attachment style consists of a positive view of self and others. Individuals with a secure attachment style view themselves as worthy and competent, while also viewing significant others as dependable and trustworthy (Bowlby, 1988). Individuals possessing a dismissive-insecure (i.e., avoidant) attachment style also view themselves as competent and worthy; however, these individuals have a negative view of others, which leads them to disregard important close relationships and to maintain rigid self-sufficiency. Individuals with a preoccupied-insecure (i.e., ambivalent) attachment style hold negative views of themselves, such as unworthiness and poor self-efficacy. At the same time, preoccupied individuals hold a positive view of others and are inclined to seek support from significant others when distressed (Bartholomew & Horowitz, 1991). Some researchers (e.g., Simpson, Rholes, Phillips, 1996) have noted that when using this two-dimensional self-other model, secure attachment is reflected in having low scores on both dimensions. In other words, secure attachment involves an absence of the problems associated with both the avoidant and the ambivalent orientations.

Secure attachment has been examined in relation to psychological well-being throughout the life span (Lopez et al., 1998; Mothersead, Kivlighan & Wynkoop, 1998; Rice, Cunningham & Young, 1997). One's attachment style is often implicated in the ways that individuals deal with stress, such as the stress of being socially excluded (Kemp & Neimeyer, 1999). For example, Kemp and Neimeyer reported that

individuals with secure attachment styles tend to experience less psychological distress than individuals with insecure attachment styles after experiencing a stressful life event. Several other studies (e.g., Mikulincer, Florian, & Weller, 1993; Simpson, Rholes, & Nelligan, 1992) have also examined the role of attachment styles and reactions to stress. The results of these studies suggest that a secure attachment style tends to buffer an individual against the negative effects of stress (Simpson et al., 1992). Based on previous research on attachment styles, one could hypothesize that individuals with a secure attachment style would be less aversely affected by social exclusion than would individuals who have more insecure attachment styles.

1.8 Limitations of Previous Work

As stated previously, very few studies (Fenigstein, 1979; Nezlek et al., 1997; Zadro, Boland, & Richardson, 2006) have examined individual differences in reactions to social exclusion. Furthermore, most of the available studies have focused on only the immediate effects of social exclusion (except Zadro, Boland, & Richardson, 2006). There, therefore, is a clear need to examine the influence of personality factors on individuals' susceptibility to social exclusion, to determine if there are certain personality factors that make some individuals relatively immune to the negative effects of social exclusion, while others are devastated by being excluded by others. In addition, researchers need to examine not only the immediate effects of social exclusion, but the immediate, short- and long-term effects as well.

1.9 Present Study

The present dissertation study sought to advance our knowledge of the processes associated with social exclusion in several theoretically, important ways. First, this study is one of the first to examine short-term reactions, as well as immediate reactions, to social exclusion. Specifically, I examined behaviors in an actual face-to-face interaction with a person the participant believed had just excluded/rejected them. Second, this study was one of the first to examine the influence of several personality traits on reactions to social exclusion. In other words, how personality differences moderate an individual's reaction to being socially excluded was a major focus of this dissertation. My preliminary theoretical model can be found in Figure 1. The model includes personality factors that might moderate immediate and short-term reactions to social exclusion[1]. The potential moderators included social anxiety (interaction anxiousness, fear of negative evaluation, and social distress), need to belong (nBelong), and adult attachment orientation (i.e., level of secure attachment).

The situational factors of exclusion versus inclusion were expected to interact with certain personality factors to produce reactions to being socially excluded. Thus, there were two experimental conditions: exclusion and not exclusion (or inclusion). Participants in the exclusion condition were excluded by three other "participants" during a Cyberball game (a computerized ball-tossing game), whereas participants in

[1] Data for the Big 5, Rejection Sensitivity, and Social Orientation were also collected; however, there was no consistent pattern of results for these dimensions. For ease of exposition, these personality variables are not considered here.

the inclusion condition were accepted rather than excluded by the other "participants" during Cyberball.

My first set of hypotheses addressed situation main effect hypotheses and can be regarded as replications and extensions of previous work. First, I expected that individuals who are socially excluded will report greater threatened needs (i.e., belongingness, meaningful existence, self-esteem, and control) than individuals in the inclusion condition. Second, individuals who are excluded should have more negative reactions (both immediate and short-term) to social exclusion than individuals in the inclusion condition. For example, socially excluded participants should speak less (i.e., engage in more passive conversational styles), show less positive affect, and orient their bodies away from the confederate more than persons who were included during their face-to-face interaction. I further hypothesized that excluded participants would engage in more verbal responses that would allow them to employ a passive conversational style. For example, excluded participants were expected to use Questions (i.e., "Who is your Intro to Psychology professor?") and Acknowledgments (i.e., "Okay") more often than included participants. I also predicted that participants who were excluded would rate the interaction as more negative than included participants.

Finally, I examined whether the influence of ostracism is at least partially mediated by threatened needs. Previous research on social exclusion has not examined subsequent face-to-face interaction in a controlled laboratory setting after social exclusion has occurred. Although researchers (Williams, 1997; Williams & Zadro, 2001) have speculated that threatened needs influence short-term reactions, there is little

empirical evidence that has specifically examined the indirect influence of ostracism to face-to-face interactions (via threatened needs). Therefore, this study will be the first to examine the behaviors of individuals during an interaction soon after being socially excluded and how threatened needs may mediate this association.

My second set of hypotheses addressed personality/individual difference main effects. First, I expected that personality should influence reactions to social exclusion. For example, personality would influence negative reactions during the face-to-face interaction. Specifically, I hypothesized that socially anxious persons might experience more dread of future interactions and less harmonious future interactions compared to persons lower in social anxiety. In addition, individuals who were socially anxious were expected to engage in behaviors that disaffiliate themselves from others. That is, these individuals were hypothesized to be less likely to initiate a conversation, bit more likely to orient their bodies away from the confederate, ask questions and use more acknowledgements, and to display less positive affect than individuals who were not socially anxious. Conversely, persons who have a secure working model of self-other, should have less negative reactions during the face-to-face interactions.

My third set of hypotheses addressed moderator hypotheses and about how personality variables influence reactions to being socially excluded. Specifically, I expected that nBelong and social anxiety (i.e., fear of negative evaluation, social distress, and interaction anxiousness) would amplify threatened needs, immediate reactions and short-term reactions to social exclusion. Conversely, secure attachment styles should buffer against the negative influence of ostracism. In other words, secure

working models should attenuate the link between social exclusion and threatened needs, immediate, and short-term reactions to social exclusion. Finally, in a further exploration of the data, I also examined whether personality had an indirect influence on the susceptibility to ostracism. For this study, I did not examine long-term reactions to social exclusion.

I specifically expected that fear of negative evaluation, social distress, and interaction anxiousness would amplify negative affect after social exclusion condition compared to the inclusion condition. In addition, persons who scored higher on these dimensions were expected to show a greater dread of future interaction as well as more tension and less harmony in their subsequent face to face-to-face interactions with the perpetuator of a prior exclusion episode. Specifically, individuals who were socially anxious and socially excluded were expected to engage in more behaviors that would disaffiliate themselves from their interaction partner, that is, orient their bodies away from the confederate and to show less positive affect than individuals who were not socially anxious.

Second, I anticipated that excluded individuals who were high in nBelong would experience more negative affect than individuals who were lower in nBelong. However, individuals who were higher in nBelong were not expected to dread future interactions. In contrast to the socially anxious individuals, individuals with a high nBelong should engage in more face-to-face behaviors (i.e., maintaining eye contact, orientating their bodies towards their partner, displaying positive affect) that were

aimed at reconnecting with their interaction partner given their strong need to affiliate with others.

Finally, I expected that individuals with higher levels of secure attachment would be less anxious and concerned about being socially excluded than would individuals who score low on attachment security. I further hypothesized that individuals with greater attachment security would be more inclined to engage in behaviors aimed at establishing a social bond with the confederate during the face-to-face interaction. In other words, individuals with greater attachment security would display more positive affect, speak more, and have more harmonious and less awkward interactions than individuals who were lower on this dimension.

In sum, with respect to the potential personality predictors, this study took an exploratory approach rather than focusing exclusively on one personality dimension. The purpose of this aspect of the research was to conduct basic, foundational work upon which future research could be built. In its other aspects, this study specifically addressed theoretical issues related to individual differences in reactions to social exclusion. In addition, the study was designed to build basic empirical bridges among personality, ostracism, threatened needs, and immediate and short-term reactions to social exclusion. Very little empirical work to date has found a moderating influence of personality on reactions to social exclusion. Thus, focusing exclusively on one personality attribute would increase the risk of finding null results when personality may indeed influence reactions to social exclusion in important ways. I hoped that by casting a larger nomological net (Campbell & Fiske, 1959), this study would be a

springboard for future programmatic research that further examines personality differences to reactions in social exclusion.

CHAPTER 2

METHODS

2.1 Participants

A total of 145 (90 women and 55 men) undergraduates from the University of Texas at Arlington participated in this study for partial fulfillment of their research requirements or to receive extra credit in their upper-level psychology classes. The sample included participants from European-American (52.4%), African-American (22.1%), Hispanic-American (6.2%), Asian-American (15.2%), or other ethnicity backgrounds (4.1%). The average age for this sample was 24.02 (SD = 8.00; range 18-63). Of the 145 participants, 139 completed the dyadic interaction (see Appendix C). One participant requested that her tape be destroyed, but completed all self-report data (i.e., missing behavioral observations only); one participant left early; five participants had no confederate available at the time of the dyadic interaction.

2.2 Personality Measures

2.2.1 Adult Attachment Style

All participants completed the Adult Attachment Questionnaire (Simpson, Rholes, & Nelligan, 1992; AAQ) during phase I. The AAQ is composed of 17 items and is used to measure two attachment dimensions: level of avoidance (i.e., “I don’t

like people getting too close to me") and level of ambivalence ("I often want to merge completely with others, and this desire sometimes scares them away"). The participants rated each item from1 (*I strongly disagree)* to 7 *(I strongly agree).* A combined score on both dimensions measures overall attachment insecurity with lower scores representing greater attachment. For ease of exposition, scores were reverse-scored so higher scores symbolized greater levels of secure attachment. The level of secure attachment could range from 17 (insecurity) to 119 (security). See Table 1 for actual scores and reliabilities[2].

2.2.2 Need to Belong (nBelong)

To assess individual differences in nBelong, participants completed the Need to Belong scale (Leary, Kelly, Cottrell, & Schreindorfer, 2005; NTB) during phase I. The NTB is composed of 10 items (i.e., "I try hard not to do things that will make other people avoid or reject me"). The participants rated each item from 1 (*not at all)* to 5 (*extremely).* Higher scores represented higher levels of nBelong; scores could range from 10 to 50.

2.3 Social Anxiety Measures

2.3.1 Social Anxiety Scale

A modified version of La Greca, Dandes, Wick, Shaw, and Stone's (1988) Social Anxiety Scale for Children (SASC) was used to assess social anxiety in adults. Participants were asked to respond to each statement by using a 3-point scale,

[2]Supplementary analyses were run separately for the ambivalent and avoidant attachment subscales; both produced similar results and were collapsed to create a secure attachment dimension.

ranging from 0 (*never true)* to 2 (*always true)* during phase I. The SASC measured *Fear of Negative Evaluation* (i.e., "I worry about what other people think of me") and *Social Distress* (i.e., "I get nervous when I talk to new people"). The validity and test-retest reliability of the original scale has been established in prior research (La Greca et al., 1988). See Table 1 for reliabilities and other descriptive statistics.

2.3.2 Interaction Anxiousness Scale

To assess social anxiety, specifically interaction anxiety, participants completed Leary's (1983b) Interaction Anxiousness Scale (IAS) during phase I. It contains 15 items (i.e., "I usually feel uncomfortable when I am in a group of people I don't know") which are rated using a 5-point scale ranging from 1 (*not at all characteristic of me)* to 5 (*extremely characteristic of me).* Refer to Table 1 for reliability and descriptive statistics.

2.4 Experimental Self-Report Measures

2.4.1 Mood Questionnaire

Participants completed an emotion assessment questionnaire (EAQ) twice during phase two of the study. Specifically, participants completed the emotional assessment questionnaire (EAQ) right before and right after playing Cyberball. Participants responded to 24 mood words by using a response format of 1 (*very slightly or not at all*) to 5 (*extremely*). For both the baseline and the post measures of emotions, I added the positive affect words together to form a composite positive affect subscale. I also combined the negative words to form a composite negative affect subscale (see Tables 1 and 2).

After the positive and negative affect subscale scores were computed, I computed the change scores for both positive and negative affect. For example, the change score for negative affect was computed by regressing the standardized post EAQ negative affect onto the standardized baseline negative affect scores (Appelbaum & McCall, 1983). Many researchers tend only to calculate the simple gain, for example subtracting a pretest from a posttest, to measure change, and then compare the gain score with other variables of interest. However, are problematic because they are systematically related to random error of measurement (Cronbach & Furby, 1970). For that reason, I used a more appropriate technique to study change by regressing the pre- score onto the post score (Appelbaum & McCall, 1983). The residual affect change scores were then used as a dependent measure for all analyses.

2.4.2 Threatened Needs Scale

Two versions of the threatened needs scale were administered, and the scores on these measures served as manipulation check measures. In version 1, participants rated the extent to which they felt rejected by the other Cyberball participants using a scale ranging from 1 *(rejected)* to 10 *(accepted).* Therefore, lower scores for this question indicated that the participant felt excluded. Participants also responded to several related questions, using a 9-point scale ranging from 1 *(strongly disagree)* to 9 *(strongly agree)* that assessed the extent to which the participants' needs (i.e., belongingness, control, self-esteem, and meaningful existence) were threatened.

Version 2 consisted of four subscales (belongingness, control, meaningful existence, and self-esteem) that assessed threatened needs. Participants first reported how accepted they felt during the game using a 9 point scale, 1 (*rejected)* to 9 (*accepted).* Next, participants used a 5-point scale, ranging from 1 (*not at all)* to 5 (*extremely),* to assess the four threatened needs (see Table 2). In addition to the Cyberball items for threatened needs, this scale included several questions that assessed the participants' mood states after playing the Cyberball game (e.g., unfriendliness, anger, sadness, and distress). However, I did not use these individual items because my composite affect change scores provided more reliable assessments of overall mood.

The correlations between the two threatened needs scales were high for all the threatened needs (threatened belongingness, $r = .95$, $p < .001$, threatened control, $r = .83$, $p < .001$, threatened meaningful existence, $r = .88$, $p < .001$, and threatened self-esteem, $r = .79$, $p < .001$. Accordingly, I z transformed the data for each scale and averaged the z-scores together to create an overall score for each of the four threatened needs (i.e., belongingness, control, meaningful existence, and self-esteem). These averaged scores were then used as the dependent variable in the relevant analyses.

2.4.3 Threat Perception Task

To assess an individual's perception of threat after playing Cyberball, the participants responded to written descriptions of 11 ambiguous situations (i.e., "On the way to UTA, you feel a strange churning in your stomach") in which each

situation had three explanations, two neutral and one socially/physically threatening (i.e., "You are not particularly fit at the moment and must have been walking too fast"—neutral; "There might be something seriously wrong with you that will require medical intervention"—socially/physically threatening; and "You ate breakfast too quickly and are suffering from indigestion"—neutral; modified from Barrett, Rapee, Dadds, & Ryan, 1996). Previous research has demonstrated that social anxiety involves generalized threat perception, including both physical and social threat (Matthews & MacLeod, 1985; Vassilopoulous, 2005). Therefore, the social and physical items were combined on the threat perception task to form an overall threat perception score.

Participants were asked to visualize themselves in each situation and then to rate the likelihood of each explanation on a scale ranging from 0 (*not at all likely*) to 100 (*extremely likely*). The possible range for the threat perception variable could range from 0 to 1100. Refer to Table 2 for descriptive statistics and reliability. Previous research (e.g., Zadro, Boland, & Richardson, 2006; Shortt, Barrett, Dadds, & Fox, 2001; Barrett, Rapee, Dadds, & Ryan, 1996) has shown that the ambiguous stories scale has been used successfully to assess threat perception. For example, Shortt et al. (2001) found that anxious children were more likely to interpret the ambiguous stories as threatening than non-anxious children did. In addition, Zadro, Boland, and Richardson (2006) found that high anxious participants who were ostracized perceived more threat than non-anxious participants who were ostracized.

2.4.4 Dread of Future Interactions Scale

The dread of future interaction scale was created for this study and was used to assess participants' level of fear of future interaction with one of the other "supposed" participants. The scale was composed of twelve items (i.e., "I think the interaction with the other participant will be awkward and uncomfortable"), and respondents responded to each statement using a 5-point scale ranging from 1 *(strongly disagree)* to 5 *(strongly agree)*. See Table 2 for descriptive statistics and reliability.

2.4.5 Post-Interaction Perception Questionnaire

Participants and confederates both completed a post-interaction perception questionnaire (Ickes, 1993) that required the interaction partners to think about their 6-minute interaction and rate their own perceptions and feelings of the interaction. In particular, each participant rated the interaction in terms of how comfortable or awkward it seemed, how smooth the interaction was, how well their interaction partner understood them, and to what extent that they either felt put down and rejected, or accepted and respected by their interaction partner using a 39-item scale.

A factor analysis was performed on this measure and two main factors emerged: perceived interaction quality and dislike of partner/interaction (see Appendix A). The relevant items were then averaged to create 2 main composites. For example, items concerned with enjoying the interaction (i.e., "To what degree did the interaction seem smooth, natural, and relaxed to you?") were combined to form the perceived interaction quality composite. Perceived interaction quality

accounted for 28.12% of the variance. Similarly, items indicating a negative reaction to the partner (i.e., "To what extent did you feel put down, patronized, or annoyed during the interaction?") were combined to form an overall index of partner dislike. Partner dislike variance accounted for 11.85% of the variance. The reliabilities for the composites were high, .86 and .83 for perceived interaction quality and partner dislike, respectively. The item "How much did you feel the need to communicate with the other person?" did not load on either of the main factors, but was examined separately because it assessed a person's desire to re-connect with others after exclusion and overall anxiety/self-consciousness[3].

2.4.6 Cyberball (the Program)

Cyberball (version 2), developed by Kipling Williams (2004), is a computer program that allows the researcher to create interactive ball tossing scenarios. The Cyberball program has been used successfully in previous research to induce feelings of being included versus excluded ostracism (e.g., Williams, Cheung, & Choi, 2000; Zadro, Williams, & Richardson, 2004; Eisenberger, Lieberman, & Williams, 2003). During this ball tossing game, the participant played with three other "participants" via the Internet. However, the other participants were actually computerized confederates. The Cyberball program allows the researcher to control the behaviors (i.e., the ball tossing) of the other "participants" through various

[3] Some items were dropped from the final analyses because they did not load on either factor. Moreover, they were also not systematically associated with either ostracism or the various personality measures.

schedules. This feature enables one to determine when the confederates would exclude or include the actual participant. For example, in the exclusion condition, I scheduled the computerized confederates to throw the ball to the participant for two trials; after those two trials, the confederates did not throw the ball to the participant, creating an experience of exclusion for the participant. In the inclusion condition, participants received the ball 25 percent of the time during the entire game. That is, the participants and Cyberball confederates each received the ball an equal number of times throughout the entire game. In the present study, the pictures of the computerized confederates corresponded to the confederates that subsequently participated in the unstructured interaction. However, the confederates were kept "blind" to the inclusion/exclusion manipulation and did not know the condition to which the participant was assigned (i.e., inclusion or exclusion). In addition, several the confederates' pictures were ambiguous with respect to ethnicity so participants could not simply dismiss the exclusion as being race-based.

2.5 Behaviors during the Interaction

All confederates were told to maintain a consistent neutral manner with all participants (see Appendix B for more details). Confederates were instructed not to offer any prompts or ask any questions unless reciprocating the participants' previously asked question or unless there was a pause in the conversation for longer than 30-seconds in the beginning of the interaction or a 20- second pause during the remaining portion of the 6-minute interaction. In addition, both confederate and participant were instructed not to discuss the first part of the experiment (i.e.,

Cyberball). If the participant did not start a conversation, the confederates were instructed to begin a conversation, after 30-seconds, with the question "What do you think she will make us do next?"

To ensure that the confederates were blind to conditions, they were asked to guess the condition of their interaction partner. Confederates could not consistently identify their interaction partner's condition (χ^2 (1) = .75). However, the MANOVA for confederates' behaviors was significant for condition, $F(6,101) = 2.33$, $\eta^2 = .12$, indicating that some behaviors (e.g., eye contact) were significantly different between conditions. In addition, there was a significant difference in gender for confederates' behaviors, $F(6,101) = 7.53$, $\eta^2 = .31$, indicating that women and men confederates engaged in different types of behaviors (e.g., smiling/laughter, and pauses in conversation). There was no difference between conditions for confederate's body orientation, talking with hands, and pauses in conversation, $Fs(1,110) = 2.30, 2.46, .54$, respectively. There was a significant difference between conditions for frequency of eye contact, $F(1,109) = 3.64$, $\eta^2 = .03$, $p = .06$. The confederates who interacted with included participants engaged in more eye contact ($M = 28.21$, $SD = 7.68$) than did the confederates who interacted with excluded participants ($M = 25.44$, $SD = 8.03$). In addition, female confederates interacting with female participants smiled and laughed ($M = 10.97$, $SD = 8.42$) more than did male confederates interacting with male participants ($M = 4.96$, $SD = 4.21$), $F(1,108) = 19.39$, $\eta^2 = .15$. Male confederates tended to pause more frequently ($M = 7.89$, $SD = 3.23$) than did female confederates ($M = 5.46$, $SD = 3.47$), $F(1,109) = 14.82$,

$\eta^2 = .12$. However, the MANOVAs for observer ratings of the dyadic climate and for the confederates' linguistic analysis were not significant, *Fs* = 1.43, .73, *n.s.*, for climate and linguistic analysis, respectively. In addition, there was no difference between the inclusion/exclusion conditions for the post-interaction perception indexes, $F(3,128) = 2.08$, *n.s.*

2.6 Procedures

The study was conducted in two experimental sessions. During the first session, the participants consented to participate and then completed a series of paper-and-pencil measures that assessed individual differences believed to be associated with reactions to ostracism in large groups. They reported demographic information and also completed the SASC, IAS, NTB and AAQ (See Appendix C). Other measures of personality and self-reported behavior were collected during the same session as part of a larger study, but these measures will not be discussed here.

The first session lasted approximately 1 hour. Participants who agreed to participate in the second session had their photo taken during the first session. The photo was used as part of the cover story for playing Cyberball. Specifically, the actual participant saw photos of three other "participants" playing Cyberball. They were led to assume that the other participants would see their photo as well. There was a photo of the other supposed participants on the participant's computer screen, each with a different participant number. To help ensure that the participants believed that they were playing Cyberball with other participants, they were told that

the other participants would see their photo on the computer screen the same way that they could see the other participants' photo on the screen of their computer.

During Phase II (the second session), the participants were brought back individually to the lab. They completed an additional consent form and were then seated behind a screen in front of a computer where they would be playing the Cyberball game with three supposed other same-sex participants. Participants played with same-sex confederates in order to avoid confounding the inclusion/exclusion manipulation with the gender of the other "participants."

Participants were randomly assigned to participate in one of two conditions: social inclusion or social exclusion (Refer to Appendix D). The inclusion condition was the control condition in which the other supposed players did not exclude the participants involved, whereas the social exclusion condition was the experimental condition in which the other players excluded the participants from playing Cyberball. The participants were told that I was studying individual differences in mental visualization on task performance both via the computer and during face-to-face interactions. They were further told that there were three other participants who would also be playing the Cyberball game with them via the Internet. Before the participants played Cyberball, they were required to complete the baseline EAQ questionnaire. Once the participants had completed the baseline EAQ, they then viewed the directions to Cyberball on their computer screen. The Experimenter read the directions to each participant as he/she followed along.

The directions were as follows:

> In the upcoming experiment, we test the effects of practicing mental visualization on task performance. Thus, we need you to practice your mental visualization skills. We have found that the best way to do this is to have you play an on-line ball tossing game with other participants who are logged on at the same time.
>
> In a few moments, you will be playing a ball tossing game with other students over our network. The game is very simple. When the ball is tossed to you, simply click on the name of the player you want to throw it to. When the game is over, the experimenter will give you additional instructions.
>
> What is important is not your ball tossing performance, but that you ***MENTALLY VISUALIZE*** the entire experience. Imagine what the others look like. What sort of people are they? Where are you playing? Is it warm and sunny or cold and rainy? Create in your mind a complete mental picture of what might be going on if you were playing this game in real life. (Williams, 2004)

After reading these directions to the participant, the Experimenter asked if the participant understood the directions. She then asked the participant to tell her what he/she was supposed to do during the task. Once all participants had indicated that they understand the directions, they began playing the Cyberball game. Immediately after they finished the "game," they were asked to complete the Cyberball (version 1 and version 2) questionnaires and the post EAQ Questionnaire. The Cyberball questionnaires served as manipulation check measures to enable me to determine if the excluded participants really felt excluded by the other "participants" and, conversely, that the included participants really felt included by the other "participants."

After filling out the Cyberball and the EAQ questionnaires, the participants were told that they would interact with one of the other participants in a face-to-face task in the next part of the study. They were asked to choose which one of the other

three participants they would like to interact with. The experimenter gave the participants approximately 10 seconds to complete the interaction partner preference form. The participants were then asked to complete the threat perception task while the experimenter left the room for approximately 12 minutes to prepare the next part of the experiment.

After the participants completed the questionnaires, they were given feedback on whether the other "participants" chose to interact with them or not. Participants in the inclusion condition were told, "All of the other participants chose you. However, since all participants need an interaction partner, I have decided to randomly assign partners instead of letting participants choose partners. You will be randomly assigned to interact with participant 3." In the exclusion condition, participants were told, "I'm sorry, but you were not chosen by any of the other participants. However, since all participants need an interaction partner, I have decided to randomly assign partners instead of letting participants choose partners. You will be randomly assigned to interact with participant 3." This feedback was created to further strengthen the inclusion/exclusion manipulation. The participants then completed the dread of future interaction questionnaire before proceeding on to the next part of the experiment (the dyadic interaction).

As stated previously, the other "participant" was a trained confederate who was blind to the participants' condition. As a check on their "blindness," all confederates were asked to guess the condition of their interaction partner after the 6-minute dyadic interaction. All participants were told not to discuss the experiment

with the other participant during the face-to-face interaction task. The participant was then escorted into another room where a 6-minute unstructured dyadic interaction (Ickes, 1982, 1983, 1993; Ickes, Robertson, Tooke, & Teng, 1986; Ickes, Bissonnette, Garcia, & Stinson, 1990) took place with a same-sex confederate.

Before the participant was brought into the lab for the 6-minute dyadic interaction, I activated the equipment to unobtrusively video- and audiotape the interaction. Once the equipment had been activated, the confederate was brought into the room and took a seat on the right side of the couch. The participant was then brought into the room and asked to take a seat next to the "other" participant on the couch. As a control precaution, the participants were always seated on the left side of the couch. After I seated the participant next to the confederate, I explained to the participant and confederate that they would be viewing different colors and would rate each color's brightness on a scale of 1 to5, 5 being the brightest. I then went to turn on the projector and a flash of light appeared. I then acted as if I the light bulb had just "burned" out and I left the room for exactly six minutes. If the participant did not start a conversation with the confederate after 30 seconds, the confederate tried to begin a conversation by saying "What do you think she will have us do next?" All confederates were trained as to how to begin the conversation. However, the direction of the conversation was up to the participant. The interaction was unobtrusively videotaped for the subsequent coding of certain behaviors such as body orientation, positive affect (i.e., smiling and laughter), who initiated the conversation, eye contact, fidgeting, talking with hands, frequency of

pauses during the interaction, and specific verbal behaviors (i.e., questions and acknowledgments).

The participant was not aware of the videotaping until after the 6-minute interaction to ensure that he/she acted as naturally and unselfconsciously as possible. At the end of the 6-minute interaction period, I returned to the room and conducted a partial debriefing. Specifically, I told the participants that they had been video- and audio-taped, so that I could study their naturally occurring interaction behaviors. Both the participant and the confederate were then asked to complete a videotaping consent form. This consent form provided three options: (1) they could decline to participate any further and have the tape of their interaction immediately erased, (2) the videotape could be used for data analysis only, or (3) the videotape could be used for future research and training as well as for data analysis. The confederates were told to wait until the participant had made a choice before they completed the form so that the confederate would be unlikely to influence the participant's choice.

After the interaction, both the participant and the confederate were separated and the participant completed the post-interaction perception questionnaire (Ickes, 1993). I fully debriefed the participant about the actual purpose of the experiment (refer to Appendix E for complete debriefing procedures).

2.7 Coding of Behavior Measures

Trained raters, who were blind to participants' condition, coded the 6-minute interaction between the participant and the confederate for expressions of positive affect (i.e., smiling/laughing), talking with hands, body orientation (i.e., the degree to which the participants' body was positioned away from the confederate), eye contact, number of pauses, and fidgeting. The total frequencies for each behavior were computed[4]. Behaviors such as smiling/laughter, orientating one's body toward rather than away from the confederate, and maintaining eye contact should be associated with positive affect and/or trying to repair the bonds or needs that were threatened during the Cyberball game. Conversely, fidgeting and larger number of pauses should be associated with relationship tension or disengagement. I chose these nonverbal behaviors because they have been studied as indices of interactional involvement in previous research (e.g., Garcia, Stinson, Ickes, Bissonnette, & Briggs, 1991; Jensen-Campbell, Workman, Adams, & Malcolm, 2004).

Following previously used standards in observational coding, rater agreement for nonverbal behaviors was estimated with Cronbach's alpha between two individual judges for 20% of the participants (see Graziano, Jensen-Campbell, & Hair, 1996; Jensen-Campbell, Workman, Adams, & Malcolm, 2003). Agreement between the judges for the five nonverbal behaviors ranged from .72 (awkwardness)

[4] Duration was also examined in supplementary analyses. Findings for the duration measures were either redundant or nonsignificant, and were therefore dropped from the current paper.

to 1.00 (body orienting away from confederate), the average being .89 (refer to Table 3.3 for reliabilities).

Williams (1997) has observed that individuals who have been socially excluded tend to engage in behaviors that are aimed at strengthening bonds and making (or reestablishing) connections with others when their need for belongingness was threatened. Therefore, I also analyzed behaviors that represented attempts to make a connection and/or strengthen the bond with the other "participant." For example, the participant behaviors such as initiating the conversation, displaying positive affect (i.e., smiling and laughing), and making eye contact throughout the interaction would all represent attempts to establish and/or strengthen the bond with the other participant.

Raters then rated the overall dyadic climate. For example, raters reported their global perceptions of how much tension, harmony, relaxed/smooth, and awkwardness there was in each 6-minute interaction. These subjective ratings were all dyad-level variables that assessed dyad climate. For each variable, the raters rated the interaction from 1 (not at all/little) to 5 (lots/ very much). Their individual ratings were then averaged to create global measures of rated tension (i.e., tension, harmony (reverse-coded), $\alpha = .76$) and awkwardness (i.e., awkwardness, smooth (reverse-coded), $\alpha = .89$). Trained raters also gave their global perceptions of how much negative affect and positive affect (smiling/laughter) there was in the interaction dyad, on a scale from 1 (none) to 5 (lots).

2.8 Linguistic Word Analysis

The Linguistic Inquiry and Word Count (LIWC2001; Pennebaker, Francis, & Booth, 2003) was used to determine the number of words spoken and the percentage of positive and negative emotion words expressed during the face-to-face interactions. In addition, LIWC2001 determined the number of questions and acknowledgements that occurred during each interaction. According to Leary, Knight, and Johnson (1987), questions and acknowledgments are closely related to social anxiety. That is, socially anxious individuals prefer to use verbal response modes (e.g., questions and acknowledgments) that tend to disaffiliate them from the interaction. Trained coders transcribed the tapes for all dyadic interactions and then split the transcriptions into two main files (i.e., participant and confederate) files. The participant and confederate files were then put into text files for the LIWC2001 program. The specific linguistic variables that were analyzed in the present study were number of words spoken (i.e., word count), the number of questions asked, the use of 1st person singular or I words (e.g., I, my, me), 1st person plural or We words (e.g., we, our, us), 2nd person words (e.g., you, you'll), the number of negations (e.g., no, never, not), the number of acknowledgements (e.g., yes, OK, mmhmm), the number of positive emotion words (e.g., happy, good), the number of negative emotions (e.g., hate, worthless, enemy) and the number of words associated with social processes (e.g., talk, us, friend).

CHAPTER 3

RESULTS

3.1 Overview

First, the internal consistencies (i.e., Cronbach's alpha coefficients) of all paper-and-pencil measures and manipulation check measures were computed. Second, correlations among the personality measures and the various dependent measures were computed. Follow-up analyses were then conducted to examine the contribution of personality to threatened needs and reactions to social exclusion. I expected that certain personality variables would moderate the link between social exclusion and threatened needs. I also expected that personality would moderate the link between the social exclusion manipulation and the participants' short-term reactions to social exclusion.

To test my main hypotheses, I began with MANOVAs to assess the situational influence of ostracism while controlling for Type I error rates. Iterative sets of regression analyses were then conducted to examine personality's influence while controlling for the sex of the participant and situational influences, using a personality (e.g., social anxiety) X 2 (sex of participant) X 2 (type of situation: inclusion v. exclusion) general linear model. More specifically, I used multiple

moderated regression analyses, as outlined by Aiken and West (1991) and Cohen, Cohen, and West (2003). All personality variables were treated as continuous variables. Unweighted effects coding was used for the categorical variables (i.e., sex of participant and type of situation, Aiken & West, 1991, pp. 129-130). Post hoc analyses were conducted following procedures outlined by Aiken and West (1991) and Cohen et al. (2003).

Previous research in the area of social exclusion has not found any sex differences. However, since the present study included both men and women and the participants interacted with a same-sex confederate, sex of participant was entered into the regression equation. Unless otherwise stated, all reported p-values are less than .05.

3.2 Internal Consistencies for Pencil-and-Paper Measures

First, the internal consistencies and descriptive statistics of all measures (i.e., self-report measures, behavioral measures) were computed and examined. Overall, there was no restriction of range problems (see Tables 3.1 and 3.2). Possible and actual ranges were virtually identical. Furthermore, the inter-rater reliabilities for all of the nonverbal behaviors were acceptable (see Table 3.3).

Table 3.1 Descriptive Statistics for Personality Variables

Personality Measures	Condition	Mean	Standard Deviation	Skewness	Possible Range	Actual Range	Alphas
Anxiety Measures							
Fear of Negative Evaluation	Exclusion	10.34	2.79	.39	0-18	4-17	.84
	Not Exclusion	10.68	2.26	.58	0-18	6-18	
Social Distress	Exclusion	6.94	1.49	-.22	0-12	3-10	.74
	Not Exclusion	7.32	1.38	.09	0-12	4-10	
Interaction Anxiousness	Exclusion	40.01	11.49	.23	15-75	17-66	.90
	Not Exclusion	41.09	10.72	-.25	15-75	15-61	
Attachment Style Variable (ASQ)							
Secure	Exclusion	62.43	12.53	.03	17-119	35-96	.74
	Not Exclusion	60.50	13.88	-.25	17-119	26-87	
Belonging Variable							
Need to Belong	Exclusion	29.29	5.75	-.19	10-50	14-42	.79
	Not Exclusion	30.54	6.75	-.01	10-50	12-47	

Table 3.2 Descriptive Statistics for Dependent Measures

	Mean	Standard Deviation	Skewness	Possible Range	Actual Range	Alpha
Dependent Variables						
Threatened Needs Scale 1						
Belongingness	15.82	8.47	.07	3-27	3-27	.89
Control	15.23	7.29	-.15	3-27	3-27	.77
Meaningful Existence	12.42	8.88	.34	3-27	3-27	.91
Self-Esteem	11.97	4.99	-.51	2-18	2-18	.80
Threatened Needs Scale 2						
Belongingness	14.49	7.77	.08	5-25	5-25	.97
Control	9.76	4.74	.34	4-20	4-20	.86
Meaningful Existence	17.73	7.40	.22	6-30	6-30	.93
Self-Esteem	16.80	5.53	-.22	5-25	5-25	.90
Dread of Future Interactions						
Dread of Future Interactions	30.06	8.35	.15	12-60	12-53	.91
Mood Questionnaire						
Positive Affect—Baseline	42.23	9.38	-.18	13-65	13-64	.89
Negative Affect—Baseline	17.64	7.49	1.62	11-55	11-49	.88
Positive Affect—Post	37.83	11.94	-.10	13-65	13-65	.93
Negative Affect—Post	18.46	7.83	.93	11-55	11-44	.89
Threat Perception Task						
Overall Threat	329.38	159.56	.46	0-1100	10-810	.81

Table 3.3 Inter-Rater Reliabilities for Nonverbal Behaviors and Dyadic Climate

Behavior	Alpha
Positive Affect	
Smiling	.88
Laughing	.90
Eye Contact	.95
Talking with Hands	.99
Positive Affect (Dyad)	.90
Negative Affect	
Body Orientating Away from Partner	1.00
Fidgeting	.87
Number of Pauses in Conversation	.81
Tension (Dyad)	.91
Awkwardness (Dyad)	.72
Behavior	**Alpha**
Positive Affect	
Smiling	.88
Laughing	.90
Eye Contact	.95
Talking with Hands	.99
Positive Affect (Dyad)	.90
Negative Affect	
Body Orientating Away from Partner	1.00
Fidgeting	.87
Number of Pauses in Conversation	.81
Tension (Dyad)	.91
Awkwardness (Dyad)	.72

3.2.1 Manipulation Check

Next, I checked to see if the manipulation of ostracism/exclusion was successful. Nonostracized participants felt significantly more included by the "other" participants (M = 5.42, SD = 4.00) than ostracized participants did (M = 2.06, SD = 1.12), $F(1,141) = 43.89$, $\eta^2 = .24$ Conversely, ostracized participants felt that they were poorly accepted by the "other" participants (M = 7.24, SD = 1.98) than did the nonostracized participants (M = 1.59, SD = 1.34), $F(1,141) = 373.27$, $\eta^2 = .73$. In sum, the ostracism manipulation did in fact increase the participants' feelings of being excluded and not accepted by the "other" participants.

The results further revealed that the nonostracized participants enjoyed playing the Cyberball game significantly more (M = 6.79, SD = 2.05) than did the ostracized participants (M = 2.71, SD = 2.27), $F(1,134) = 99.83$, $\eta^2 = .43$. Conversely, ostracized participants felt more rejected and excluded by the "other" participants (Ms = 3.94, 4.30, SDs = 1.01, 1.05) than did nonostracized participants (Ms = 1.15, 1.35, SDs = 0.47, 0.90), $Fs(1,139) = 419.03, 296.29$, $\eta^2 = .75, .68$ for rejected and excluded, respectively. The ostracized participants also felt significantly more ignored during the Cyberball game (M = 4.51, SD = 0.79) than the nonostracized participants did (M = 1.18, SD = 0.49), $F(1,138) = 846.33$, $\eta^2 = .86$. Furthermore, ostracized participants felt that they received a lower number of throws (M = 5.63%, SD = 8.66%) than participants in the nonostracized/inclusion condition did (M = 27.81%, SD = 11.80%), $F(1,136) = 141.47$, $\eta^2 = .51$. In

summary, participants who were excluded while playing Cyberball correctly perceived that they had been excluded by the "other" participants during the Cyberball game compared to the not excluded participants. Therefore, the Cyberball manipulation was successful in creating a social ostracism experience (refer to Table 3.4).

Table 3.4 Manipulation Check

	Condition	Mean	Standard Deviation	F	η^2
Felt Accepted	Exclusion	2.06	1.12	**43.89****	.24
	Not Exclusion	5.42	4.00		
Felt Poorly Accepted	Exclusion	7.24	1.98	**373.27****	.73
	Not Exclusion	1.59	1.34		
Enjoyed Cyberball	Exclusion	2.71	2.27	**99.83****	.43
	Not Exclusion	6.79	2.05		
Felt Rejected	Exclusion	3.94	1.01	**419.03****	.75
	Not Exclusion	1.15	0.47		
Felt Ignored	Exclusion	4.51	0.79	**846.33****	.86
	Not Exclusion	1.18	0.49		
Felt Excluded	Exclusion	4.30	1.05	**296.29****	.68
	Not Exclusion	1.35	0.90		
Number of Throws	Exclusion	5.63%	8.66%	**141.47****	.51
	Not Exclusion	27.81%	11.80%		

3.3 Intercorrelations of the Personality Measures

Several correlations among the personality variables are worth mentioning. For example, there were several personality variables that were expected to amplify reactions to social exclusion, such as social anxiety (e.g., fear of negative evaluation, social distress, interaction anxiousness) and nBelong. As expected, interaction anxiousness was positively correlated with fear of negative evaluation (r = .53) and social distress (r = .63). In addition, nBelong was positively related to interaction anxiousness (r = .25), fear of negative evaluation (r = .57), and social distress (r = .29).

Secure attachment style was expected to lessen the negative effects of social exclusion and should be negatively related to personality measures that were expected to exacerbate these effects. There were mixed findings for this pattern of relations. Persons with a secure attachment style reported having less interaction anxiousness (r = -.34), less fear of negative evaluation (r = -.27), and less social distress (r = -.18). However, secure attachment was not correlated with nBelong (r = .05, *n.s.*) (See Table 3.5).

3.5 Intercorrelations of the Personality Measures

	Personality Dimensions			
	Fear of Negative Evaluation	Social Distress	Interaction Anxiousness	Secure Attachment
Fear of Negative Evaluation	-			
Social Distress	**0.52****	-		
Interaction Anxiousness	**0.53****	**0.63****	-	
Secure Attachment	**-0.27***	**-0.18***	**-0.34****	-
nBelong	**0.57****	**0.29****	**0.25****	0.05

**p < .01, *p < .05

3.4 Intercorrelations of the Dependent Measures

Correlations among the dependent measures were examined next. Threatened belongingness was positively correlated with dread of future interactions (r = .55) and increases in negative affect (r = .61) but negatively correlated with increases in positive affect (r = -.56). As expected, threatened belongingness was positively related to threatened control (r = .93), threatened meaningful existence (r = .94), and threatened self-esteem (r = .82)[5]. In addition, dread of future interactions was positively correlated with threatened belongingness (r = .55), threatened control (r = .55), threatened meaningful existence (r = .58),

[5] One could argue that these threatened needs load on one overall need factor. However, I chose to examine them separately for two reasons. First, they were examined separately to be consistent with previous literature. Second, I wanted to examine the differential predictive validity of each threatened need on short-term reactions to ostracism.

threatened self-esteem (r = .61), and threat perception (r = .26). Also, dread of future interactions was negatively correlated with increases in positive affect (r = -.52) and positively correlated with increases in negative affect (r = .46) (see Table 3.6). In sum, the overall pattern suggests that my dependent measures were related to one another in reliable and expected ways.

Table 3.6 Intercorrelations of the Dependent Measures

	Dependent Measures							
	I	II	III	IV	V	VI	VII	VIII
Threatened Needs								
Belongingness (I)	-	**.93****	**.94****	**.82****	**.55****	**-.56****	**.61****	.01
Control (II)		-	**.89****	**.78****	**.55****	**-.54****	**.53****	-.04
Meaningful Existence (III)			-	**.88****	**.58****	**-.64****	**.62****	.08
Self-Esteem (IV)				-	**.61****	**-.61****	**.67****	**.19***
Dread of Future Interactions (V)					-	**-.52****	**.46****	**.26****
Positive Affect Change (VI)						-	**-.56****	**-.17***
Negative Affect Change (VII)							-	.07
Threat Perception (VIII)								-

**p < .01 *p < .05

3.5 Tests of the Main Hypotheses

Consistent with my overall theoretical model that is based on Williams' (1997) model of social exclusion (see Figure 3.1), analyses were divided into two main sets of dependent measures: threatened needs and reactions to social exclusion. Reactions to social exclusion were further divided into immediate reactions and short-term reactions.

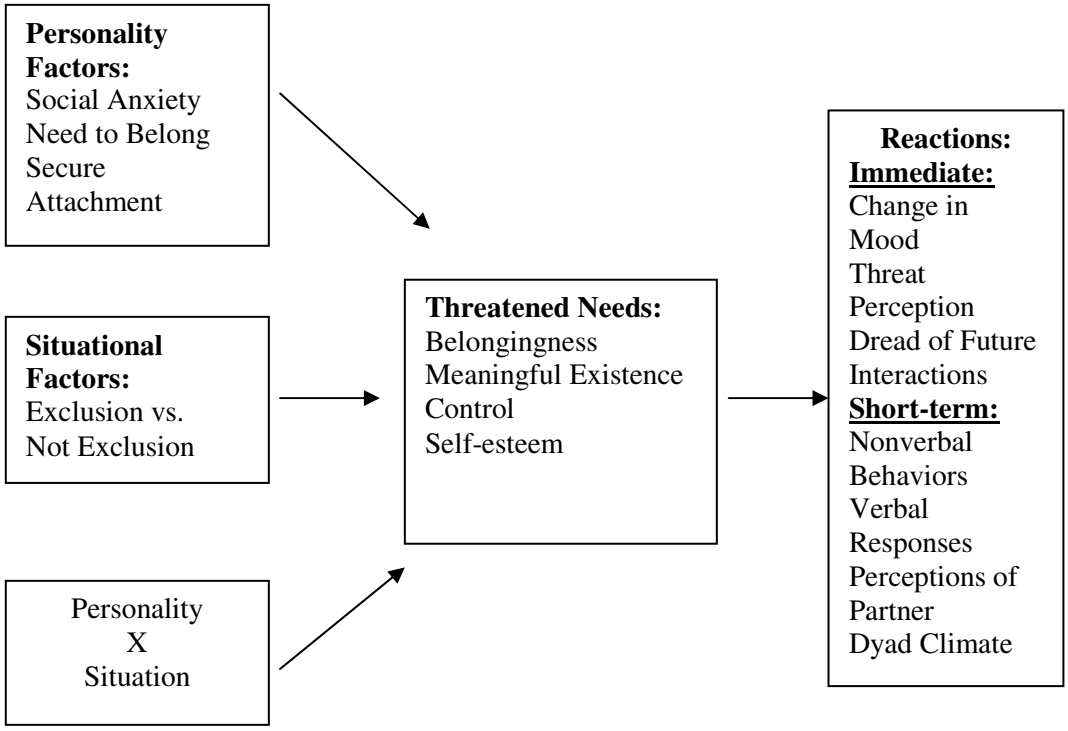


Figure 3.1 Preliminary Theoretical Model
Note: This model is based on Williams (1997)

3.5.1 Threatened Needs: Ostracism Effects

My first set of analyses tested the situation main effects hypotheses and can be viewed as replications and extensions of previous work. For example, I expected that individuals who were socially excluded would report greater threatened needs (i.e., belongingness) than individuals in the inclusion condition. To determine whether condition and/or gender had an effect on the Cyberball criterion measures, I conducted a 2 (sex of participant) X 2 type of situation (exclusion vs. not exclusion (or inclusion)) MANOVA with the four types of threatened needs as the dependent measures. Wilk's λ revealed a significant difference between conditions, $F(4,126) = 184.70$, $\eta^2 = .85$. There was no difference associated with the sex of the participant ($F(4,126) = .50$, $p = .77$, *n.s.*).

Following the significant MANOVA effect for condition, univariate analyses revealed that all four threatened needs contributed to the overall multivariate effect. First, individuals in the exclusion condition felt that their belongingness was threatened ($M = .92$, $SD = .41$) compared to individuals in the not excluded condition ($M = -.91$, $SD = .33$), $F(1,135) = 743.87$, $\eta^2 = .85$. Second, excluded participants felt that their meaningful existence was threatened during the Cyberball game ($M = .82$, $SD = .63$) compared to not excluded participants ($M = -.82$, $SD = .41$), $F(1,136) = 305.07$, $\eta^2 = .69$. Third, excluded participants felt that they had less control over the game ($M = .83$, $SD = .46$) than did not excluded participants ($M = -.83$, $SD = .49$), $F(1,138) = 402.98$, $\eta^2 = .75$. Finally, excluded participants' self-esteem was more negatively affected while playing Cyberball (*M*

= .69, *SD* = .74) than not excluded participants' self-esteem was (*M* = -.69, *SD* = .55), $F(1,143) = 142.82$, $\eta^2 = .51$. In sum, ostracism resulted in an increase in threatened needs (see Table 3.7).

Table 3.7 Threatened Needs: MANOVA and ANOVA Results by Condition

	Wilk's Lambda	η^2			
Condition	184.70**	.85			
Sex	.50				
	Condition	Mean	Standard Deviation	F	η^2
Threatened Needs					
Belongingness	Exclusion	.92	.41	743.87**	.85
	Not Exclusion	-.91	.33		
Meaningful Existence	Exclusion	.82	.63	305.07**	.69
	Not Exclusion	-.82	.41		
Control	Exclusion	.83	.46	402.98**	.75
	Not Exclusion	-.83	.49		
Self-Esteem	Exclusion	.69	.74	142.82**	.51
	Not Exclusion	-.69	.55		

**p < .01

Wilks' λ also revealed a significant multivariate condition X sex of participant interaction for threatened needs, $F(4,126) = 3.24$, $\eta^2 = .09$. Follow-up univariate analyses revealed a condition X sex interaction for control ($F(1,138) = 11.93$, $\eta^2 = .08$) and self-esteem ($F(1,143) = 3.69$, $\eta^2 = .03$). Excluded men (*M* = .66, *SD* = .54) and excluded women (*M* = .95, *SD* = .37) felt greater threatened

control than included men (M = -.67, SD = .53) and not excluded women (M = -.93, SD = .43). Mean comparisons revealed that this effect was larger for women ($F(1,85) = 466.74$, $\eta^2 = .85$) than it was for men ($F(1,53) = 81.83$, $\eta^2 = .62$). In addition, excluded men (M = .54, SD = .90) and excluded women (M = .78, SD = .61) reported higher levels of threatened esteem than not excluded men (M = -.57, SD = .53) and not excluded women did (M = -.76, SD = .55). However, the effect was again larger for the women ($F(1, 88) = 156.73$, $\eta^2 = .65$) than it was for the men ($F(1, 55) = 30.80$, $\eta^2 = .37$). There was no evidence of a sex X condition interaction for the measure of threat to meaningful existence or threat to belongingness.

3.5.2 Threatened Needs: Personality Main Effects

Next, I tested the influence of personality on threatened needs. I predicted both main effects and moderating influences. I expected that personality would be directly related to threatened needs regardless of situation influences. For example, socially anxious individuals should perceive their needs as being more negatively affected in social interactions than individuals who are lower on social anxiousness regardless of the condition (i.e., exclusion or not exclusion). In addition, individuals who have a secure attachment style should be less likely to report threatened needs, especially belongingness, compared to individuals who are more insecure in their attachment style.

To test for personality influences (i.e., both main effects and moderating influences) on threatened needs, a series of moderated multiple regressions were

run. In all of these analyses, the participant's sex was entered as the first predictor. Next, one of the personality variables was centered and entered on the second step. In addition, the effects-code for situation (not exclusion v. exclusion) was entered on this step. The effects codes for the condition variable were -1 for the exclusion condition and 1 for the not exclusion condition. The two-way cross-products among sex, personality, and situation type were entered on the third step. Finally, the three-way interaction among the variables was examined. Criterion measures included each of the threatened needs (i.e., belongingness, control, meaningful existence, and self-esteem).

3.5.2.1 Social Anxiety

Two of the three dimensions of social anxiety (i.e., fear of negative evaluation and interaction anxiousness) were related to threatened needs. First, individuals who reported a higher fear of negative evaluation were more likely to report feeling that their existence was meaningless (B = .05, $t(130) = 3.20$, $sr = .14$) and to report lower self-esteem (B = .06, $t(137) = 3.10$, $sr = .18$). Fear of negative evaluation was not related to threatened belongingness (B = .02, $t(128) = 1.33$, *n.s.*) or threatened control (B = .01, $t(127) = .40$, *n.s.*). There was, however, a sex X fear of negative evaluation for threatened control, B = -.03, $t(129) = -2.04$. That is, male participants high in fear of negative evaluation were more likely to feel that their control was threatened, $t(47) = 2.17$, $sr = .19$ (see Figure 3.2). There was no evidence that fear of negative evaluation influenced control for women, $t(81) = -.05$, $p = .96$, $sr = 00$.

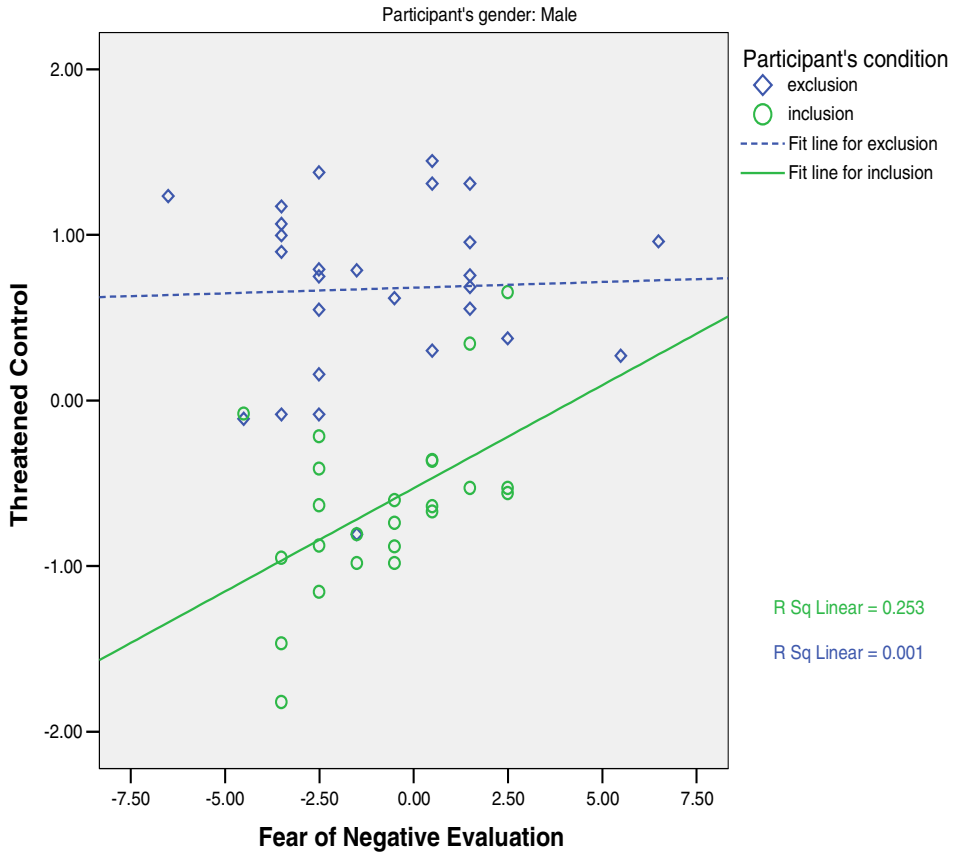


Figure 3.2 Relationship between Fear of Negative Evaluation and Threatened Control for Men

Second, interaction anxiousness was positively related to threatened control (B = .01, $t(129) = 1.97$, $sr = .08$), threatened meaningful existence (B = .01, $t(132) = 2.63$, $sr = .12$), and threatened self-esteem (B = .01, $t(134) = 2.14$, $sr = .13$). However, interaction anxiousness was not related to threatened belongingness, B =

.00, *t*(130) = .84, *n.s*. Unexpectedly, social distress was not related to threatened needs.

3.5.2.2 Secure Attachment Style

As predicted, secure attachment was negatively related to threatened belongingness, control, meaningful existence, and self-esteem, Bs = -0.01, *ts* = -2.14, -3.13, -2.15, -2.23, *dfs* = 123, 123, 125, 127, *srs* = -.07, -.13, -.10, -.13, respectively. There was also a sex X secure attachment interaction for threatened control, B = 0.01, *t*(123) = 3.92, *sr* = .16. For men, secure attachment was related to threatened control, B = -0.02, *t*(45) = -3.66, *sr* = -.30. For women, there was no relation between insecure attachment and threatened control, B = 0.00, *t*(78) = .86, *n.s.* (Figure 3.3).

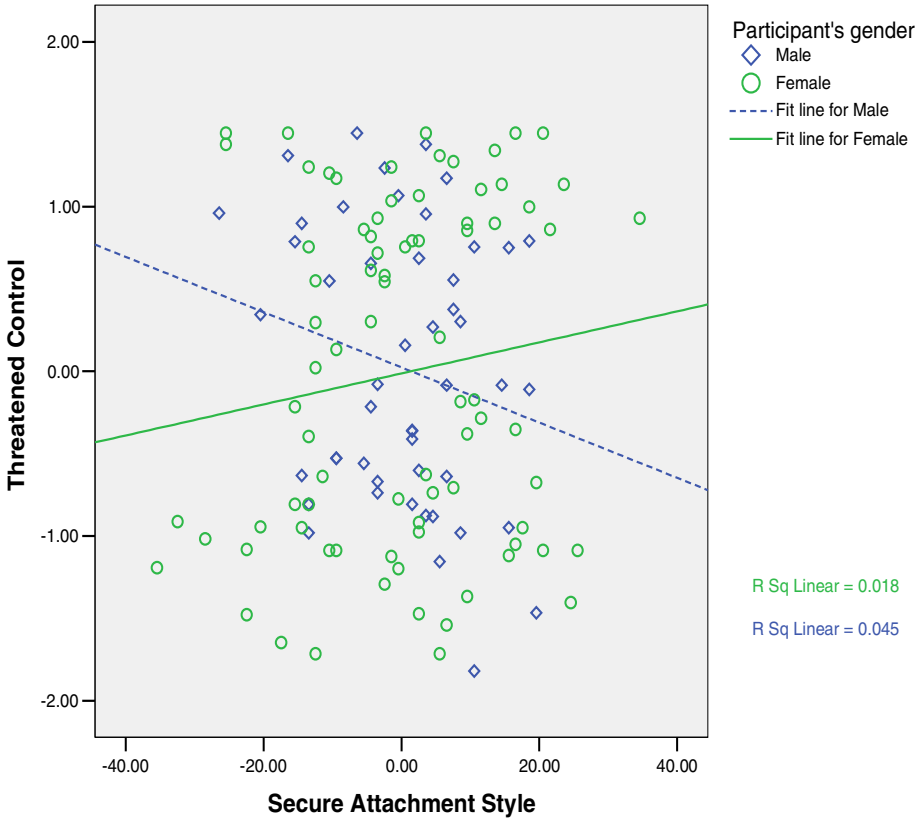


Figure 3.3 Relationship between Secure Attachment Style and Threatened Control for Men and Women

3.5.2.3 Need to Belong

The need to Belong (nBelong) was expected to be positively related to threatened needs in general. As predicted, nBelong was related to threatened belongingness (B = .01, $t(131) = 2.63$, $sr = .08$), threatened meaningful existence (B = .02, $t(133) = 3.13$, $sr = .14$), and threatened self-esteem (B = .03, $t(135) = 3.44$, sr

= .20). However, nBelong was not related to threatened control, B = .01, $t(130)$ = .94, p = .35.

In sum, social anxiety (fear of negative evaluation and interaction anxiousness), and nBelong were directly related, as predicted, to increased threatened needs in relationships (across conditions). Fear of negative evaluation was related to meaningful existence and self-esteem; interaction anxiousness was related to threatened control, meaningful existence, and threatened self-esteem. Need to Belong was positively related to threatened belongingness, meaningful existence, and self-esteem. On the other hand, being securely attached was negatively related to all four threatened needs (see Table 3.8).

Table 3.8 Personality Main Effects for Threatened Needs

	Threatened Needs											
	Belongingness			Meaningful Existence			Self-Esteem			Control		
	B	t	sr	B	t	sr	B	T	sr	B	t	sr
Social Anxiety												
Fear of Negative Evaluation	.02	1.33	.04	.05	**3.20****	.14	.06	**3.10****	.18	.01	.40	.03
Social Distress	.00	-.09	.00	.06	1.75	.08	.06	1.43	.08	.05	1.61	.07
Interaction Anxious	.00	.84	.03	.01	**2.63****	.12	.01	**2.14***	.13	.01	**1.97***	.08
Attachment Styles (ASQ)												
Secure	-.01	**-2.14***	-.07	-.01	**-2.15***	-.10	-.01	**-2.23***	-.13	-.01	**-3.13****	-.13
Belonging Construct												
nBelong	.01	**2.63****	.08	.02	**3.13****	.14	.03	**3.44****	.20	.01	.94	.04

**p < .01, *p < .05, † p < .05, one-tailed

3.5.3 Threatened Needs: Personality's Moderating Influences

The moderator hypotheses were tested using the same regression models. Specifically, I expected that certain personality attributes (i.e., social anxiety constructs, nBelong) would amplify threatened needs following social exclusion

compared to social inclusion, whereas other certain personality variables (i.e., secure attachment style) would attenuate the links between social exclusion and threatened needs.

3.5.3.1 Social Anxiety

Social distress, interaction anxiety, and fear of negative evaluation were expected to exacerbate the effect of ostracism on threatened needs. However, there was little support for this prediction. There was a condition x fear of negative evaluation interaction for threatened control, B = .03, $t(129) = 1.92$, sr = 08 . Contrary to my predictions, not excluded participants high in fear of negative evaluation felt that their control was threatened, $t(63) = 2.50$, $sr = .28$. There was no evidence that fear of negative evaluation influenced control for excluded participants, $t(65) = -.28$, $sr = -.03$, *n.s.* In summary, there was no evidence that social distress and social anxiety moderated the influence of ostracism on threatened needs.

3.5.3.2 Secure Attachment Style

Secure attachment was expected to weaken the association between exclusion and threatened needs. There was no evidence, however, that secure attachment moderated the influence of exclusion on threatened needs.

3.5.3.3 Need to Belong

Excluded individuals high in nBelong were expected to report a greater threat to their needs than individuals who have lower nBelong. As predicted, there were condition X nBelong interactions for threatened meaningful existence and

threatened self-esteem (Bs = -.02, -.03, *ts*(138) = -3.13, -3.04). When excluded, individuals higher on nBelong reported more threatened meaningful existence and self-esteem than persons lower on nBelong, *ts* = 3.87, *dfs* = 67, 68, *srs* = .43, .47. There was no evidence that nBelong was associated with threatened meaningful existence or self-esteem in the not excluded condition, *ts*(68) = .80, .63, *ps* = .43, .53.

Finally, there was a marginal condition X nBelong interaction for threatened belongingness (B = -.01, *t*(134) = -1.94, $p < .06$). When excluded, individuals higher on nBelong reported more threatened belongingness needs than individuals lower on nBelong, *t*(66) = 2.82, *sr* = .33. There was no evidence that nBelong influenced threatened belongingness when not excluded, *t*(67) = .74, *p* = .46. Contrary to predictions, there was no evidence that nBelong moderated the influence of ostracism on threatened control, B = -.01, *t*(127) = -1.48, *p* = .14.

In sum, nBelong did amplify threatened needs in the exclusion condition, namely threatened meaningful existence, threatened self-esteem, and threatened belongingness. Contrary to the predictions, however, not excluded participants who were high in fear of negative evaluation tended to report a greater threat to their control than individuals lower on fear of negative evaluation. This may be due to the fact that the not excluded (inclusion) condition represents a more ambiguous situation for individuals who fear negative evaluation. There was no evidence that social distress, interaction anxiousness, and secure attachment moderated the

association between exclusion and threatened needs (Refer to Appendix F for additional figures).

3.5.4 Immediate Reactions to Social Exclusion: Ostracism Effects

Next, the immediate reactions to social exclusion were examined. These immediate reactions included changes in mood (i.e., changes in both positive and negative affect), threat perception, and dread of future interaction. A 2 (sex of participant) X 2 (exclusion v. not exclusion) MANOVA was again run to determine if excluded participants experienced more negative immediate reactions to social exclusion than participants in the not excluded (inclusion) condition. First, to analyze the changes in positive and negative affect, I used the residual change scores derived from the EAQ pre- and post- measures. Second, I used the threat perception measure to assess threat perception (Barrett, Rapee, Dadds, & Ryan, 1996). Finally, I used the dread of future interactions measure to assess the participants' dread of future interactions.

Wilk's λ revealed a significant difference between conditions for immediate reactions, $F(4,130) = 21.76$, $\eta^2 = .40$. Following the significant MANOVA, univariate analyses were again conducted to determine which reactions contributed to this overall effect. First, individuals in the exclusion condition experienced a greater decrease in positive affect ($M = -.50$, $SD = 1.03$) than did not excluded participants ($M = .48$, $SD = .68$), $F(1,139) = 38.95$, $\eta^2 = .22$. Similarly, excluded individuals experienced a greater increase in negative affect ($M = .56$, $SD = 1.04$) than did not excluded participants ($M = -.53$, $SD = .57$), $F(1,137) = 57.02$, $\eta^2 = .29$.

Also as predicted, excluded participants reported more dread of future interactions (M = 34.21, SD = 7.54) than not excluded participants did (M = 25.79, SD = 6.88), $F(1,138) = 46.80$, $\eta^2 = .25$. However, contrary to Zadro, Boland, Richardson (2006), I found no evidence of a condition effect for threat perception, F (1, 140) = .05, *n.s.* Participants in the exclusion and inclusion (not excluded) conditions reported similar levels of threat, (Ms = 323.68, 334.93, SDs = 153.61, 166.02, for exclusion and not exclusion, respectively).

In sum, excluded participants reported a greater decrease in positive affect and a greater increase in negative affect than did not excluded participants. In addition, excluded participants reported more dread of future interaction than did included participants. However, there was no significant difference between conditions for the measure of perceived threat (see Table 3.9).

Table 3.9 Immediate Reactions: MANOVA and ANOVA Results by Condition

	Wilk's λ	η^2			
Condition	21.76**	.40			
	Condition	Mean	Standard Deviation	F	η^2
Immediate Reactions					
Changes in Positive Affect	Exclusion	-.50	1.03	38.95*	.22
	Not Exclusion	.48	.68		
Changes in Negative Affect	Exclusion	.56	1.04	57.02*	.22
	Not Exclusion	-.53	.57		
Dread of Future Interactions	Exclusion	34.21	7.54	46.80*	.25
	Not Exclusion	25.79	6.88		
Threat Perception	Exclusion	323.68	153.61	.05	.51
	Not Exclusion	334.93	166.02		

*p < .05

3.5.5 Immediate Reactions to Social Exclusion: Personality Main Effects

Regression analyses were again used to determine if personality traits influenced negative reactions to social interactions across conditions. The model that was used for threatened needs was also used to examine immediate reactions. Criterion measures included changes in positive and negative affect, threat perception, and dread of future interaction.

3.5.5.1 Social Anxiety

Individuals who were socially anxious (i.e., fear of negative evaluation, social distress, interaction anxiousness) were expected to report more negative immediate reactions regardless of the condition. First, individuals higher on the fear of negative evaluation reported a greater dread of future interactions, B = .80, $t(136) = 3.55$, $sr = .25$. Fear of negative evaluation was also positively related to threat perception, B = 14.26, $t(138) = 2.80$, $sr = .23$. That is, persons higher in fear of negative evaluation perceived the situation as more threatening, regardless of condition. Unexpectedly, however, the fear of negative evaluation was not related to changes in affect (Bs = -.04, -.01, *ts* = -1.32, -.37, *dfs* = 137, 135, *n.s.* for positive and negative affect, respectively).

Second, social distress was positively related to dread of future interactions (B = 1.52, $t(137) = 3.53$, $sr = .25$). However, there was no evidence that social distress was related to threat perception (B = 9.95, $t(139) = 1.02$, *n.s.*) or to changes in affect (Bs = -.01, -.06, *ts* = -.23, -1.25, *dfs* = 138, 136, *n.s.*) .

Finally, participants with higher interaction anxiousness reported dreading the future interaction more, B = .28, $t(132) = 5.24$, $sr = .36$. In addition, participants higher in interaction anxiousness reported perceiving the situation as more threatening than did persons lower on this dimension, B = 2.84, $t(135) = 2.30$, $sr = .19$. Contrary to the predictions, interaction anxious participants did not report significant changes in affect.

3.5.5.2 Secure Attachment Style

Participants with a secure attachment style were expected to report less dread of the future interaction. Moreover, securely attached individuals should perceive the situation as less threatening, regardless of condition. As predicted, secure attachment was negatively related to dread of future interactions, B = -.25, $t(126) = -4.83$, $sr = -.34$. This relation was qualified by a sex X secure attachment interaction, B = .13, $t(126) = 2.54$, $sr = .18$. Men higher on secure attachment reported less dread of future interactions, B = -.39, $t(46) = -4.51$, $sr = -.48$. Women higher on secure attachment also reported less dread, but the magnitude of the relation was smaller, B = -.12, $t(80) = -2.17$, $sr = -.20$. Second, persons higher on secure attachment reported lower levels of threat perception, B = -.06, $t(129) = -4.95$, $sr = -.39$. Finally, persons higher on secure attachment reported increases in positive affect, B = .02, $t(127) = 2.34$, $sr = .17$.

3.5.5.3 Need to Belong

Individuals higher in the nBelong were anticipated to be more vigilant to social cues (Pickett, Gardner, & Knowles, 2004). This vigilance could lead to a general increase in negative affect and a greater decrease in positive affect during the experimental session. These nBelong participants were expected to report a greater threat perception and conversely not dread future interactions. Individuals high in nBelong reported a decrease in positive affect after playing the Cyberball game, regardless of whether they were excluded or not excluded, B = -.03, $t(135)$ = -2.27, sr = -.17. In addition, high nBelong participants also reported experiencing an increase in negative affect after playing Cyberball compared to low nBelong participants, B = .03, $t(133)$ = 2.11, sr = .15. Unexpectedly, nBelong was not related to dread of future interactions (Bs = .08, 4.11, $ts(136)$ = .76, 1.85, *n.s.* for dread of the future interaction and threat perception, respectively).

In sum, there were several personality factors that were related to immediate reactions. Fear of negative evaluation, social distress, interaction anxiousness, and nBelong were positively related to dread of the future interaction. Conversely, secure attachment was negatively related to dread of the future interaction and to threat perception. Individuals high in nBelong reported a decrease in positive affect while also experiencing an increase in negative affect. On the other hand, persons higher on secure attachment reported increases in positive affect (see Table 3.10).

Table 3.10 Personality Main Effects for Immediate Reactions

	Immediate Reactions											
	Change in Positive Affect			Change in Negative Affect			Dread of Future Interactions			Threat Perception		
	B	t	sr	B	t	sr	B	t	sr	B	t	sr
Social Anxiety Constructs												
Fear of Negative Evaluation	-.04	-1.32	-.10	-.01	-.37	-.03	.80	**3.55****	.25	14.26	**2.80****	.23
Social Distress	-.01	-.23	-.02	-.06	-1.25	-.09	1.52	**3.53****	.25	9.95	1.02	.09
Interaction Anxious	-.01	-1.84	-.14	.00	-.46	-.03	.28	**5.24****	.36	2.84	**2.30***	.19
Attachment Style (ASQ)												
Secure	.02	**2.34***	.17	.00	-.40	-.03	-.25	**-4.83****	-.34	-.06	**-4.95**	-.39
Belonging Constructs												
nBelong	-.03.	**-2.27***	-.17	.03	**2.11***	.15	.08	.76	.06	4.11	**1.85†**	.16

**p<.01, *p<.05 † p < .05, one-tailed

3.5.6 Immediate Reactions to Social Exclusion: Personality's Moderating Influences

Next, I tested to see if personality moderated the relation between exclusion and immediate reactions to exclusion. I predicted that social anxiety and nBelong would amplify the link between social exclusion and immediate reactions. Conversely, secure attachment style should attenuate the link between social exclusion and immediate reactions.

3.5.6.1 Social Anxiety

I predicted that social anxiety would strengthen the link between social exclusion and immediate reactions. Contrary to this prediction, fear of negative evaluation, social distress, and interaction anxiousness did not moderate the link between exclusion and immediate reactions.

3.5.6.2 Secure Attachment Style

Persons higher on secure attachment were expected to have weaker immediate reactions to exclusion. Contrary to my predictions, secure attachment style did not weaken the influence of either dread of future interactions or threat perception when participants were excluded, Bs = .00, -.01, *ts* =-.73, .04, *dfs* = 126, 129, *srs* = .003, -.06, *n.s.,* respectively. In addition, secure attachment was not related to changes in negative and positive affect, Bs = .01, -.003, *ts* = .87, -.38, *dfs* = 125, 127, *srs* = .06, -.03, *n.s.,* respectively.

3.5.6.3 Need to Belong

Excluded participants who were high in nBelong were anticipated to report more negative short reactions when excluded compared to those individuals lower on this dimension. There was a significant condition X nBelong interaction for a change in positive affect, B = .03, *t*(132) = 2.22, *sr* = .16. That is, excluded participants high in nBelong reported a decrease in positive affect, B = -.06, *t*(64) = -2.65, *sr* = -.31. There was no evidence that not excluded participants high in nBelong experienced a change in positive affect, B = 00, *t*(67) = .27*, n.s*. However, this was qualified by a sex X condition X nBelong interaction for a change in

positive affect, B =-.02, $t(131) = -1.78$, $sr = -.13$. Excluded men high in nBelong reported a decrease in positive affect, B = -.08, $t(24) = -1.90$, $sr = -.36$. There was no evidence that women experienced a change in positive affect when excluded (B = -.04, $t(40) = -1.68$, *n.s.*). In addition, there was no evidence that not excluded men and women higher on nBelong experienced a change in positive affect (Bs = .03, -.02, $ts(22,45) = 1.72, -1.69$, *n.s.* for men and women, respectively). Contrary to predictions, nBelong did not moderate the link between exclusion and changes in negative affect, dread of future interactions, and threat perception.

In sum, there were minimal support for the prediction that personality moderated the link between social exclusion (versus inclusion) and immediate reactions. No personality dimension consistently predicted immediate reactions. For example, individuals high in fear of negative evaluation reported dreading future interactions, but only in the not exclusion (inclusion) condition. Excluded participants high in the nBelong reported a decrease in positive affect, but only for men.

3.5.7 Do Threatened Needs Influence Immediate Reactions?

Supplementary analyses examined whether threatened needs carry some of the influence of ostracism to immediate reactions (e.g., dread of future interactions, changes in affect). This was exploratory in nature and was meant to examine whether certain needs have greater influence than do other threatened needs. For example, loss of control may be more uniquely related to an increase in negative affect than other threatened needs would be.

To estimate the indirect effects of ostracism in my theoretical model (Figure 1), I used procedures outlined by Preacher and Hayes (2004, under review)[6]. In other words, I used multiple mediation models that involved two tests: (1) total indirect effect of all threatened needs and (2) the unique influence of each individual threatened need on immediate reactions. The dependent measures for the models were (1) dread of future interactions; (2) change in positive affect; (3) change in negative affect.

Threatened needs did indeed mediate the link between ostracism and dread of future interaction. First, the overall fit of this model was significant, $F(5,124) = 16.24$, $R^2 = .40$. Moreover, there was an overall indirect effect for threatened needs, $t(130) = -6.58$. Interestingly, only threatened self-esteem uniquely mediated the association of condition to dread of future interactions, $t(130) = 2.35$.

There was also an overall indirect effect for threatened needs for changes in positive affect and negative affect, $ts(132) = 6.39, -7.28$, respectively. However, only threatened meaningful existence mediated the link between ostracism and changes in positive affect, $t(132) = -3.09$, whereas only threatened self-esteem mediated the link between condition and changes in negative affect, $t(132) = 3.75$. The overall fit of these models were significant, $Fs(5,126) = 18.90, 22.34$, $R^2 = .43, .47$, respectively.

[6] Researchers (e.g., Holmbeck, 1997; Preacher & Hayes, 2004) make a distinction between mediated vs. indirect effects. Mediated effects are a special case of indirect effects in which there is a total effect of the initial predictor on the outcome measure (when the mediator is not controlled). However, it is possible to have indirect effects without this relation.

It is possible that emotional affect could color perceptions of threatened needs. Thus, I ran alternative models for ostracism predicting affect and affect in turn predicting threatened needs. To examine if negative and positive affect carry some of the influence of ostracism to threatened needs, LISREL 8.2 models were created. The overall goodness of fit index for the alternative models was low, GFI = .33, AGFI = .40, CFI = .29, RFI = .07, for both the negative and positive affect models. However, the goodness of fit index for the originally proposed model was acceptable, GFI = .98, AGFI = .81, CFI = .99, RFI = .93. The best model involved ostracism influencing threatened needs, which in turn, influenced affect.

Second, I examined whether threatened needs carry some of the influence of personality to immediate reactions (e.g., dread of future interactions, changes in affect) when individuals were excluded or ostracized. In other words, it is possible that personality's influence on immediate reactions is indirect. Specifically, I examined potentially different patterns associated with each personality dimension in the exclusion condition. It is possible that persons can report the *same* level of changes in affect, but for very different reasons. For example, persons higher on fear of negative evaluation may *feel upset* because their self-esteem has been threatened. Conversely, persons higher on need to belong may be equally hurt, but it is because they feel that their meaningful existence and belongingness have been threatened.

3.5.7.1 Secure Attachment Style

Threatened needs mediated the association between attachment styles and immediate reactions, $F(5,56) = 5.51$. First, threatened needs mediated the association between secure attachment style and dread of future interactions, $t(62) = -3.08$. However, only threatened self-esteem mediated the link between secure attachment style and dread of future interactions, $t(62) = 2.24$. Furthermore, the overall fit of the models were significant, $F(5,56) = 5.15$. Second, threatened needs mediated the association between secure attachment style and threat perception, $t(62) = -3.29$. Again, only threatened self-esteem mediated the link between secure attachment style and threat perception, $t(62) = 2.60$. There was no evidence of indirect influences for changes in positive and negative affect.

3.5.7.2 Need to Belong

Threatened needs also mediated the link between nBelong and decreases in positive affect. First, there was an overall indirect effect for threatened needs for decreases in positive affect, $t(64) = -2.26$. Interestingly, only meaningful existence uniquely mediated the association of nBelong to decreases in positive affect, $t(64) = -2.32$. The overall fit of this model was significant, $F(5, 58) = 4.73$, $R^2 = .30$. Second, there was an overall effect for threatened needs for increases in negative affect, $t(64) = 1.75$. However, only threatened self-esteem mediated the link between nBelong and increases in negative affect, $t(64) = 3.64$. The overall fit of this model was significant, $F(5,58) = 5.38$, $R^2 = .32$.

In sum, threatened needs mediated the association between ostracism and immediate reactions, namely dread of future interaction and changes in both positive and negative affect. In addition, threatened self-esteem mediated the link between attachment style to dread of future interactions and threat perception. Finally, threatened meaningful existence and threatened self-esteem mediated the link between nBelong and changes in affect.

3.5.8 Short-Term Reactions to Social Exclusion: Ostracism Effects

Finally, I examined short-term reactions to social exclusion that included post-interaction perceptions, non-verbal behaviors in face-to-face interactions, observers' perceptions of the dyadic climate, and verbal behaviors in face-to-face interactions as assessed by the LIWC. Four separate sets of analyses were run for each set of short-term reactions. For each analysis involving participant's individual behaviors, the confederate's perceptions and/or behaviors were controlled.

First, I examined if participants who were excluded perceived the face-to-face interactions as more adverse using the post-interaction perception questionnaire as the dependent measure. For example, I hypothesized that excluded participants would rate the face-to-face interaction as more awkward, uncomfortable, and less harmonious (i.e., less overall enjoyment) than included participants would. The dependent post-interaction perception measures included: (1) perceived interaction quality; (2) dislike of partner; (3) need to communicate.

Second, I observed whether socially excluded participants would show less positive affect, and orient their bodies away from the confederate during the dyadic

interaction than participants who were included during the Cyberball game. The dependent measures for nonverbal behavior include observed: (1) body orientation away from confederate, (2) talking with hands, (3) eye contact, (4) fidgeting, (5) smiling/laughing, (6) pauses in conversation, (7) initiating the conversation. Third, trained observers blind to the condition rated each dyad on dimensions of overall negative and positive affect, tension, and how awkward the interaction seemed.

Finally, linguistic analyses (LIWC) was run to determine if participants engaged in verbal responses that would minimize their interaction involvement, such as speaking less, and expressing negative emotions. LIWC also was used to determine if participants expressed positive emotions during their face-to-face interactions and attempted to reestablish bonds by using more second-person pronouns (e.g., we). The dependent measures included number of words spoken, number of questions asked, use of *I* words, use of *We* words, use of *You* words, number of negations, number of acknowledgements, use of positive emotion words, use of negative emotion words, and use of words associated with social processes.

The MANCOVA for participants' post-interaction perceptions revealed a significant difference between conditions, $F(3,124) = 4.52$, $\eta^2 = .10$. As expected, there was a significant difference between conditions for participant's perceived interaction quality while controlling for confederate's perceived interaction quality. Not excluded participants perceived the face-to-face interaction as more enjoyable ($M = 56.81$, $SD = 8.82$) than excluded participants did ($M = 52.18$, $SD = 10.69$), $F(1,128) = 5.49$, $\eta^2 = .04$. In addition, not excluded participants ($M = 5.52$, $SD =$

1.28) felt more of a need to communicate than did excluded participants (M = 4.66, SD = 1.53), $F(1,129) = 12.92$, $\eta^2 = .09$. This is contrary to the idea that excluded participants will report a greater need to connect. There were no significant differences in condition for dislike of partner, B = 24.50, $F(1,129) = 3.20$, *n.s.*

Next, the MANCOVA for non-verbal behaviors revealed a significant difference for condition, $F(6,89) = 2.20$, $\eta^2 = .13$. Excluded participants orientated their bodies away from confederates (M = .32, SD = .61) more often than did not excluded participants (M = .15, SD = .36), $F(1,109) = 4.73$, $\eta^2 = .04$. In addition, excluded participants engaged in more fidgeting behaviors (M = 7.08, SD = 4.54) than did not excluded participants (M = 5.24, SD = 4.31), $F(1,106) = 5.88$, $\eta^2 = .05$. There was no difference between conditions for talking with hands, eye contact, frequency of positive affect, and number of pauses, $Fs(1,109) = .47, .60, .03, .17$, *n.s.*, respectively. Sex of participant was not related to nonverbal behaviors, $F(6,89) = 1.93$, *n.s.* Finally, the Chi-square for who initiated the conversation was nonsignificant, $\chi^2(2) = 1.48$, *n.s.*

The MANOVA for observer ratings of overall dyadic climate revealed a nonsignificant difference for condition, $F(4,123) = 1.31$, *n.s.*. However, there was a significant sex of dyad effect for observer ratings, $F(4,123) = 3.80$, $\eta^2 = .11$. Women were rated as showing more positive affect (M = 6.50, SD = 2.47) than men (M = 4.96, SD = 2.44), $F(1,128) = 11.93$, $\eta^2 = .09$. Dyads consisting of men were rated as being more awkward (M = 5.14, SD = 2.25) than dyads containing women

(M = 4.32, SD = 2.29), $F(1,126) = 3.88$, $\eta^2 = .03$. There was no evidence of sex differences for negative affect or tension, $F(1,128) = .09, 2.94$, *n.s.*, respectively.

The MANCOVA for LIWC revealed nonsignificant differences for both condition and gender, $Fs(10,104) = .61, .71$, *n.s.*, respectively. There was no evidence that there was a difference between conditions for word spoken or number of questions asked, $Fs(1,121) = .15, .42$, respectively. In addition, there was no difference between conditions for pronoun usage, $Fs(1,121) = 2.58, .00, .04$, *n.s.* for I, we, and you, respectively. There was also no evidence that ostracism influenced the use of negations or acknowledgments, $Fs(1,121) = .36, .38$, respectively. In addition, there was no evidence of a difference between conditions for use of positive and negative affect words, $Fs(1,121) = .28, .06$, *n.s.*, respectively. Finally, there was no evidence that there was a difference between conditions for use of social processes words, $F(1,121) = .56$, *n.s.*

In sum, participants who were not excluded reported enjoying their face-to-face interactions more and had more interest in conversing with their interaction partner than did participants who were excluded. As expected, individuals in the excluded condition orientated their bodies way from the confederate and fidgeted more did than individuals in the not exclusion (or inclusion) condition. Unexpectedly, there was no evidence that excluded participants attempted to repair their threatened belongingness needs by attempting to accommodate and establish bonds with the partner.

As found in previous research (Ickes, Robertson, & Tooke, 1986), women engaged in more positive affect during their face-to-face interaction than did men. That is, women rated their face-to-face interaction as more enjoyable than did men. Observers rated women dyads as displaying more positive affect t than dyads with men, whereas observers rated men dyads as more awkward than women dyads.

3.5.9 Do Threatened Needs Influence Short-Term Reactions?

To further examine whether individuals attempted to repair their threatened needs during face-to-face interactions, I conducted a series of analyses that directly tested the potential indirect influence of exclusion. Using procedures outlined in Preacher and Hayes (2004), I examined whether threatened needs carried the influence of exclusion to short-term reactions. First, I used the Sobel test, which is a widely-used direct test of whether threatened needs carried the influence of exclusion to short-term reactions (Preacher & Hayes, 2004). However, the Sobel test involves making the assumption of normality. Thus, I also conducted bootstrapping procedures that do not make this assumption. For all participant behaviors, the standardized residuals were used after controlling for the confederate's behavior on the same dimension.

First, I examined the relationships between threatened needs and verbal behaviors (see Tables 3.11 & 3.12). Using questions and negations were positively related to threatened needs. In addition, participants used fewer references to "I" and more references to "you" with increasing threatened needs. This is interesting given Pennebaker (2002) has reported that individuals decrease in their use of "I"

after trauma. Finally, participants made more social references with increased threatened needs. Threatened self-esteem systematically mediated the association between exclusion and verbal behaviors, with the exception of acknowledgments (see Tables 3.11 & 3.12). Thus, although there was no direct influence of ostracism to verbal behavior, there were systematic indirect influences (via threatened needs).

Table 3.11 Relationship between Threatened Needs and Interactional Behavior

	Threatened Needs			
	Belongingness	Meaningful Existence	Self - Esteem	Control
Participant's Verbal Behavior				
Number of Words Spoken	-0.05	-0.05	-0.08	-0.04
Questions	0.23**	0.28**	0.32**	0.23**
We	0.01	0.01	0.05	-0.03
I	-0.19*	-0.18†	-0.23**	-0.15†
You	0.18*	0.23**	0.27**	0.21*
Negation	-0.15†	-0.11	-0.09	-0.09
Acknowledgments	-0.16†	-0.16†	-0.12	-0.19*
Positive Emotion	-0.01	-0.06	-0.03	-0.03
Negative Emotion	-0.04	-0.08	-0.12	-0.12
Social Referents	0.21*	0.20*	0.27*	0.18*
Nonverbal Behavior				
Body Orientation Away	0.24*	0.20†	0.20†	0.17
Talking with hands	-0.08	-0.12	-0.02	-0.13
Eye Contact	-0.14	-0.13	-0.14	-0.10
Fidgeting	0.32*	0.20†	0.20†	0.22†
Smiling/Laughing	0.00	-0.02	-0.14	0.06
Pauses in Conversation	-0.11	-0.08	-0.08	-0.10
Dyadic Negative Affect	0.17*	0.16*	0.19*	0.14
Dyadic Positive Affect	-0.09	-0.16†	-0.17*	-0.05
Dyadic Awkwardness	0.10	0.11	0.18*	0.05
Dyadic Tension	0.09	0.16†	0.20*	0.02
Participant Perceptions				
Quality of Interaction	-0.28**	-0.26**	-0.34**	-0.30**
Partner Dislike	0.14	0.13	0.24**	0.09
Need to Communicate	-0.32**	-0.29**	-0.28**	-0.25*

Note: All individual behaviors of the participant are the standardized residuals after controlling for the confederate's behavior. †p< .10; *p< .05; **p< .01

Table 3.12 Indirect Effects of Threatened Needs Mediating the Link between Social Exclusion and Verbal Behavior: Sobel and Bootstrapping Results

	Product of Coefficients			Bootstrapping			
				Percentile 95% CI		Percentile 99% CI	
	Estimate	SE	Z	Lower	Upper	Lower	Upper
Question Marks							
Belonging	-0.61	0.20	-3.09**	**-1.08**	**-0.15**	-1.21	0.01
Meaningful Existence	-0.41	0.13	-3.26**	**-0.66**	**-0.16**	**-0.74**	**-0.01**
Control	-0.37	0.15	-2.54**	**-0.67**	**-0.06**	-0.75	0.03
Self-esteem	-0.30	0.09	-3.49**	**-.0.51**	**-0.12**	**-0.60**	**-0.08**
Use of I							
Belonging	0.36	0.21	1.67	-0.03	0.68	-0.23	0.76
Meaningful Existence	0.20	0.13	1.51	-0.04	0.40	-0.15	0.47
Control	0.14	0.16	0.91	-0.14	0.43	-0.22	0.51
Self-esteem	0.20	0.09	2.16*	**0.03**	**0.36**	-0.02	0.44
Use of You							
Belonging	-0.20	0.21	-0.93	-0.55	0.18	-0.65	0.27
Meaningful Existence	-0.23	0.13	-1.70†	-0.45	0.002	-0.52	0.12
Control	-0.21	0.15	-1.35	-0.44	0.06	-0.50	0.13
Self-esteem	-0.21	0.09	-2.30*	**-0.38**	**-0.03**	-0.44	0.02
Acknowledgments							
Belonging	0.51	0.22	2.37*	**0.14**	**0.93**	**0.05**	**1.16**
Meaningful Existence	0.23	0.14	1.63†	-0.003	0.49	-0.10	0.54
Control	0.33	0.16	2.14*	**0.03**	**0.64**	-0.08	0.80
Self-esteem	0.08	0.09	0.85	-0.07	0.22	-0.13	0.29
Social Referents							
Belonging	-0.10	0.21	-0.47	-0.54	0.34	-0.70	0.46
Meaningful Existence	-0.08	0.13	-0.62	-0.36	0.24	-0.45	0.36
Control	-0.01	0.15	-0.05	-0.31	0.29	-0.42	0.41
Self-esteem	-0.17	0.09	-1.94*	**-0.35**	**-0.0004**	-0.40	0.05

Note: Each mediator was run separately due to problems associated with multicollinearity. *p< .05; **p< .01; †p < .05, one-tailed. Bootstrapping involves 1000 samples; if 0 does not fall within the confidence interval, the indirect effect is significant (in bold).

Second, I examined the relationships between threatened needs and nonverbal behaviors. Although there were significant relationships between threatened needs and nonverbal behaviors, there was no systematic pattern for indirect effects across nonverbal behaviors (see Tables 3.11 & 3.13).

Table 3.13 Indirect Effects of Threatened Needs Mediating the Link between Social Exclusion and Nonverbal Behaviors: Sobel and Bootstrapping Results

	Product of Coefficients			Bootstrapping			
				Percentile 95% CI		Percentile 99% CI	
	Estimate	SE	Z	Lower	Upper	Lower	Upper
Orienting Away							
Belonging	-0.10	0.24	-0.43	-0.64	0.39	-0.80	0.60
Meaningful Existence	-0.04	0.17	-0.24	-0.45	0.25	-0.64	0.37
Control	0.01	0.19	0.01	-0.29	0.35	-0.40	0.53
Self-esteem	-0.06	0.12	-0.50	-0.33	0.17	-0.45	0.26
Fidgeting							
Belonging	0.16	0.23	0.72	-0.33	0.70	-0.52	0.85
Meaningful Existence	0.36	0.16	2.26*	**0.03**	**0.72**	-0.07	0.79
Control	0.34	0.17	2.06*	**0.06**	**0.65**	-0.08	0.76
Self-esteem	0.14	0.11	1.24	-0.11	0.36	-0.19	0.40
Dyadic Negative Affect							
Belonging	-0.03	0.19	-0.16	-0.43	0.36	-0.54	0.49
Meaningful Existence	-0.07	0.12	-0.61	-0.32	0.17	-0.41	0.25
Control	-0.03	0.14	-0.23	-0.31	0.18	-0.40	0.27
Self-esteem	-0.09	0.08	-1.13	-0.24	0.06	-0.30	0.09
Dyadic Positive Affect							
Belonging	0.65	0.53	1.15	-0.34	1.74	-0.68	2.19
Meaningful Existence	0.70	0.34	2.09*	**0.005**	**1.43**	-0.26	1.82
Control	-0.06	0.39	-0.17	-0.69	0.75	-0.90	1.00
Self-esteem	0.41	0.23	1.81†	-0.08	0.91	-0.23	1.08
Dyadic Awkwardness							
Belonging	0.19	0.50	0.37	-0.94	1.15	-1.32	1.55
Meaningful Existence	-0.15	0.31	-0.48	-0.79	0.53	-1.00	0.69
Control	0.27	0.36	0.74	-0.40	0.89	-0.72	1.09
Self-esteem	-0.28	0.21	-1.34	-0.69	0.11	-0.79	0.24
Dyadic Tension							
Belonging	-0.18	0.40	-0.45	-1.00	0.58	-1.34	0.85
Meaningful Existence	-0.46	0.25	-1.85†	-1.00	0.01	-1.18	0.23
Control	0.26	0.29	0.88	-0.22	0.76	-0.42	0.98
Self-esteem	-0.34	0.17	-2.02*	**-0.72**	**-0.01**	-0.85	0.07

Note: Each mediator was run separately due to problems associated with multicollinearity. *p< .05; **p< .01; †p < .05.Bootstrapping involves 1000 samples; if 0 does not fall within the confidence interval, the indirect effect is significant (in bold).

Finally, I examined the relationships between threatened needs and the participant's perceptions of the dyadic interaction. Threatened self-esteem again mediated the association between exclusion and perceived quality and partner dislike. In addition, threatened control mediated the link between exclusion and perceived interaction quality (see Tables 3.11 & 3.14).

Table 3.14 Indirect Effects of Threatened Needs Mediating the Link between Social Exclusion and Post-Interaction Perceptions: Sobel and Bootstrapping Results

	Product of Coefficients			Bootstrapping			
				Percentile 95% CI		Percentile 99% CI	
	Estimate	SE	Z	Lower	Upper	Lower	Upper
Quality							
Belonging	0.41	0.20	1.99*	-0.004	0.80	-0.13	0.95
Meaningful Existence	0.28	0.13	2.13*	-0.01	0.57	-0.10	0.66
Control	0.45	0.15	3.11**	**0.17**	**0.78**	**0.09**	**0.94**
Self-esteem	0.28	0.09	3.04**	**0.09**	**0.49**	**0.04**	**0.57**
Dislike for Partner							
Belonging	-0.06	0.21	-0.28	-0.69	0.50	-0.92	0.63
Meaningful Existence	-0.07	0.13	-0.55	-0.37	0.25	-0.54	0.34
Control	0.13	0.14	0.88	-0.26	0.53	-0.37	0.65
Self-esteem	-0.21	0.09	-2.32*	**-0.41**	**-0.05**	**-0.48**	**-0.006**
Need to Communicate							
Belonging	0.30	0.20	1.46	-0.22	0.74	-0.38	0.91
Meaningful Existence	0.15	0.13	1.17	-0.20	0.42	-0.30	0.50
Control	0.05	0.15	0.37	-0.25	0.35	-0.38	0.43
Self-esteem	0.11	0.09	1.25	-0.11	0.33	-0.16	0.37

Note: Each mediator was run separately due to problems associated with multicollinearity. *p< .05; **p< .01; Bootstrapping involves 1000 samples; if 0 does not fall within the confidence interval, the indirect effect is significant (in bold).

In sum, there was little evidence that participants attempted to repair their threatened needs. Instead, threatened needs were related to pronoun usage that has

been previously linked to post-traumatic linguistic styles and to more negative perceptions of face-to-face interactions. That is, threatened needs seem to negatively influence interactions when the interaction involved the person responsible for the exclusion.

3.5.10 Short-Term Reactions to Social Exclusion: Personality Main Effects

Regression analyses were again used to examine personality's influence on short-term reactions to social exclusion. I examined if personality influenced negative reactions to social interactions. The model that was used for threatened needs was used to examine short-term reactions, with one exception. The confederate's behavior on the dimension of interest was centered and entered on the first step. This allowed me to control for the confederate's behavior while looking at the participant's behavior. Criterion measures included post-interaction perceptions, nonverbal behaviors, and verbal responses as assessed by linguistic analyses.

3.5.10.1 Social Anxiety

There was a significant sex X fear of negative evaluation interaction for participants' perceived interaction quality, B = 1.49, $t(123) = 4.75$, $sr = .36$. Men with a high fear of negative evaluation rated their interaction as less enjoyable (B = -2.07, $t(46) = -3.75$, $sr = -.46$) whereas women with a higher fear of negative evaluation perceived their interactions as *more* enjoyable (B = .96, $t(75) = 2.50$, $sr = .26$). In addition, there was a sex X fear of negative evaluation interaction for need to communicate with interaction partner, B = .11, $t(124) = 2.17$, $sr = .18$. That is, women participants who had a greater fear of negative evaluation felt more of a need

to communicate with their interaction partner than women lower on this dimension (B = .11, $t(75) = 1.91$, $sr = .20$, $p < .05$, one-tailed). There was no evidence that fear of negative evaluation had an influence for men (B = -.11, $t(47) = -1.18$, *n.s.* There was no evidence that fear of negative evaluation was related to dislike of partner, B = .02, $t(127) = .19$, *n.s.*

There was no evidence that fear of negative evaluation was related to nonverbal behaviors or dyadic climate. Finally, there was no evidence that fear of negative evaluation was related to linguistic style.

There was a significant sex X social distress interaction for participants' perceived dislike of partner, B = .40, $t(124) = 2.43$, $sr = .20$. Men with high social distress anxiety reported less dislike for their interaction partner than men lower on this dimension (B = -.61, $t(48) = -2.06$, $sr = -.26$). There was no evidence that women high on social distress anxiety reported less dislike of their interaction partners (B = .21, $t(75) = 1.06$, *n.s.*). There was no evidence that social distress was related to interaction quality and need to communicate, Bs = -.81, .01, $ts(128) = -1.37, .11$, *n.s.*, respectively.

Participants higher in social distress used less expressive gestures (i.e., talking with hands) during their interaction, B = -.91, $t(108) = -2.87$, $sr = -.25$. There was a sex X social distress interaction for talking with hands during the interaction, B = -.91, $t(104) = -2.92$, $sr = -.24$. Women who were higher in social distress used less expressive gestures (i.e., talking with hands) during their interactions than did women lower in social distress, B = -1.80, $t(63) = -4.44$, $sr = -$

.46. There was no evidence that men higher in social distress engaged in expressive gestures during their interactions, B = .00, *t*(40) = .01, *n.s.* There was no evidence that social distress was related to other nonverbal behaviors, dyadic climate or linguistic style.

There was a significant sex X interaction anxiousness interaction for participant's perceived interaction quality, B = .25, *t*(118) = 3.24, *sr* = .26. Men high in interaction anxiousness perceived their interaction as less enjoyable (B = -.43, *t*(44) = -3.38, *sr* = -.42) than did men lower on interaction anxiousness. There was no evidence that women high in interaction anxiousness (B = .06, *t*(73) = .66, *n.s.*) perceived their face-to-face interactions as less enjoyable. There was no evidence of interaction anxiousness being associated with partner dislike or need to communicate, Bs = .02, .01, *ts*(123) = 1.04, .52, *n.s.*, respectively.

Overall, persons higher in interaction anxiousness tended to use less expressive gestures (i.e., talking with hands) during their interactions, B = -.11, *t*(103) = -2.34, *sr* = -.21. There was a significant sex X interaction anxiousness interaction for talking with hands during the interaction, B = -.13, *t*(100) = -2.77, *sr* = -.24. Women high in interaction anxiousness tended to use less expressive gestures during their interactions than women lower in interaction anxiousness, B = -.21, *t*(61) = -3.37, *sr* = -.39. There was no evidence that men high in interaction anxiousness used expressive gestures during their interactions, B = .05, *t*(37) = .83, *n.s.* In addition, participants higher in interaction anxiousness fidgeted *less* during their interactions, B = -.11, *t*(100) = -2.49, *sr* = -.23. There was a significant sex X

interaction anxiousness interaction for body orientating away from partner, B = -.01, $t(100) = -2.26$, $sr = -.21$. Women high in interaction anxiousness tended to orientate their body towards their interaction partner, B = -.01, $t(61) = -2.01$, $sr = -.23$. There was no evidence that men high in interaction anxiousness orientated their body away from their partner, B = .01, $t(37) = 1.39$, *n.s.* Persons higher in interaction anxiousness tended to not initiate a conversation with their interaction partner, B = -.01, $t(119) = -1.90$, $sr = -.17$, $p = .06$.

There was a significant sex X interaction anxiousness interaction for observer ratings of dyadic tension, B = .04, $t(118) = 2.38$, $sr = .21$. Female dyads who had a participant high in interaction anxiousness were perceived to be higher in tension, B = .04, $t(74) = 2.31$, $sr = .26$. There is no evidence dyads with men high in interaction anxiousness were more tense, B = .01, $t(43) = .72$, *n.s.* Interaction anxiousness was not related to other observer ratings of dyadic climate. Finally, interaction anxiousness was negatively related to number of words spoken, B = -3.58, $t(115) = -2.29$, $sr = -.20$. Persons higher on interaction anxiousness spoke less than persons lower on this dimension. However, there was no support that interaction anxiousness was related to other measures of linguistic style.

3.5.10.2 Secure Attachment Style

I expected that individuals who were high in secure attachment style would engage in behaviors that were aimed at maintaining and/or repairing interpersonal bonds. Indeed, persons who were higher on secure attachment reported higher quality face-to-face interactions and more need to communicate with their

interaction partners, B = .27, .02, *ts* = 3.91, 1.96, *df*s = 116, 117 *srs* = .31, .17, respectively. However, these relationships were qualified by sex X secure attachment interactions, Bs = -.23, -.02, *t*s = -3.36, -1.96, *df*s = 116, 117, *sr*s = -.26, -.17. Men who were securely attached reported high quality interactions and a need to communicate with their interaction partner, Bs = .51, .04, *ts* = 4.27, 2.21, *dfs* = 44, 45, *srs* = .51, .29. However, there was no evidence of a relation between attachment security and interaction quality and need to communicate for women, Bs = .04, -.001, *ts* = .52, -.06, *dfs* = 71, *srs* = .06, -.01. The idea that individuals who were high in secure attachment style would engage in behaviors (both verbal and nonverbal) intended to maintain and/or repair interpersonal bonds was not supported, with two exceptions. Overall securely attached participants engaged in more positive affect (i.e., smiling and laughter) during their interactions, B = .18, *t*(98) = 3.02, *sr* = .26. There was a sex X security interaction for display of positive affect during the interaction, B = .14, *t*(95) = 2.12, *sr* = .18. Women who had a secure attachment engaged in more positive affect during their interactions than did women lower in secure attachment, B = .26, *t*(58) = 3.41, *sr* = .38. There was a sex X security interaction for the use of positive emotion words, B = -.02, *t*(109) = -2.23, *sr* = -.20. Securely attached men used more positive emotion words during their face-to-face interactions, B = .03, *t*(38) = 1.78, *p* = .08, *sr* = .26. For women, there was no relation between attachment security and the use of positive emotion words, B = -.01, *t*(70) = -.97, *n.s.*, *sr* = -.11.

3.5.10.3 Need to Belong

Finally, I expected that individuals who were high in nBelong would engage in behaviors that were aimed at maintaining or repairing interpersonal bonds. There was no evidence that nBelong was associated with post-interaction perceptions, Bs = .03, .01, .03, *ts*(124) = .24, .41, 1.62, *n.s.* for perceived interaction quality, dislike of partner, and need to communicate, respectively .

There was a sex X nBelong interaction for frequency of pausing during conversation, B = -.06, *t*(100) = -2.00, *sr* = -.10. That is, men high in nBelong paused more during their face-to-face interactions than did men lower on nBelong, B = 11, *t*(37) = 2.45, *sr* = .22. There was no evidence that women high in nBelong showed this effect, B = .01, *t*(62) = .28, *n.s.* Moreover, there was no support for that hypothesis that nBelong was related to nonverbal behaviors, observer ratings of dyadic climate, or linguistic style.

In sum, there was some support for the notion that personality would have a direct influence on interpersonal behaviors in general. Socially anxious individuals tended to report less enjoyable interactions and spoke less than individuals who were not socially anxious. Observers rated dyadic interactions with women high in interaction anxiousness as having more tension. Men who were higher on secure attachment reported higher quality face-to-face interactions and more need to communicate with their interaction partners. Finally, securely attached men used more positive emotion words during their face-to-face interactions than men lower on attachment security. Unexpectedly, nBelong was not related to participants'

perception of interaction. Moreover, many of the personality findings did not influence linguistic style in the semi-unstructured interactions.

3.5.11 Short-Term Reactions to Social Exclusion: Personality's Moderating Influences

Moderated regression analyses were again used to examine the influence of personality nonverbal behaviors, verbal behavior/responses, trained observers' perceptions of interaction quality, and participant's post-interaction perceptions.

3.5.11.1 Social Anxiety

There was no evidence that fear of negative evaluation moderated the link between exclusion and participants' perceived interaction quality or dislike of interaction partner, B = -.51, .11, *ts*(123) = -1.65, 1.19, *n.s.* There were several three-way interactions for social distress. First, there was a significant condition X sex X social distress interaction for participants' perceived dislike of their interaction partner, B = -.44, *t*(124) = -2.57, *sr* = -.21. When excluded, men higher on social distress tended to report liking their partners <u>*more*</u> than those lower on social distress, B = -1.43, *t*(24) = -3.44, *sr* = -.57. There was no evidence that social distress had an influence on partner dislike for not excluded men, and excluded and not excluded women, Bs = .04, .24, .17, *ts*(23,36,38) = .09, .82, .60, *n.s.*, respectively. There was no evidence that social distress moderated the link between social exclusion and participants' perceived interaction quality (B = -.30, *t*(124) = -.50, *n.s.*).

Second, there was a significant condition X sex X social distress interaction for eye contact, B = 1.89, *t*(68) = 2.12, *sr* = .22. Excluded women high in social

distress engaged in less eye contact than excluded women lower in social distress, B = -6.54, $t(13) = -2.09$, $sr = -.50$, $p = .06$, whereas excluded men high in social distress engaged in more eye contact than excluded men lower in social distress, B = 1.89, $t(13) = 2.08$, $sr = .32$, $p = .06$. There was no evidence for this effect for not excluded men and women, Bs = -.35, .68, $ts(14,25) = -.17, .72$, *n.s.*, respectively.

Finally, there was also a condition X sex X social distress interaction for observer rating of dyadic positive affect, B = -.51, $t(45) = -1.83$, $sr = -.23$, $p = .07$. That is, dyads of excluded men who involved a participant who was higher in social distress were observed to display less positive affect during their face-to-face interactions than did excluded dyads who involved participants lower on this dimension, B = -1.48, $t(5) = -3.24$, $sr = -.72$. There was no evidence that social distress influenced observed positive affect for excluded women dyads, not excluded men dyads or not excluded women dyads (Bs = .65, .31, .14, $ts(8,10,19) = .94, .45, .40$, *n.s.*, respectively).

There was a condition X sex X interaction anxiousness interaction for participants' perceived interaction quality, B = -.14, $t(118) = -1.81$, $sr = -.14$, $p = .07$, . That is, excluded men high in interaction anxiousness enjoyed their face-to-face interaction less than excluded men who were lower on interaction anxiousness, B = -.64, $t(22) = -3.77$, $sr = -.59$. There was no evidence that interaction anxiousness was associated with interaction quality for excluded women, not excluded men and women (Bs = .13, .07, -.02, $ts(35,21,37) = .92, -1.18, -.14$, *n.s.*, respectively). In addition, there was a condition X sex X social distress interaction

for use of expressive gestures (i.e., talking with hands) during the interaction, B = .89, $t(104) = 2.84$, $sr = .23$. That is, excluded women higher in social distress tend to use less expressive gestures during their interactions than did excluded women lower in social distress, B = -2.92, $t(28) = -3.64$, $sr = -.57$. There was no evidence that excluded men and not excluded men and women engaged in expressive gestures during their interactions (Bs = .69, -.66, -.67, $ts = 1.18, -.99, -1.69$, *n.s.*).

3.5.11.2 Secure Attachment Style

Securely attached individuals were expected to employ behaviors, both verbal and nonverbal, that would repair the interpersonal bonds that had been previously threatened when excluded. However, there was no evidence that secure attachment moderated the link between exclusion and behaviors in face-to-face interactions.

3.5.11.3 Need to Belong

Finally, I expected that individuals high in nBelong would engage in behaviors that would help them repair the bond that was threatened when excluded. There was a condition X nBelong interaction for participants' reports of needing to communicate with partner, B = .04, $t(122) = 1.88$, $sr = .16$, $p = .06$,. Not excluded participants high in nBelong reported a greater need to communicate with their interaction partner than did not excluded participants lower in nBelong (B = .06, $t(60) = 2.58$, $sr = .31$). There was no evidence that excluded partners high in nBelong reported a difference in needing to communicate with their interaction partner, B = -.02, $t(60) = -.41$, *n.s.* In addition, there was a condition X nBelong

interaction for participant initiating conversation with their interaction partner, B = .01, $t(117) = 1.98$, $sr = .18$. Not excluded persons higher in nBelong were more likely to initiate the conversation with their interaction partner, B = .02, $t(60) = 1.88$, $sr = .06$, $p = .07$. There was no evidence that excluded participants high in nBelong initiated conversations with their interaction partner, B = -.01, $t(57) = -.86$, *n.s.*

There was a condition X nBelong interaction for observer ratings of dyadic tension within the face-to-face interaction, B = -.08, $t(31) = -2.15$, $sr = -.29$. In other words, excluded participants who were high in nBelong were rated as having less tension and more harmonious interactions than excluded participants who were low in nBelong, B = .12, $t(10) = 2.65$, $sr = .53$. This effect was not observed with not excluded participants who were high in nBelong, B = -.08, $t(19) = -1.49$, *n.s.*

To summarize personality's moderating influences on face-to-face interactions, there were some condition X personality interactions, but there were no consistent or strong pattern of relationships. The nBelong had the most consistent moderating influence on exclusion/inclusion to short-term reactions. Not excluded participants high on nBelong felt more of a need to communicate and initiated conversations more frequently than did not excluded participants who were lower on nBelong. When excluded, participants higher on nBelong were observed to be in dyadic interactions that were more harmonious than dyadic interactions with persons lower on nBelong.

3.5.12 Do Threatened Needs Mediate the Link between Personality and Short-Term Reactions?

Finally, I examined whether personality influences short-term reactions through threatened needs. In other words, it is possible, after an exclusion episode, that personality's influence on behavior is indirect. Again, using procedures outlined in Preacher and Hayes (2004), I examined whether threatened needs carried the influence of personality to short-term reactions after being excluded. I again used both the Sobel test and bootstrapping procedures. For all participant behaviors, the standardized residuals were used after controlling for the confederate's behavior on the same dimension.

3.5.12.1 Need to Belong

Threatened needs mediated the link between nBelong and some short-term reactions. For example, the participant's perceptions of interaction quality, observed dyadic positive affect, the use of "I" words and the use of questions during face-to-face interactions were mediated by threatened self-esteem. That is, excluded persons higher on nBelong reported greater threatened self-esteem, which led to changes in their short-term behaviors. Although this pattern existed, there were also several null findings for this relationship as well (e.g., dyadic tension, use of "we" words, use of "you" words, fidgeting, smiling/laughter, body orientation, etc.). Thus, these findings should be considered preliminary and should be interpreted with caution.

3.5.12.2 Fear of Negative Evaluation

Second, threatened needs mediated the link between fear of negative evaluation and certain short-term reactions. Again, only threatened self-esteem mediated the link between fear of negative evaluation and observed dyadic positive and negative affect, observed dyadic awkwardness and tension, use of social references and questions during face-to-face interactions.

In sum, the relationship between nBelong and short-term reactions was mediated by threatened self-esteem. In addition, threatened self-esteem mediated the link between fear of negative evaluation to short-term reactions. That is, nBelong and fear of negative evaluation influenced threatened self-esteem and threatened self-esteem then influenced short-term reactions after being socially excluded (see Table 3.15). However, there were no indirect influences for interaction anxiousness, social distress, and attachment security.

Table 3.15 Indirect Effects of Threatened Self-Esteem Mediating the Link between Personality and Post-Exclusion (Short-Term) Reactions

	Product of Coefficients			Bootstrapping			
				Percentile 95% CI		Percentile 99% CI	
	Estimate	SE	Z	Lower	Upper	Lower	Upper
Need to Belong							
Perceived Quality	-0.02	.013	-1.61†	-0.05	0.00	-0.06	0.01
Dyadic Positive Affect	-0.08	0.04	-2.06*	**-0.15**	**-0.01**	-0.17	0.01
Use of I	-0.02	0.01	-1.58†	-0.04	0.01	-0.05	0.02
Use of Questions	0.02	0.01	1.62†	-0.003	0.06	-0.01	0.07
Fear of Negative Evaluation							
Dyadic Positive Affect	-0.15	0.07	-2.15*	**-0.28**	**-0.03**	-0.33	0.02
Dyadic Negative Affect	0.04	.025	1.70†	**0.002**	**0.09**	-0.01	0.12
Dyadic Awkward	0.11	0.06	1.74†	-0.01	0.22	-0.05	0.25
Dyadic Tension	0.10	0.05	1.89†	**0.01**	**0.19**	-0.01	0.22
Use of Social Reference	0.05	0.03	1.71†	**0.01**	**0.10**	-0.01	0.12
Use of Questions	0.06	0.03	1.94*	**0.01**	**0.11**	-0.00	0.13

Note: Each mediator was run separately due to problems associated with multicollinearity. *p< .05; **p< .01; †p < .05; Bootstrapping involves 1000 samples; if 0 does not fall within the confidence interval, the indirect effect is significant (in bold).

CHAPTER 4

DISCUSSION

The present study was designed to build basic empirical bridges among personality traits, threatened needs, and immediate and short-term reactions to social exclusion. To date there has been very little empirical research examining the moderating effects of personality on the link between ostracism and reactions to social exclusion. Moreover, although researchers (Williams, 1997; Williams & Zadro, 2001) have speculated that threatened needs mediate the influence of short-term reactions to exclusion, there is little empirical evidence that substantiates this indirect influence of ostracism in face-to-face interactions (via threatened needs). This study is an important first step in that direction.

Although this study took a somewhat exploratory approach rather than focusing exclusively on one personality dimension, the personality factors I examined in this dissertation were previously found to be important for interpersonal interactions of which ostracism is a part. For example, research has shown that excluded individuals often report negative reactions, specifically anxiety (Baumeister & Tice, 1990). Similarly, Leary (1990) proposed that social anxiety can result in being excluded from important groups. If a person is already socially

anxious before experiencing a social exclusion episode, these individuals may have more adverse reactions than persons who are lower on social anxiety. Recently, Zadro, Boland, and Richardson (2006) reported that people who were socially anxious reacted more negatively to being social excluded than did people who were lower in social anxiety.

Another personality factor closely related to interpersonal relationships is the need to belong (nBelong). People with a high nBelong are more concerned with their belongingness (or their inclusionary status in the group) than are people who score lower in nBelong. The need to belong is defined as a fundamental need or motivation to form close affective positive relationships with others (Baumeister & Leary, 1995). Accordingly, I expected that individuals with a high nBelong would experience a greater amount of negative affect in response to social exclusion than would persons lower in nBelong. However, these same individuals might also act in positive manner during interactions with someone who had excluded them in an attempt to regain their belongingness in the group.

Attachment style (i.e., secure and insecure) is an additional personality factor that might influence reactions to being socially excluded. Previous research has shown that attachment style can influence one's reactions to stressful situations, such as being a target of ostracism. Securely attached individuals have reported less psychological stress than insecurely attached individuals after experiencing a traumatic event (Kemp & Neimeyer, 1999). In addition, Simpson, Rholes, and Nelligan (1992) have found evidence that a secure attachment style can buffer

individuals against the adverse effects of stress. It is therefore reasonable to expect that a securely attached individual would experience less negative reactions to being socially excluded than an individual who is insecurely attached.

4.1 Threatened Needs

Williams' (1997) model of social exclusion proposes that four fundamental needs are threatened when one is excluded. For example, individuals who experienced social exclusion reported a threat to their belongingness need, a loss of control over the social situation, a decrease in self-esteem, and report that their existence is meaningless (Williams & Zadro, 2005). In the present study, I examined if personality influenced reactions to social exclusion. For example, I examined if personality influenced threatened needs, and immediate and short-term reactions to social exclusion.

First, I examined if individuals who experience an exclusion episode would report a greater threat to their needs than individuals who were not socially excluded (or included). As expected, individuals who were socially excluded experienced a threat to certain needs, specifically their belongingness, meaningful existence, self-esteem, and control needs. In other words, being ostracized threatened certain needs. These results support the findings of previous research (Williams, 2001; Williams & Sommer, 1997; Williams, Shore, & Grahe, 1998; Zardo, Williams, & Richardson, 2005). For example, Williams, Shore and Grahe (1998) found that ostracized individuals, specifically targets of the silent treatment, reported a threat to their meaningful existence. In addition, Zadro, Williams, and Richardson (2005)

found that ostracized individuals experienced a threat to their belonging needs. Leary, Tambor, Terdal, and Downs (1995) also found that being socially excluded from a group based on personal reasons led to a decrease in one's self-esteem; however, this result was not found when the person was excluded randomly. Similarly, family studies researchers have found that a child's self-worth is negatively affected when he/she is rejected by a parent (Dunn, Stocker, & Plomin, 1990).

Second, I examined personality's influence on threatened needs. I predicted that persons who were socially anxious would have more negative reactions to being socially excluded than would persons lower in social anxiety. In fact, I found that fear of negative evaluation and interaction anxiousness were both related to threatened needs, namely meaningful existence and self-esteem, across situations. In other words, socially anxious individuals felt a general sense of meaningless and poorer self-worth, regardless of the Cyberball condition in which they played. Although there was little support for the notion that social anxiety moderated the influence of exclusion on threatened needs, I did find a social anxiety main effect after controlling for condition. Therefore, the influences of social anxiety and exclusion are additive, with persons higher in social exclusion and social anxiety being the most threatened. Unexpectedly, social anxiety was not related to belongingness needs. A possible explanation for this finding may be that socially anxious individuals' belongingness needs were not as adversely affected when they were excluded by a stranger. However, their belongingness needs might be

negatively affected if they were excluded by an important other (i.e., friend or family member).

Finally, when the situation was somewhat ambiguous (as the not exclusion condition can be interpreted to be), not socially excluded participants who had a high on fear of negative evaluation felt that their control was more threatened than those with a low fear of negative evaluation. This finding may be the result of people with a high fear of negative evaluation perceiving that they were being excluded, to some degree, even when they were being included, which may in turn have led to a perceived loss of control of the situation. Another possible explanation for the reaction seen in the present study is that men who were not socially excluded and were also higher in fear of negative evaluation reported that they felt a loss of control over the situation and this in turn may have led to learned helplessness. Learned helplessness often results from feeling that one has no control over events and/or situation (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976). In other words, this feeling of uncontrollability results in feeling helpless to control the social situation and subsequent outcomes. This learned helplessness may have then influenced the participants' subsequent behavior during the face-to-face interaction. That is, the men who were not excluded and who were high in fear of negative evaluation may have felt that they had absolutely no control over the events of the Cyberball game and therefore had no control over the social situation and/or the outcome of events during the face-to-face interaction.

Another personality factor that was related to threatened needs was secure attachment. Securely attached people reported less of a threat to all their needs than people who were lower on secure attachment. This finding is consistent with those of previous research (Kemp & Neimeyer, 1999). For example, Kemp and Neimyer have found that, after experiencing a stressful event such as rejection or exclusion, individuals with a secure attachment style reported less psychological distress than individuals with insecure attachment styles did. However, in the present study, secure attachment did not moderate the link between social exclusion and threatened needs. Although secure attachment did not moderate this association, there was a trend toward a difference in the effect size for exclusion versus not exclusion (or inclusion), with the influence of attachment being stronger during episodes of exclusion. Moreover, the influence of secure attachment on threatened needs was found after controlling for exclusion. Thus, insecure individuals who were excluded suffered the greatest level of threatened needs. It, therefore, seems that secure attachment style tends to protect the individual from some, but not all, of the adverse effects associated with social ostracism. This finding is consistent with those of previous research (Mikulincer, Florian, & Weller, 1993; Simpson, Rholes, & Nelligan, 1992).

Finally, nBelong also influenced threatened needs. Individuals with a high nBelong felt more of a threat to their belongingness, self-esteem, and meaningful existence needs than did individuals who were low in nBelong. These findings are consistent with my predictions that persons higher in nBelong would report a greater

threat to their needs than individuals lower in nBelong. However, nBelong was not shown to be related to threatened control. Moreover, nBelong moderated the link between social exclusion and threatened needs, namely threatened self-esteem and threatened meaningful existence. That is, excluded persons with a higher nBelong were more likely to feel that their existence was meaningless and that they had a lower self-worth than excluded persons lower in nBelong. Previous research has shown that threats to one's belonging needs led to decreases in self-esteem (Leary, Tambor, Terdal, & Downs, 1995). In addition, individuals who have a high nBelong are more sensitive to social cues that signal their degree of belonging (or inclusion) (Pickett & Gardner, 2005). Consequently, a threat to their inclusionary status, such as exclusion or rejection, often leads to detrimental outcomes such as low self-worth, negative affect, and meaningless existence.

4.2 Immediate Reactions

I also tested whether socially excluded participants would report more negative immediate reactions (decrease in positive affect, increase in negative affect, dread of future interactions, and perceive the situation as threatening) than would participants who were not socially excluded. First, excluded participants reported a decrease in positive affect, while also reporting an increase in negative affect. This finding is consistent with previous research indicating that socially excluded persons experience negative immediate reactions (William, 2005). For example, Williams and colleagues (Zadro, Williams, & Richardson, 2005; Eisenberger, Libermann, & Williams, 2003) have found that participants who were socially excluded reported

experiencing a decrease in mood, specifically decreases in positive affect. Second, excluded participants reported a greater dread of future interactions with someone who had just excluded them than did participants who were included. This finding is consistent with previous research (Cheuk & Rosen, 1994) indicating that individuals expressed a desire to avoid others who had previously excluded or ostracized them. Finally, condition was not related to threat perception. This finding is contrary to that of Zadro, Boland, and Richardson (2006), who did find that excluded participants perceived the social exclusion situation as threatening. A possible explanation for this difference in findings is that Zadro and colleagues administered the threat perception task 45 minutes after playing Cyberball and the participants, in the present study, completed the threat perception task immediately following the conclusion of the game. That is, participants in Zadro et al.'s study may have had time to ruminate about the social exclusion episode and may have then perceived the social exclusion situation as threatening.

Next, I examined personality's influence on short-term reactions to social exclusion. Again, I expected that social anxiety and nBelong would intensify immediate reactions to social exclusion, whereas a secure attachment would buffer against these negative reactions. The data revealed that all social anxiety constructs were related to dread of future interactions. In other words, persons who were higher in social anxiety reported dreading their interactions following the Cyberball game, regardless of whether they were included or excluded. This finding may be the result of both the inclusion and exclusion condition requiring the socially

anxious participant to interact with a stranger in a laboratory setting (i.e., a strange situation). This interpretation is consistent with previous theory and research that views anxiety as an innate negative affective state that is the result of uncontrollability and unpredictability (e.g., Chorpita & Barlow, 1998).

In addition, persons higher in fear of negative evaluation and interaction anxiousness perceived the situation as threatening, regardless of condition. This finding is also consistent with those of previous research (Mathews & MacLeod, 1985; Zadro, Boland, & Richardson, 2006). For example, Zadro and colleagues found that individuals who were socially anxious perceived ambiguous situations as threatening. Contrary to my predictions, fear of negative evaluation, social distress, and interaction anxiousness did not moderate the association between social exclusion and immediate reactions. However, the influence of social anxiety was again additive. That is, people who were both excluded and socially anxious reported the highest level of dread and threat perception. Although social anxiety did not exacerbate the influence of ostracism to short-term reactions, excluded persons who scored higher on social anxiety did have the worse short-term outcomes.

On the other hand, secure attachment style was expected to weaken the immediate reactions to being socially excluded because people with a higher secure attachment should report less dread of future interactions and they should not perceive the situation as threatening. As predicted, secure attachment style was negatively related to dread of future interactions. That is, people with high secure attachment scores reported less dread of future interactions than did people with

lower secure attachment scores. In addition, persons high in secure attachment also reported an increase in positive affect. These results are consistent with those of previous research (e.g., Simpson, Rholes, & Nelligan, 1992) which suggest that secure attachment style can buffer individuals against the negative effects of stressful situations such as being rejected or excluded. My findings suggest that although people who scored higher on attachment security were not completely protected against the negative influence of ostracism (i.e., there was no evidence of moderation), they were better off than someone who was both excluded and insecure in their attachment style. In fact, secure attachment protected an individuals' self-esteem from being negatively affected by social exclusion, which in turn, buffered against dread of future interactions and threat perception.

Consistent with previous research findings (Gardner, Pickett, & Brewer, 2000; Pickett & Gardner, 2005), I predicted that participants with a high nBelong would report more negative immediate reactions after playing the Cyberball game than participants with a lower nBelong, especially after being excluded. When a person's belonging need is unmet, such as when one is excluded, he/she should experience negative psychological outcomes, such as anxiety (Baumeister & Tice, 1990) and negative affect (Williams, Cheung, & Choi, 2000). Consistent with this expectation, people who scored higher in nBelong reported a decrease in positive affect while also reporting an increase in negative affect. Moreover, nBelong moderated the association between social exclusion and changes in positive affect. As expected, excluded people who scored higher in nBelong reported experiencing a

decrease in positive affect. There was no relation between nBelong and changes in positive affect in the inclusion condition. In addition, when people were excluded, nBelong influenced threatened meaningful existence, which in turn led to decreased positive affect. Similarly, nBelong predisposed excluded individuals to experience a threat to their self-esteem, which in turn led to increases in negative affect. This outcome is consistent with previous research findings (Leary, 1983; Taylor & Brown, 1988) indicating that decreases in self-esteem lead to increased negative affect.

Unexpectedly, individuals who scored higher in nBelong did not report a greater dread of future interactions, nor did they perceive the situation as threatening. With the benefit of hindsight, one could argue that people with a high nBelong may not dread interacting with a stranger or feel especially threatened given their strong approach motivation toward others in general (Baumeister & Leary, 1995). Leary's (1990) idea of relational valuation states that one values important, close relationships with others; therefore, one could surmise that a stranger in a laboratory would not be considered a valuable relationship. Thus, it is possible that persons high in nBelong may react quite differently if the future partner was someone important to them (e.g., a member of an important in-group).

Finally, secure attachment did influence immediate reactions to being socially excluded. People who scored higher on secure attachment reported lower levels of threat perception and increases in positive affect. Men with a secure attachment style reported less dread of future interactions. Moreover, threatened

self-esteem mediated the link between secure attachment style and dread of future interactions and threat perception for people who had been excluded. These findings are consistent with findings from previous research on attachment (e.g., Kemp & Neimeyer, 1999; Mikulincer et al., 2001) that securely attached individuals would not be as negatively affected by social exclusion as individuals who were not securely attached.

4.2.1 Do Threatened Needs Influence Immediate Reactions?

To further examine my preliminary theoretical model (Figure 1), I tested the indirect effects of exclusion on immediate reactions. Although these analyses were exploratory in nature, this was an important empirical step because many researchers have theorized about this indirect association (Williams & Zadro, 2001; Williams, 2005), but no researcher to date has directly tested the indirect effect. In addition, no researcher has examined the differential predictive validity of different threatened needs. My results suggest that the influence of exclusion on dread of future interactions and changes in negative affect was mediated by threatened self-esteem, whereas threatened meaningful existence mediated the association between ostracism and changes in positive affect. In other words, exclusion did indeed heighten threatened needs. However, only certain needs, namely threatened self-esteem and meaningful existence, seemed to carry this influence to immediate reactions, especially dread of future interactions and changes in positive and negative affect. Interestingly, many researchers have focused on the unique importance of belongingness, rather than other needs, in the prediction of social

outcomes (Baumeister & Leary, 1995; Pickett & Gardner, 2005); my preliminary findings do not support this theoretical supposition and further suggest that threatened self-esteem may be as important a need to examine as belongingness.

4.3 Short-Term Reactions

Finally, I examined whether participants had negative short-term reactions to being excluded. As expected, excluded participants rated their interaction as less enjoyable than did included participants. Contrary to predictions, however, not socially excluded participants reported more of a need to communicate with their interaction partner than did socially excluded participants. In addition, excluded participants did not engage in behaviors that would help repair the interpersonal bond that was previously threatened. For example, excluded participants oriented their bodies away from confederates and engaged in more fidgeting behaviors. These findings are the opposite of what would be predicted according to previous theoretical suppositions (Baumeister & Leary, 1995) that excluded persons are more likely to engage in behaviors that would satisfy their need to belong and consequently become accepted by others who had previously excluded or rejected them. That is, individuals were hypothesized to engage in social behaviors that would help them to regain their belongingness (or inclusionary status).

Exclusion was also indirectly related to linguistic style (via threatened needs). These linguistic style differences were of the type predicted of individuals who had experienced a trauma (use of fewer 1st person pronouns) and asked fewer

questions as a way to keep their distance. These findings are consistent with those of previous research (Cheek & Buss, 1981; Glasgow & Arkowitz, 1975; Pennebaker, 2002). For example, Pennebaker (2002) also reported fewer 1st person pronouns being used after a traumatic event, such as the death of a significant other. In addition, Twenge, Catanese, and Baumeister (2003) found that excluded participants were more likely to avoid self-awareness. That is, excluded participants in the current study may have used fewer 1st person pronouns as a way to escape from self-awareness. However, this finding does not support the idea of threatened meaningful existence. That is, if one felt as if their existence was meaningless, following a rejection or exclusion episode, he/she should use more 1st person pronouns in order to repair his/her meaningful existence need and to put the focus back on the self (i.e., increase self-awareness).

In sum, it appeared as if the excluded participants might have been trying to distance themselves from the person who just excluded them rather than trying to connect with the person who had excluded them. This pattern of results is consistent with the idea that rejection or exclusion activates a self-protective avoidance motivation (MacDonald & Leary, 2006). That is, when one is rejected or excluded (including even perceived exclusion) one is more motivated to avoid the person who has previously excluded one. Indeed it is possible that, excluded participants may have evaluated the relationship potential with the other "participant" as so low that they did not experience a threat to their belongingness needs. A stranger one has never met before and will probably never interact with again is probably not

considered an important or valuable relationship partner; thus, excluded participants may not have been motivated to try to connect with the other participant during the face-to-face interaction.

Another finding for linguistic style suggests a compensatory behavior of different type. Excluded participants reported more threatened self-esteem, compared to the not excluded participants, which in turn led them to use more social referents in their speech. This finding suggests that although the participant may not have attempted to repair bonds with the perpetrator of the exclusion, he/she may symbolically have been attempting to reconnect to important others by discussing them in the semi-structured interaction. Future research should explore this possibility.

It is clear from the present, as well as previous, data that an individual's personality can influence his/her short-term reactions to social exclusion. For example, persons with a high nBelong may have more approach motivation rather than avoidance motivation (Baumeister & Leary, 1995). In addition, Baumeister and DeWall (2005) believe that the self's executive function has evolved to control certain behaviors, such as aggressive tendencies and selfish impulses, that can help to ensure that one is included. Furthermore, Baumeister and DeWall postulate that one of the self's major motivations is towards belongingness; being excluded or ostracized is distressing and may lead to fear of future rejection. In fact, being excluded once may have adverse effects on one's subsequent nBelong.

Baumeister and DeWall argue that people higher in nBelong may try to repair their belongingness needs by attempting to connect with the other "participant" during the face-to-face interaction, whereas people lower in nBelong should be less likely to repair this need. Again, I expected personality factors to influence short-term reactions. For example, I anticipated that socially anxious persons would have more awkward and less harmonious interactions than persons lower in social anxiety. In addition, I also expected persons higher in nBelong to engage in behaviors that were aimed at repairing the bond that was previously threatened. This idea is consistent with Baumeister and Leary's (1995) hypothesis that nBelong individuals would try to repair their needs that were threatened, specifically belongingness. When one's belongingness need is threatened an individual experiences an increase in negative affect, such as anxiety. Consequently, an individual will engage in behaviors (i.e., positive affect) that are aimed at reducing this anxiety.

Interaction anxiousness was negatively related to number of words spoken. That is, individuals who were higher in interaction anxiousness tended to speak to the confederate less than individuals who were lower in interaction anxiousness. In addition, men higher in interaction anxiousness orientated their bodies away from their interaction partner. Again, socially anxious individuals in this study were probably engaging in behaviors (e.g., body turned away from confederate) that disaffiliate themselves from the situation. This finding is consistent with previous research on social anxiety (Daly & McCroskey, 1984; Leary, 1983a). For example,

Cheek and Buss (1981) have found that socially anxious individuals try to restrict their involvement (e.g., speak less and for less duration) during the interaction and because they were limiting their involvement they may have perceived the interaction quality as less enjoyable than did persons who were lower in social anxiety.

As expected, securely attached persons reported higher interaction quality and a greater need to communicate with their partner than persons lower in secure attachment. Furthermore, securely attached men were more likely to report having enjoyed their interaction and having had a need to communicate with their interaction partner. These findings are consistent with the attachment theory view (Bartholomew & Horowitz, 1991) that because securely attached individuals have a positive view of the self and of others, they should report enjoying their interactions. Unexpectedly, secure attachment was not related to linguistic style and to nonverbal behaviors that are aimed at helping the individual repair previously threatened bonds, with one exception. Securely attached men used more positive emotion words during their conversations with the confederate than did men who were low on secure attachment. Previous research (Mikulincer et al., 2001) has shown that securely attached individuals have secure base schemas that include positive affect. Furthermore, Mikulincer and colleague found that an activation of a secure base schema after a stressful event led to individuals maintaining positive affect. Thus, securely attached men may have used more positive emotion words as a result of having more positive schemas.

Unexpectedly, not socially excluded participants with a higher nBelong reported a greater need to communicate and initiated the conversation with their interaction partner. However, I expected that excluded persons higher in nBelong would be the ones to report a greater need to communicate and initiate conversations, consistent with Pickett and Gardner's (2005) regulatory model of belonging need. Pickett and Gardner suggest that when one's appraisal of his/her belonging is unsatisfactory, it activates a social monitoring system. This system, in turn, leads the individual to engage in behaviors that would replenish his/her belongingness need. In addition to alerting an individual to their inclusionary status, the social monitoring system enables him/her to become aware of relationship-enhancing behaviors that would allow him/her to regain belongingness need and avoid future rejection. That is, individuals with a high nBelong should theoretically seek out ways to satisfy their need to belong after being excluded or ostracized.

Following the model of belonging need (Pickett & Gardner, 2005), I expected excluded persons higher in nBelong to engage in more verbal and nonverbal behaviors during their subsequent interaction with the other "participant" in order to help them repair the previously threatened bond. Contrary to this prediction, individuals higher on nBelong reported a greater need to communicate and initiated more conversations with their interaction partner only when they had been *included* (or not socially excluded). However, this finding may be due to the fact that excluded participants may not have had a desire to communicate with a

stranger who had just excluded them, they might react very differently, and in the manner predicted by Pickett and Gardner (2005), if it was an important, relevant relationship that was threatened. Nevertheless, dyads with excluded participants high in nBelong were rated as having less tension and more harmonious interactions than dyads with excluded participants low in nBelong. This finding can be taken as evidence that persons high in nBelong were on some level trying to establish a connection with the person who had just excluded them.

In addition, according to the privacy regulation theory (Altman, 1975; PRT), individuals often try to regulate or control who they come into contact with. That is, people use an interpersonal technique, PRT, in order to attain a certain degree of privacy within their interpersonal relationships. Therefore, the participants in the present study may have held back during their face-to-face interactions in order to protect and/or regulate their privacy as a way to regain control of the situation.

With regard to the participants' short-term reactions to social exclusion, there were many sex of participant effects, with the influence of personality often being stronger for the men than for the women. For example, men who were higher in social distress reported less dislike of their interaction partner than did men who were lower in social distress. This finding did not hold for women. A possibility for this finding is that sex is somewhat confounded with ethnicity. That is, in this dissertation, there were a greater number of Asian-American and Hispanic men than there were women of the same ethnicity/race (Men (29%); Women (17%); $\chi 2(1)=$

3.11, $p = .08$); these ethnic groups are considered to be more collectivistic in nature. Markus and Kitayama (1991) argued that culture often shapes the behaviors, cognitions, emotions, and motivations of an individual. For example, persons from individualistic cultures value uniqueness and independence. On the other hand, persons from collectivistic cultures value relationships and interdependence. That is, individuals from collectivistic cultures tend to emphasis relatedness with others while maintaining harmonious interactions. On the other hand, individuals from individualistic cultures tend to maintain their independence from others. As a result, socially anxious persons from individualistic and collectivistic cultures may react very differently to being excluded. For example, socially anxious persons from collectivistic cultures may be more adversely affected by being excluded than socially anxious persons from individualistic cultures. Furthermore, others (e.g., Reid, 2002) have argued that the interaction between sex and ethnicity needs to be taken into consideration when designing studies. However, before putting too much emphasis on this result, future research would need to replicate and extend the current findings.

4.4 Future Directions

The findings from this study bring to light many potential avenues for future research. First, a possible explanation as to why individuals did not engage in behaviors to help repair the threatened bond may be that these excluded individuals would rather seek comfort from friends or family members rather than from a

stranger (who perpetrated the exclusion). That is, these participants might have immediately called a friend or family member after the study to connect with an important other. A possible future direction would be to manipulate the importance (or significance) of the dyadic partner as well as whether he/she was the perpetrator of the exclusion. That is, excluded participants could interact with an in-group or an out-group member. I would predict individuals who has just been excluded would try to repair or maintain bonds more with an in-group member than an out-group member, especially if the group was considered important to the individual and had nothing to do with the initial ostracism.

Second, the confederates in the present study were instructed to maintain a neutral and consistent manner throughout the interaction; participants might have been reacting to the confederates' behaviors instead of behaving in manner they normally would. In other words, the confederate's behavior may have restricted the range of the participants' behaviors in the dyadic interactions. In fact, research on interpersonal behavior (Markey, Funder, & Ozer, 2003) has concluded that one dyad member's behavior typically does influence their interaction partner's behavior. Therefore, having the confederate act in a neutral manner may have influenced the participant to reciprocate with the same behaviors (biasing toward finding null results). Future research should consider have pairs of actual participants interact (e.g., exclude-exclude; include-exclude, and include-include pairs).

Third, I found that for some of my participants may have interpreted the not social exclusion (or inclusion) episode differently depending on their personality. That is, receiving the ball only 25% of the time is a somewhat an ambiguous situation. Moreover, the participants did not know that they received the ball equally (i.e., 25%). This inclusion situation may be somewhat ambiguous and may have led to a greater threat to their needs for some individuals. In order to examine this possibility, future studies could manipulate the level of ambiguity. One possibility would be to use the change of heart paradigm, which is when a participant is included for a few trials at the beginning, then excluded for several trials, and then included again for the rest of the trials. In this type of paradigm the situation is no longer ambiguous.

Fourth, the ordering of the measures (i.e., post mood questionnaire, the Cyberball questionnaires, threat perception measure, and the dread of future interaction questionnaire) was the same for all participants. This ordering may have affected participants' responses. To avoid this potential issue in the future, the measures could be counterbalanced. In addition, interacting with a stranger could have produced some of the reactions seen in this study. Again, a future direction would be to have the participants interact with a person that is important to them (i.e., dating partner or friend).

Finally, future studies could examine if certain situations threaten some needs more than other needs. For example, the present study unexpectedly found

that threatened self-esteem influenced immediate and short-term outcomes (compared to belongingness). The threatened self-esteem may however be related to the other situational influences. These current findings clearly need to be replicated and extended. For example, a future study could have excluded participants interact with a stranger who did not previously exclude them to determine if they would be more willing to connect with the stranger, thus trying to repair their threatened needs. Another future study could involve manipulating group membership/importance when ostracizing. Group membership may influence which needs are most threatened. For example, being excluded by an important group member may threaten belongingness rather than other needs, such as control. When one is excluded by a stranger, like in this study, the influence of belongingness on short-term outcome may have been weaker because the participants may not have cared to reconnect to a stranger (who just ostracized them). However, this study did demonstrate that being excluded by a stranger did threaten one's self-esteem.

4.5 Final Conclusions

The results in the present study replicate previous findings (e.g., Williams, 1997; Williams & Zadro, 2001, 2005; Zadro, Boland, & Richardson, 2006) in revealing that ostracism is a devastating experience that leads to a number of negative reactions (e.g., threatened needs, increase in negative affect, perceiving the situation as threatening, dreading future social interactions). However, previous researchers did not examine how personality variables might influence reactions to

ostracism. The present study took an exploratory approach in order to explore the personality factors that should influence reactions to social exclusion. A major contribution of this dissertation study was the finding that several personality factors influenced immediate and short-term reactions to social exclusion. Specifically, social anxiety (i.e., fear of negative evaluation, social distress, and interaction anxiousness) and nBelong exacerbate immediate and short-term reactions to being ostracized. In addition, secure attachment style was found to buffer an individual against the some of the negative outcomes of social ostracism.

An important theoretical question is *why* some personality factors, but not others, influenced reactions to social exclusion; specifically, why social anxiety and nBelong exacerbated reactions to immediate and short-term reactions. One possible explanation involves an individual's need to form and maintain affectively positive interactions with others (Baumeister & Leary, 1995). The present study has shown when one has a high nBelong and then experiences social exclusion, more adverse reactions occur than if the individual has a lower nBelong. Conversely, secure attachment was shown to buffer an individual against the negative effects of social exclusion. The results suggest that although no one is completely immune from the power of ostracism, personality may be an important buffer against some of its influence.

Previous researchers (Baumeister & Leary, 1995; Williams, 2005) have tended to focus on threatened belongingness and the negative psychological effects of being rejected or excluded. Self-esteem may, however, be equally important as

belongingness, and should be studied more extensively to further our understanding of the negative outcomes of being socially ostracized. Self-esteem is important to one's overall sense of self-worth (Leary, 1990). When self-esteem is threatened, such as when one is excluded or rejected, the individual may devalue their worth as a person and consequently feel a threat to their belongingness, meaningful existence, and control needs. Therefore, viewing self-esteem as encompassing the other fundamental needs may explain why threatened self-esteem was the need that I found to most frequently mediate other processes.

Although participants in the present study reported a threat to all their needs, it seems that self-esteem was the need that most influenced other outcomes. An important empirical question involves why self-esteem was consistently a unique mediator, and not belongingness or meaningful existence, after an exclusion episode. One possibility comes from the sociometor theory (Leary et al., 1995), which postulates that self-esteem acts as a sociometer that monitors one's inclusion versus exclusion status. In other words, one's sociometer signals an individual if he/she is in jeopardy of being the target of interpersonal rejection (i.e., exclusion, rejection, and ostracism). The individual is therefore able to change his/her behavior in order to decrease the likelihood of being excluded or ostracized by others. Viewing self-esteem in this manner, one could reason that self-esteem acts as a gauge to one's belongingness. In fact, research (Leary et al., 1995) has shown that trait self-esteem is highly correlated with levels of perceived acceptance. That is, when an individual

feels accepted by others, his/her self-esteem is increased, whereas rejection or exclusion by others can cause a decrease in state self-esteem. Similarly, Haupt and Leary (1997) have found that individuals with low trait self-esteem showed a decrease in their state self-esteem after being excluded from a group. The findings in this dissertation support the idea that social exclusion lowers state self-esteem.

In addition, self-esteem has been found to buffer individuals against the negative effects of being socially excluded or rejected by others (Nezlek et al., 1997). Leary and his colleagues (Leary, 1990; Leary & Downs, 1995) believe that high self-esteem protects an individual from the negative effects of being socially excluded or rejected by others (Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997). Research has also shown that individuals with low self-esteem are more likely to report negative affect states (Leary, 1983; Taylor & Brown, 1988). In the present study, mediational results showed that when one's self-esteem was threatened by social exclusion, the individual reported an increase in negative affect. Baumeister (1986) postulated that one of the most important functions of the self is to form and maintain strong interpersonal bonds with others. In the absence of strong interpersonal bonds, one may become extremely unhappy; this unhappiness can lead to a multitude of other adverse reactions such as loneliness, anxiety, and depression (Baumeister, 1991; Baumeister & Tice, 1990).

In sum, many researchers (e.g., Zadro, Williams, and Richardson, 2004) believe that no one is immune to the negative power of ostracism and that this

sensitivity to ostracism is both evolutionarily based and adaptive. Although the sensitivity to ostracism may be adaptive, personality may moderate this sensitivity and the negative outcomes associated with it. To date, researchers have not closely examined personality or the mediational influences of threatened needs on behavioral outcomes when one is ostracized. The present study has set the stage for understanding the importance of how personality can influence social ostracism's effect, as well as better understanding how threatened needs mediate these immediate and short-term outcomes.

APPENDIX A

FACTOR ANALYSIS RESULTS FOR PARTICIPANTS' POST-INTERACTION PERCEPTIONS

	Factor Loadings	
	Factor 1 Perceived Interaction Quality	Factor 2 Dislike of Partner
Awkward, forced, or strained	-.496	
Smooth, natural, relaxed	.609	
Involving	.660	
Accepted and respected	.741	
Interact in future	.635	
Enjoy Interaction	.758	
Lead in conversation	.544	
Like other person	.755	
Good mood	.744	
Excited	.527	
Treated well	.663	
Put down, patronized, rejected		.571
Angry, agitated, or annoyed		.515
Frustrated		.584
Alphas for Subscales	.86	.83
Variance Accounted for by Factor	28.12	11.85

APPENDIX B

CONFEDERATE INSTRUCTIONS

Special Instructions to Confederates
Face-to-Face Interaction

- Confederates will always sit on the right-hand side of the couch a few inches from the arm of the couch.
- When I am giving the perceptual task instructions, act as if you are a real participant. The 6-minute dyadic interaction will not start until I leave the room. That is, it will start after I tell you that I need to go to the Psychology office for a new light bulb. At that point, the interaction will begin.
- You will sit in a relaxed manner (i.e., maintain a neutral posture) with your back against the couch, legs straight in front of you and crossed at the ankles. Your hands will be in your lap, holding the clipboard with the color perception form on it. Therefore, maintaining a neutral manner with all participants.
- **Do NOT** discuss the first part of the experiment (i.e., Cyberball). Participant will also be reminded not to talk about the first part of the experiment.
    - **If participant tries to talk about the first part of the experiment—say, "I don't think we are supposed to talk about that part of the experiment."**
- You are not to offer any prompts or ask questions unless reciprocating a question previously asked by the participant or if there has been a pause in the conversation for more than 30 seconds.
- Participant may introduce him/herself, reciprocate by telling the participant your name.
- If the participant has not started a conversation with you after 30 seconds, you will try to begin a conversation by saying "What do you think this task will be like?"
- You can allow pauses in the conversation; however, if there is a pause for longer than 20 seconds, you will ask another question.
    - That is, 20 seconds after the last utterance from either you or the participant.
- When asking questions, answering participants, and/or listening to participant look in the participant's general direction (i.e., turn head towards participant).
- You should make an initial eye contact for a specified interval (let's try 5 seconds and if that seems unnatural we will try 10 seconds) then look away (perhaps down at the clipboard) and then look back and make eye contact for another specified interval (5 seconds), etc. Brief intervals of eye contact should occur for each speaking turn--that is, you look at the other when he or she begins a speaking turn, then look away, then look back, etc., and finally look again at the end of his/her speaking turn when you are about to "take the floor." Setting the eye-contact intervals at something in the range of 5-10 seconds should allow enough time for this. And similar small intervals

of eye contact within speaking turns should signal interest and involvement without sacrificing the "natural" quality of the visual interaction.

- At this point the participant may only give a one-word answer or may decide to engage in a conversation (must be prepared for both).
    - If participant gives a one-word answer, wait for another 20 seconds, then ask participant "Are you taking Intro to Psyc too?" If participant answers "yes" and then asks you if you are also in Intro to Psyc, answer "yes."
    - If participant still seems reluctant to engage in a conversation with you, wait another 20 seconds, then ask participant (if participant is taking Intro to Psyc), "Who is your Intro to Psyc professor?" If NOT intro, "Are you doing the experiment for extra credit?" then ask, "What class are you getting credit for?"
    - This is a list of questions to ask the participant after every 20 second pauses:
        - If participant asks you, "Who is your Intro to Psyc professor is?" **DO NOT** say the same name he/she said; instead tell them "Dr. Kopp." In addition, if participant ask when you are taking the class, tell him/her MWF 9-9:50am. (All the experimental sessions should be after 10am, so this time will not conflict with the experiment).
        - Participant may know him, he/she may ask: "Do you like him?" Respond: "Yeah, he's okay."
        - If participant by chance knows that Dr. Kopp is not teaching this semester. Tell the participant "I think that is his name, but I'm not sure. I'm really bad with names."
        - If participant asks you to describe him, say, "He is an older man, average height, I think brown hair."
    - If participant may ask if you live on campus, say "no." Tell him/her "I live in North Arlington off of 360 at the Riverhill apartments, before the airport" Participant may ask you how long you've lived there, respond: "I just moved there." Try to be as vague as possible.
    - If participant ask, "Where were you for the first part of the experiment?" tell him/her "I was just down the hall." Again, if participant tries to talk about the first part of the experiment—tell him/her "I don't think she wants us to talk about the first part of the experiment."
    - Participant may ask: "What is your major?" Response: "I have not decided yet."
- How to handle smiling:
    - Smile only when it is necessary, that is, keep a neutral manner. Do not engage in more smiling with participants than necessary. Most

important try to keep the amount of smiling consistent with all participants.

- If there are no pauses and the participant wants to engage in a conversation, keep the conversation up. Talk to them as you normally would talk to someone. If participant is asking questions, answer them and reciprocate the question. However, do not give up more information than the participant asked for.

APPENDIX C

SCALES

Demographic Questionnaire

1. What best reflects or represents your gender?
    a. Male
    b. Female
2. How old are you? (BIRTHDATE) _____
3. What best reflects or represents your racial or ethnic background?
    a. **American Indian or Alaskan Native-** A person having origins in any of the original peoples of North America or South America (including Central America), and who maintains a tribal affiliation or community attachment.
    b. **Asian**- A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
    c. **Black or African American** – A person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American"
    d. **Native Hawaiian or Other Pacific Islander** – A person having origins in any of the original peoples of Hawaii, Guam, Somoa, or other Pacific Islands.
    e. **White/Anglo-American**- A person having origins in any of the other peoples of Europe, North Africa, or the Middle East

f. **Hispanic or Latino**- A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin.

g. **Other/Multiracial**

4. Which of the following best describes your father's (or legal guardian's) level of education?

a. No high school diploma or GED

b. A high school diploma or GED

c. Some college or university education but no degree

d. A two-year degree from a community college or university

e. A four-year (bachelor's) degree from a college or university

f. A master's degree from a college or university

g. A doctoral (Ph.d) degree from a college or university

5. Which of the following best describes your mother's (or legal guardian's) level of education? [If you already answered with respect to your legal guardian in the item above, you may skip this item.]

a. No high school diploma or GED

b. A high school diploma or GED

c. Some college or university education but no degree

d. A two-year degree from a community college or university

e. A four-year (bachelor's) degree from a college or university

f. A master's degree from a college or university

g. A doctoral (Ph.d) degree from a college or university

Adult Attachment Questionnaire (Simpson, Rholes, & Nelligan, 1992)

Please indicate how you typically fell toward romantic dating partners in general. Keep in mind that there are no right or wrong answers.

1	7
I Strongly Disagree	I Strongly Agree

1. I find it relatively easy to get close to others.
2. I'm not very comfortable having to depend on other people.
3. I'm comfortable having others depend on me.
4. I rarely worry about being abandoned by others.
5. I don't like people getting too close to me.
6. I'm somewhat uncomfortable being too close to others.
7. I find it difficult to trust others completely.
8. I'm nervous whenever anyone gets too close to me.
9. Others often want me to be more intimate than I feel comfortable being.
10. Others often are reluctant to get as close as I would like.
11. I often worry that my partner(s) don't really love me.
12. I rarely worry about my partner(s) leaving me.
13. I often want to merge completely with others, and this desire sometimes scares them away.
14. I'm confident others would never hurt me by suddenly ending our relationship.
15. I usually want more closeness and intimacy than others do.

16. The thought of being left by others rarely enters my mind.

17. I'm confident that my partner(s) love me just as much as I love them.

Revised Social Anxiety Scale for Children, General and Specific

LaGreca, Dandes, Wick, Shaw, and Stone (1988)

0 = Never true
1 = Sometimes true
2 = Always true

1. I worry about doing something new in front of other people.
2. I worry about being teased.
3. I feel shy around people that I don't know.
4. I'm quiet when I'm with a group of people.
5. I worry about what other people think of me.
6. I feel that other people are making fun of me.
7. I get nervous when I talk to new people.
8. I worry about what other people say about me.
9. I only talk to people I know really well.
10. I am afraid that other people will not like me.

The Need to Belong Scale (NTB)

Indicate the degree to which each statement is true or characteristic of you on this 5-point scale.

1 Not at all
2 Slightly
3 Moderately
4 Very
5 Extremely

1. If other people do not seem to accept me, I do not let it bother me.
2. I try hard not to do things that will make other people avoid or reject me.
3. I seldom worry about whether other people care about me.
4. I need to feel that there are people I can turn to in times of need.
5. I want other people to accept me.
6. I do not like being alone.
7. Being apart from my friends for long periods of time does not bother me.
8. I have a strong "need to belong."
9. It bothers me a great deal when I am not included in other people's plans.
10. My feelings are easily hurt when I feel that others do not accept me.

Interaction Anxiousness Scale

Leary (1983)

For each item, indicate the degree to which the statement is characteristic or true of you using the five-point scale

1 = not at all characteristic
2 = slightly characteristic
3 = moderately characteristic
4 = very characteristic
5 = extremely characteristic

1. I often feel nervous in casual get-togethers.
2. I usually feel uncomfortable when I am in a group of people I don't know.
3. I am usually at ease when speaking to a member of the opposite sex. (Reverse score)
4. I get nervous when I must talk to a teacher or boss.
5. Parties often make me feel anxious and uncomfortable.
6. I am probably less shy in social interactions than most people. (Reverse score)
7. I sometimes feel tense when talking to people of my own sex if I don't know them very well.
8. I would be nervous if I was being interviewed for a job.
9. I wish I had more confidence in social situations.
10. I seldom feel anxious in social situations. (Reverse score)
11. In general, I am a shy person.
12. I often feel nervous when talking to an attractive member of the opposite sex.
13. I often get nervous when calling someone I don't know very well on the telephone.
14. I get nervous when I speak to someone in a position of authority.
15. I usually feel relaxed around other people, even people who are quite different from me. (Reverse score)

EAQ

Directions: To what extent do the following words describe your current feelings? Please circle the number that best fits your response.

1. **Angry**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

2. **Enthusiastic**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

3. **Attentive**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

4. **Agitated**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

5. **Afraid**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

6. **Active**

1	2	3	4	5
very slightly	slightly	neutral	somewhat	extremely

or not at all

7. **Jittery**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

8. **Annoyed**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

9. **Alert**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

10. **Inspired**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

11. **In a Good Mood**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

12. **Hostile**

1	2	3	4	5
very slightly or not at all	slightly	neutral	somewhat	extremely

13. **Nervous**

1	2	3	4	5

very slightly slightly neutral somewhat
extremely
or not at all

14. **Proud**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

15. **Determined**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

16. **Interested**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

17. **Bad**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

18. **Scared**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

19. **Frustrated**

1 2 3 4 5
very slightly slightly neutral somewhat
extremely
or not at all

20. **Strong**

1 2 3 4 5

very slightly	slightly	neutral	somewhat	extremely
or not at all				

21. **Uplifted**

1	2	3	4	5
very slightly	slightly	neutral	somewhat	extremely
or not at all				

22. **Irritable**

1	2	3	4	5
very slightly	slightly	neutral	somewhat	extremely
or not at all				

23. **Excited**

1	2	3	4	5
very slightly	slightly	neutral	somewhat	extremely
or not at all				

24. **Happy**

1	2	3	4	5
very slightly	slightly	neutral	somewhat	extremely
or not at all				

Cyberball Questionnaire Version 1

Answer the next question using this 10-point scale

1	2	3	4	5	6	7	8	9	10
Rejected									Accepted

1. To what extent were you included by the other participants during the game? ___

Answer the next questions using this 9-point scale:

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

Belongingness Items

2. I felt poorly accepted by the other participants. _____
3. I felt as though I had made a "connection" or bonded with one or more of the participants during the Cyberball game. _____
4. I felt like an outsider during the Cyberball game. _____

Control Items

5. I felt that I was able to throw the ball as often as I wanted during the game. _____
6. I felt somewhat frustrated during the Cyberball game. _____
7. I felt that my performance (e.g., catching the ball, deciding whom to throw the ball to) had some effect on the direction of the game. _____

Self-Esteem Items

8. During the Cyberball game, I felt good about myself. _____
9. I felt somewhat inadequate during the Cyberball game. _____

Meaningful Existence Items

10. I felt that the other participants failed to perceive me as a worthy and likable person. _____
11. I felt non-existent during the Cyberball game. _____
12. I felt my existence was meaningless during the Cyberball game. _____

Mood Items

13. I felt angry during the Cyberball game. _____
14. I enjoyed playing the Cyberball game. _____

Cyberball Questionnaire Version 2

1. To what extent were you included by the other participants during the game?

_____

1 2 3 4 5 6 7 8 9

Rejected Accepted

*For each question, please circle the number to the right that best represents the **feelings** you were experiencing **during** the game.*	Not at all				Extremely
Belongingness Items I felt "disconnected"	1	2	3	4	5
I felt rejected	1	2	3	4	5
I felt like an outsider	1	2	3	4	5
I felt I belonged to the group	1	2	3	4	5
I felt the other players interacted with me a lot	1	2	3	4	5
Self-Esteem Items I felt good about myself	1	2	3	4	5
My self-esteem was high	1	2	3	4	5
I felt liked	1	2	3	4	5
I felt insecure	1	2	3	4	5
I felt satisfied	1	2	3	4	5
Meaningful Existence Items I felt invisible	1	2	3	4	5
I felt meaningless	1	2	3	4	5
I felt non-existent	1	2	3	4	5
I felt important	1	2	3	4	5
I felt useful	1	2	3	4	5
I felt powerful	1	2	3	4	5
Control Items I felt I had control over the course of the game	1	2	3	4	5
I felt I had the ability to significantly alter events	1	2	3	4	5
I felt I was unable to influence the action of others	1	2	3	4	5
I felt the other players decided everything	1	2	3	4	5
Mood Items Good	1	2	3	4	5
Bad	1	2	3	4	5

Friendly	1	2	3	4	5
Unfriendly	1	2	3	4	5
Angry	1	2	3	4	5
Pleasant	1	2	3	4	5
Happy	1	2	3	4	5
Sad	1	2	3	4	5
Distressed	1	2	3	4	5
*For the next three questions, please circle the number to the right (or fill in the blank) that best represents the **thoughts** you had **during** the game.*					
I was ignored	1	2	3	4	5
I was excluded	1	2	3	4	5

Assuming that the ball should be thrown to each person equally (33% if three people; 25% if four people), what percentage of the throws did you receive?

What percent of throws were thrown to you? _____

Threat Perception Task

Below are a series of day-to-day situations. Each situation has three explanations. Visualize yourself in each situation and then rate the likelihood of each explanation (where 0 = not at all likely and 100 = extremely likely). There is no right or wrong answer—we want your opinion.

1. On the way to UTA, you feel a strange churning in your stomach.

How likely are the following explanations?

a. You are not particularly fit at the moment and must have been walking too fast.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. There might be something seriously wrong with you that will require medical intervention.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. You ate breakfast too quickly and are suffering from indigestion.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

2. It is lunchtime. You go down to the cafeteria where you hope to sit down with a group of new friends from your class. As you go to sit down with them, you notice that they are all laughing and looking away from you.

How likely are the following explanations?

a. They are laughing about you and are embarrassed that you have suddenly appeared.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. They are so involved in joke telling that they haven't noticed you are there yet.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. One of them is likely to notice you soon and smile.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

3. You are expecting your roommate home by 7pm, but by 9pm they are still not home and you are beginning to get a bit worried.

How likely are the following explanations?

a. They have forgotten the time and not thought to give you a call.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. They have caught up with friends and decided to go out	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. They have been in an accident and have been taken to hospital	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

4. It is the beginning of a class and your professor calls your name out and asks if you will stay back to speak to him at the end of the class. You are the only student whose name is called out.

How likely are the following explanations?

a. He is giving you a warning that your contributions to the class have not been acceptable and you must make a bigger effort to contribute.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. He is unsure of the spelling of your name and wants to clarify this on the class roll.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. He wants you to help in the following weeks' class to participate in a role play exercise	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

5. It is nighttime and you are suddenly awoken by a loud noise in the other room.

How likely are the following explanations?

a. Someone has broken into the house and has tripped over the furniture	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. Your roommate has left the window open and the wind has blown something over	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. Your cat (pet) has knocked something over	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

6. You go to your usual coffee shop to buy your morning coffee/ drink. You say hello to the cashier before ordering as you usually do, but this morning she/he does not even look up.

How likely are the following explanations?

a. They are very tired and stressed out this morning and are not in the mood to say hello.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. They are deliberately trying to ignore you.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. They didn't hear you properly and so haven't looked up at all.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

7. You are driving along a major highway in heavy traffic. As you look back into your rearview mirror, you see a police car coming along in your lane, with the siren on.

How likely are the following explanations?

a. They are using their siren to get through the traffic	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. They are driving to another accident or speeding motorist further up the highway.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. You must be speeding or have committed some other driving error and they are after you.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

8. Your very good friend says she/he will give you a call over the weekend to make plans to go to the movies the following week. It is Sunday night and she/he still hasn't called.

How likely are the following explanations?

a. She/he doesn't really want to go to the movies with you and is avoiding the call.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. She/he has lost or forgotten your number.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. You have been so busy this weekend you have probably missed her/his call.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

9. You are walking around campus at dusk, as you've stayed longer in the library than you meant to. Suddenly, you hear footsteps behind you and you realize that someone seems to be following the same path as you.

How likely are the following explanations?

a. Someone is behind you, but it is just a coincidence that they are going in the same direction as you.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. There are lots of people walking around at night, but you are not being followed.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. You are being followed and are probably going to be threatened or robbed.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

10. You have decided to donate blood during a campus blood drive. Several weeks later you get a call from the agency that conducted the blood donation.

How likely are the following explanations?

a. Something is wrong- they have found a disease or infection in your blood donation.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. It is a routine call to thank you and to remind you of future dates of blood drives.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. They are letting you know what your blood type is as you didn't know this before.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

11. It is the morning of your birthday. You have been expecting a call before you head off for school, but no one calls you.

How likely are the following explanations?

a. Your friends and family didn't want to wake you up too early	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
b. Your roommate must be on the internet, so no one can get through. You have probably got some text messages on your mobile	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely
c. No one has remembered your birthday.	0 Not at all likely	10	20	30	40	50	60	70	80	90	100 Extremely likely

Now select the explanation that you think is most likely (*circle*). **a** **b** **c**

Dread of Future Interactions Questionnaire (DQ)

Directions: Indicate the degree to which each statement is true of how you feel at this time using this 5-point scale.

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

1. I look forward to interacting with the other participant in the face-to-face experimental task. (-)
2. Interacting with the other participant should be fun and easy. (-)
3. I would prefer not to interact with the other participant. (+)
4. The interaction with the other participant will be interesting. (-)
5. I am feeling anxious about interacting with the other participant. (+)
6. I am excited about meeting the other participant. (-)
7. I believe the other participant will like meeting me. (-)
8. I think I will get along great with the other participant. (-)
9. I think the interaction with the other participant will be awkward and uncomfortable. (+)
10. I am feeling nervous about the face-to-face interaction. (+)

PERCEPTIONS OF INTERACTION

In the following questions we are interested in assessing your perceptions of the interaction between you and the other subject over the six-minute period that you waited together. Indicate your answers by circling the point on each scale that best describes your feelings or perceptions. Please reflect on how you felt during the interaction and try to answer each question as accurately and honestly as possible. Your answers will ***not*** be shown to the other subject and will be used for statistical purposes ***only***.

1----------2----------3---------4---------5---------6---------7

not at all very much

1. How much did you feel a need to communicate with the other person?
2. How much do you think the other person felt a need to communicate with you?
3. How self-conscious did you feel when you were with the other person?
4. How self-conscious do you think the other person felt when he or she was with you?
5. To what degree did the interaction seem *awkward, forced,* and *strained* to you?
6. To what degree do you think the interaction seemed *awkward, forced,* and *strained* to the other person?
7. To what degree did the interaction seem *smooth, natural,* and *relaxed* to you?
8. To what degree do you think the interaction seemed *smooth, natural,* and *relaxed* to the other person?
9. How well do you think you understood the other person?
10. How well do you think the other person understood you?
11. How involving did you find the interaction?
12. How involving do you think the other person found the interaction.
13. To what extent did you feel *put down, patronized,* or *rejected* by the other person?
14. To what extent do you think the other person felt *put down, patronized,* or *rejected* by you?

15. To what extent did you feel *accepted* and *respected* by the other person?

16. To what extent do you think the other person felt *accepted* and *respected* by you?

17. To what extent would you like to interact more with the other person in the future?

18. To what extent do you think the other person would like to interact more with you in the future?

19. To what extent do you trust the other person?

20. How much did you enjoy your interaction with the other person?

21. How much did you use the other person's behavior as a guide for your own behavior?

22. How much do you think the other person used your behavior as a guide for his/her behavior?

23. To what degree did you attempt to take the lead in the conversation?

24. To what degree did the other person attempt to take the lead in the conversation?

25. To what extent did you try to influence the other person to do what you wanted him/her to do?

26. To what extent did the other person try to influence you to do what he/she wanted you to do?

27. To what extent did you try to accommodate the other person by adapting your behavior to "fit in" with his/hers?

28. To what extent did the other person try to accommodate you by adapting his/her behavior to "fit in" with yours?

29. How much did you like the other person?

30. How much do *you* think the other person likes you?

APPENDIX D

CONDITION TABLE

	Condition		
Sex of Participant	**Exclusion**	**Inclusion**	**Total**
Women	43	45	88
Men	26	25	51
Total	69	70	139

Note: One Female did not have observational data since she wanted her tape destroyed, but did not want her other data destroyed. Thus, N = 138 for observational data.

APPENDIX E

COMPLETE DEBRIEFING PROCEDURES

All Participants MUST undergo the debriefing session.

- This script is to be used for all debriefings. All major points below must be covered. However, the actual information/flow of the debriefing might vary from participant to participant based on how the participant responds to each question.
- Our debriefing process follows the guidelines described in the chapter on laboratory experiments in *The Handbook of Social Psychology* (Aronson and Carlsmith, 1968). This identifies three goals to accomplish during debriefing: (1) Ensure the participant is in a good frame of mind, (2) Ensure that the experimental process is an educational experience for all research participants, and (3) Use the participant's inputs to gain valuable information about the experimentation process. We use these goals as the basis for our debriefing session. We will first ask the participants very general questions about what they thought of the experiment, explain the design in detail, and then ask if they had any questions. Allow the participant the opportunity to answer each question. It helps them express their feelings and may provide us with valuable insight into ways we can improve the study.
- We want to be sensitive to the research participant's feelings. We should let them "discover" and discuss the experimental process. We do not want any research participant to feel bad about his/her self. **It is very important that no research participant leave the study feeling worse about him/her self than when he/she started the session.**
- **Potential Questions to ask RP in debriefing:**
    - "What did you think about this experiment?"
    - "What did you think about the questions we asked you? Did you have any questions about why we asked you those questions?"
    - "What did they think of the tasks you were asked to perform today?"
    - "What did you think about the Cyberball game you played earlier?"
    - "What did you think of the partners you played Cyberball with?"
    - "What did you think about the interaction you were involved in earlier?" "Did you notice anything unusual?"
- "I am glad you noticed those things. Before you leave today, I thought you might like to know a little more about this study. This study was actually about examining how these personality factors might influence the way individuals respond to social interactions. A few weeks ago, you completed some questionnaires that described your personality. For example, you told us how outgoing or extroverted you were. You also told us how much

rejection from others bothers you. In addition, you told us how social absorbed you become in your relationships. All of these facets of personality, as well as others, we measured may influence your reactions to various social interactions.

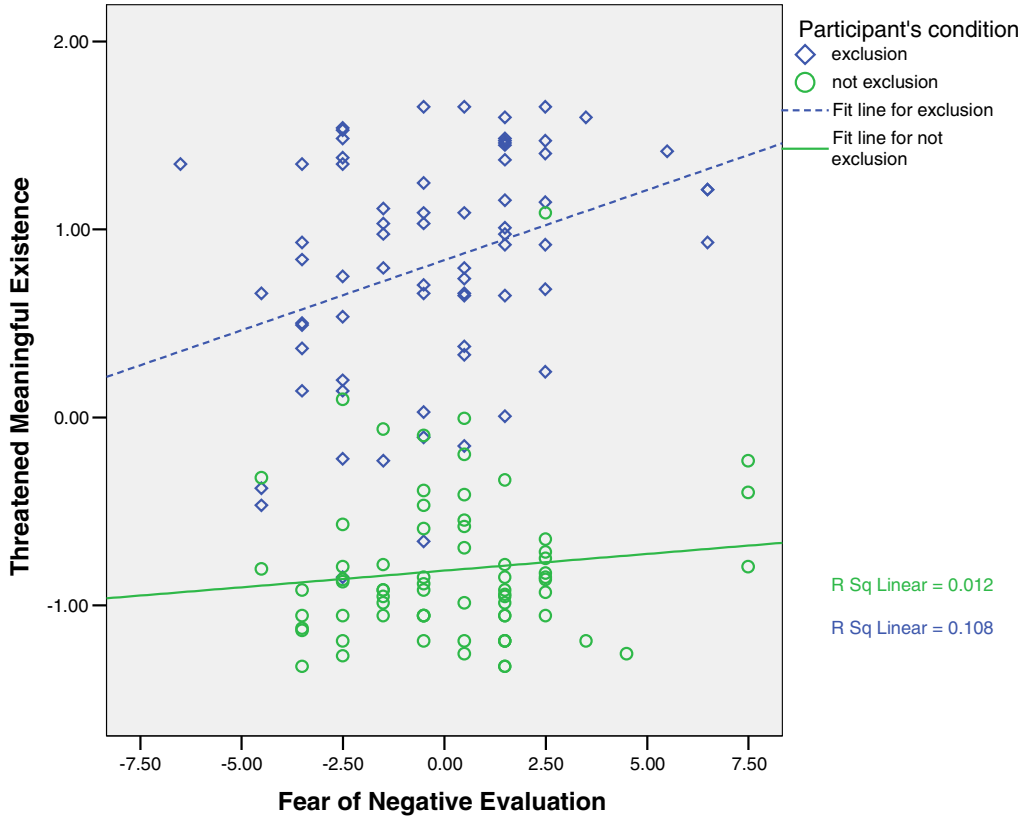
- Today you were playing Cyberball game with three other participants. The participants however were actually computerized "participants." In other words, there were no other participants playing the game – the computer program determined how many ball tosses you received. Participants were randomly assigned to either an inclusion or an exclusion condition. Those in the inclusion condition, the Cyberball confederates were programmed to randomly throw the ball to you a preset number of trials during the game. Those in the exclusion condition, the Cyberball confederates were programmed to stop throwing the ball to you after a certain number of trials. That is, if you were in the exclusion condition, the reason for being excluded had nothing to do with you or anything that you had done, it was preprogrammed. Do you understand?
- One aspect of this study was examining how people react to the possibility of future interactions with those who have just excluded them. Thus, we had you interact with a researcher/confederate after you thought he/she excluded or included you in Cyberball. In other words, there were no other participants in this study, so the person you interacted with was actually a confederate who is working for me. This person is a research assistant that works in the Personality and Social lab, but was unaware of whether or not you were supposedly excluded by them earlier.
- As you might have guessed by now, you were told that you were chosen or not chosen by the other participants, in reality no one actually said this, you were randomly chosen to interact with that particular confederate. Therefore, if you were in the exclusion condition, the choice of no one to interact with you was not because of anything that you had done, it was part of the research design. Do you understand"
- "As I explained earlier when you signed the videotape release form, your interaction with the other "participant" was videotaped. The reason for the videotaping without your knowledge was to ensure that you act as naturally as possible. We will be looking for differences in interaction patterns for those who were excluded versus those who were included in Cyberball. If you had known that you were being videotaped, you may have acted differently than you normally would. Do you understand why we videotaped you"
- "Do you have any questions that were not answered today?

- Before you leave today, we realize that participating in a study about social exclusion may highlight emotional, behavioral, or relationship problems that you might want to discuss with a professional. Information about obtaining individual and group counseling at the University of Texas at Arlington is provided below. Counseling Services are free to UTA students.
- Before you leave, we want to thank you very much for participating. We also ask you not to tell anyone about the true nature of our study. Can you help us with this? "

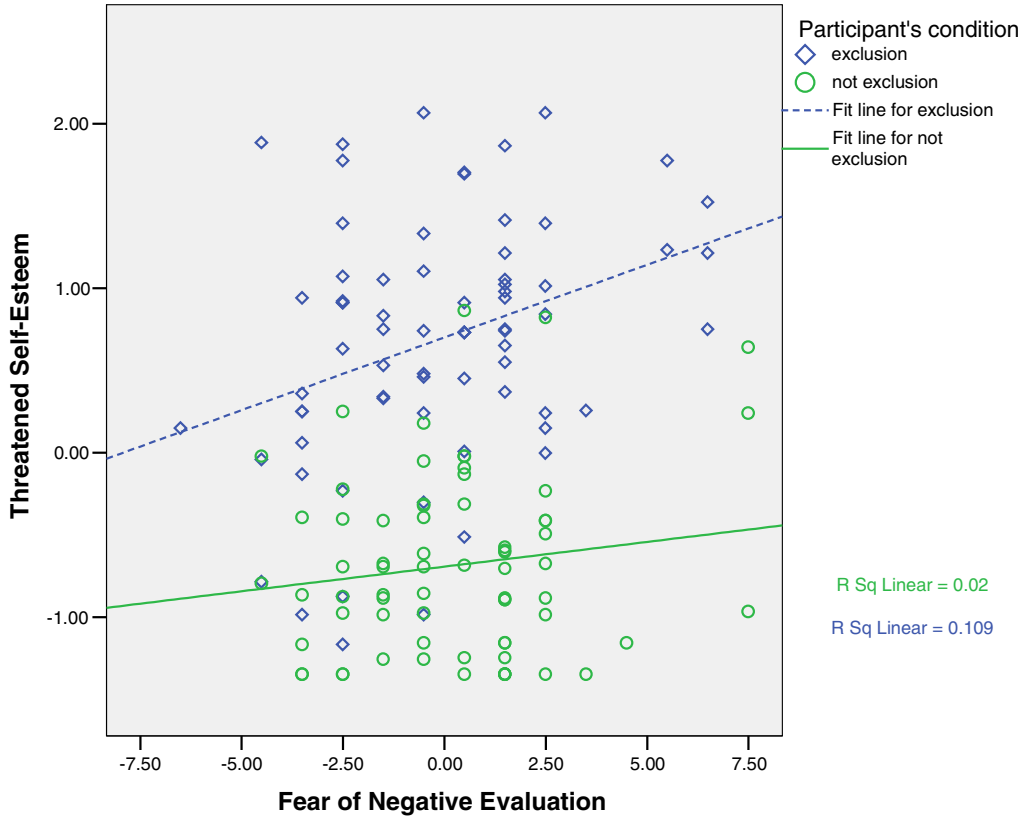
APPENDIX F

ADDITIONAL FIGURES

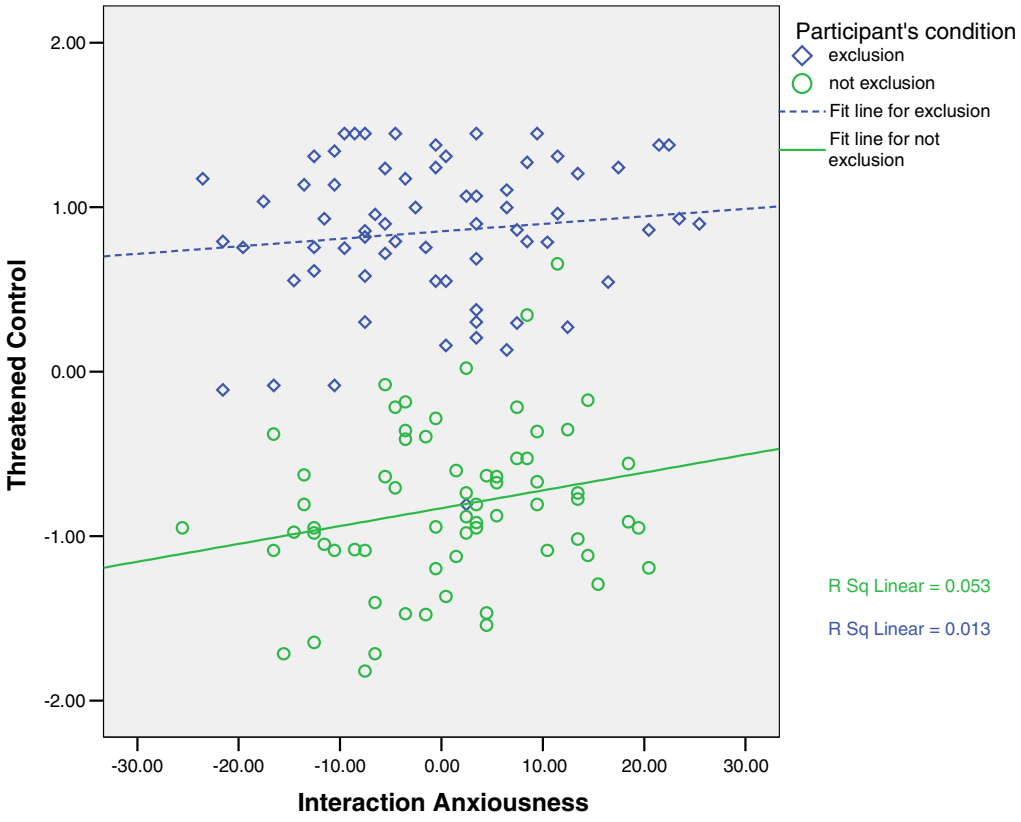
The Relationship between Fear of Negative Evaluation and Threatened Meaningful Existence by Condition



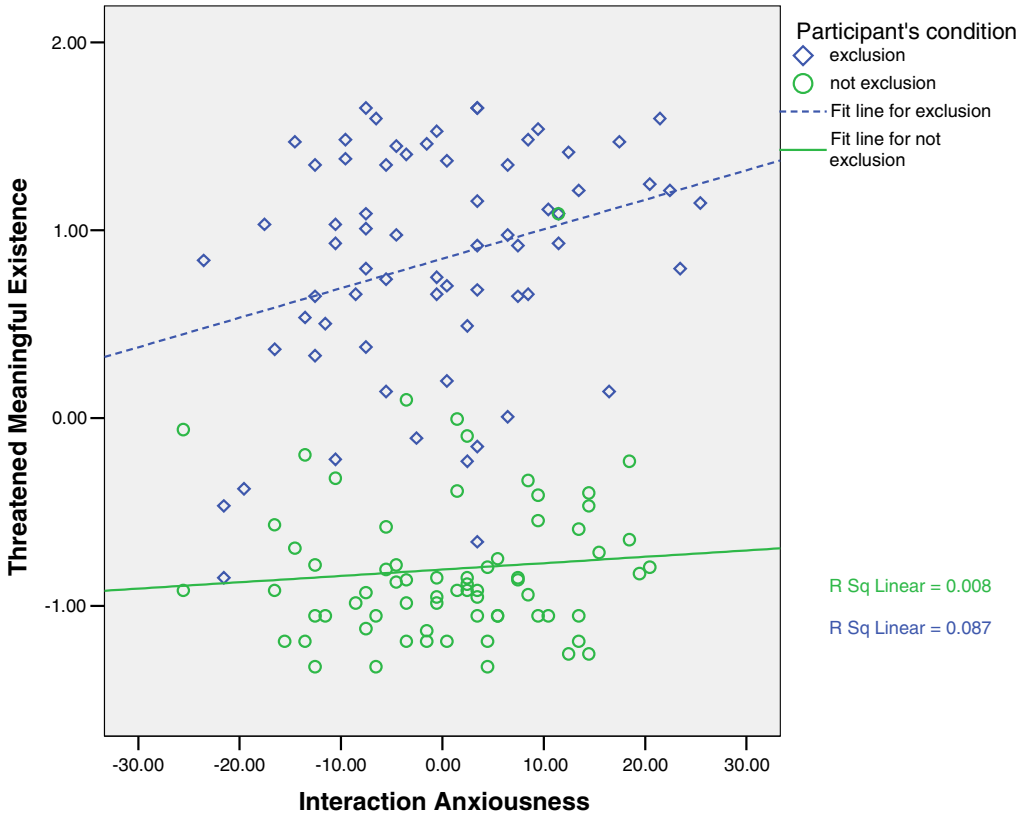
Relationship between Fear of Negative Evaluation and Threatened Self-Esteem by Condition



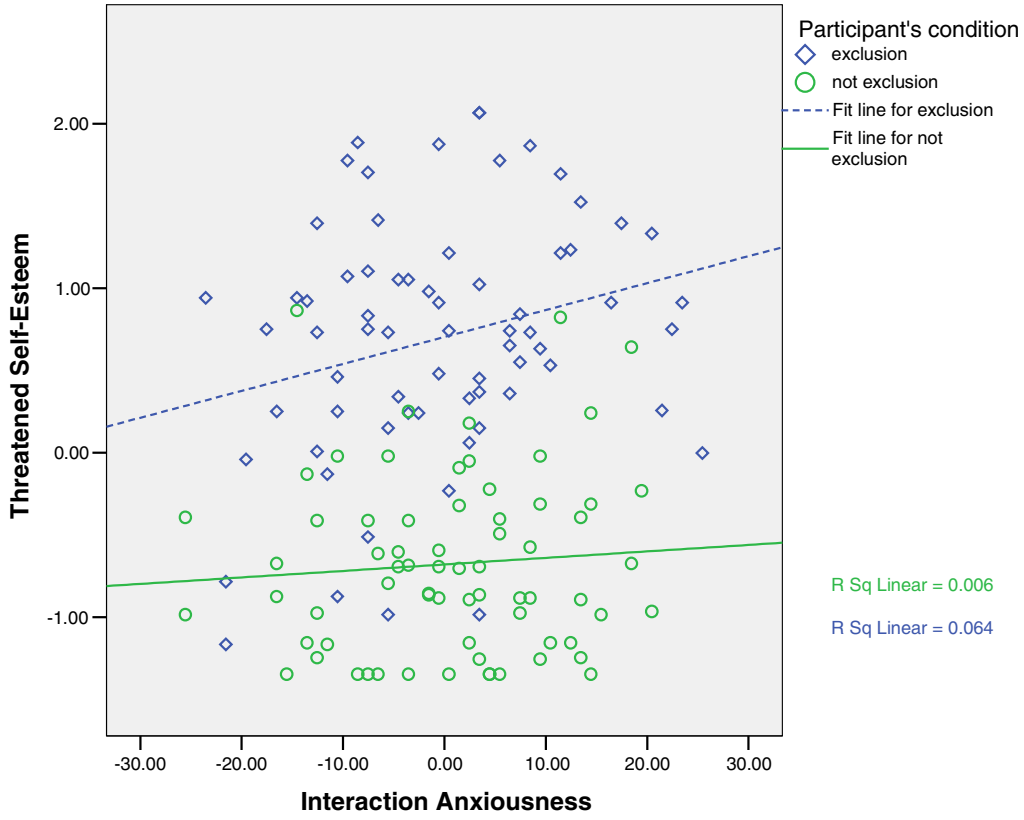
Relationship between Interaction Anxiousness and Threatened Control by Condition



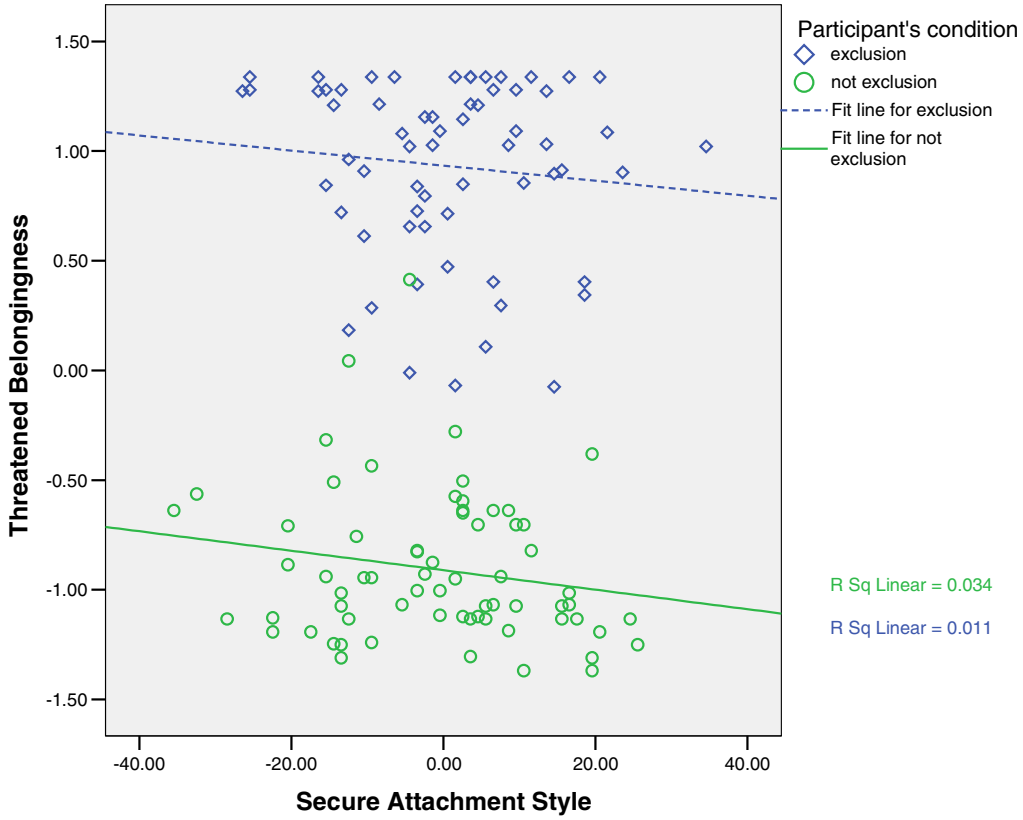
Relationship between Interaction Anxiousness and Threatened Meaningful Existence



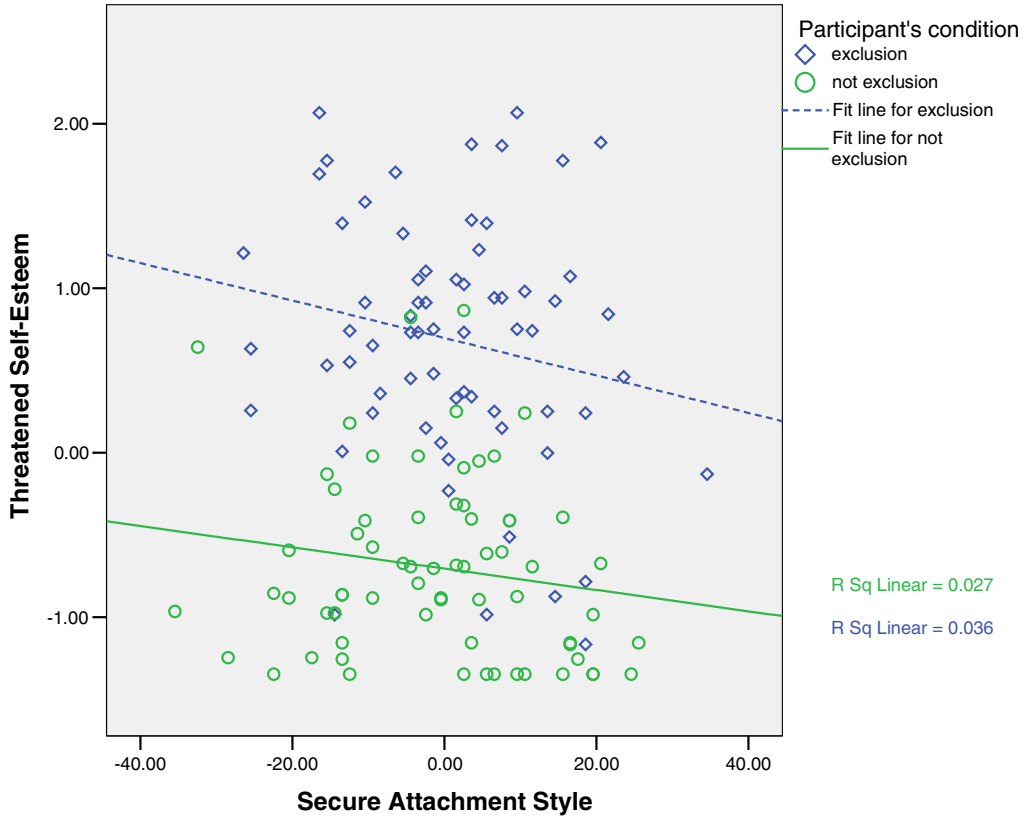
Relationship between Interaction Anxiousness and Threatened Self-Esteem by Condition



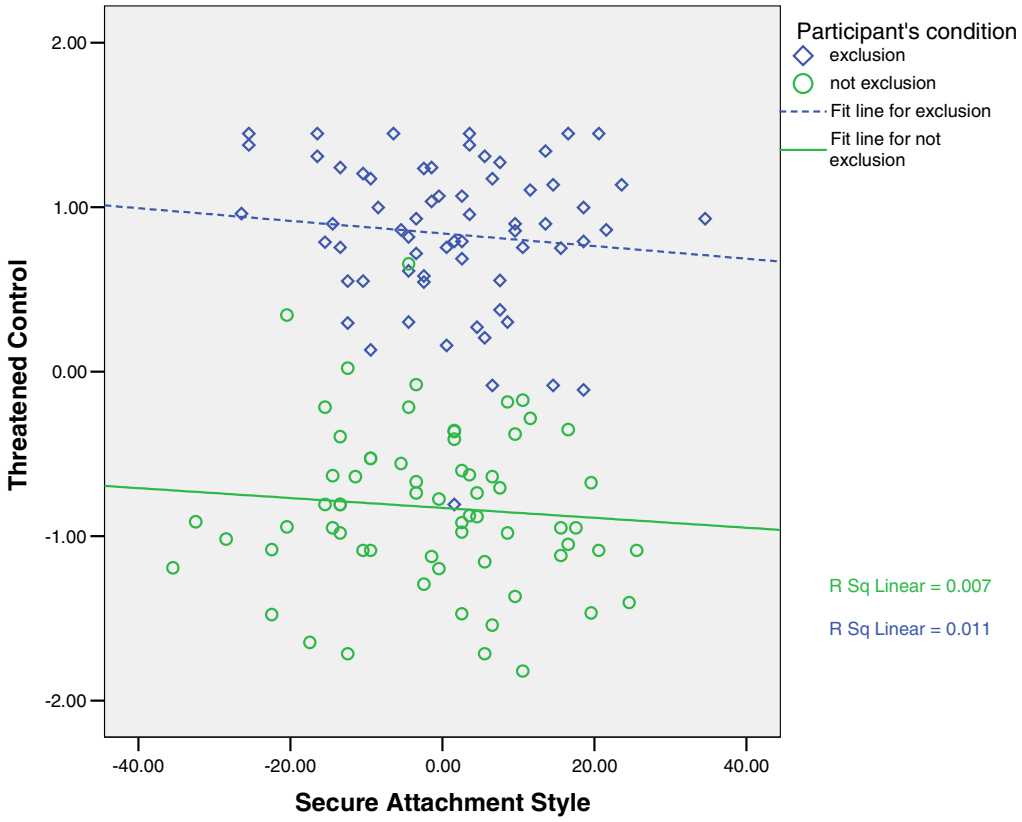
Relationship between Secure Attachment Style and Threatened Belongingness by Condition



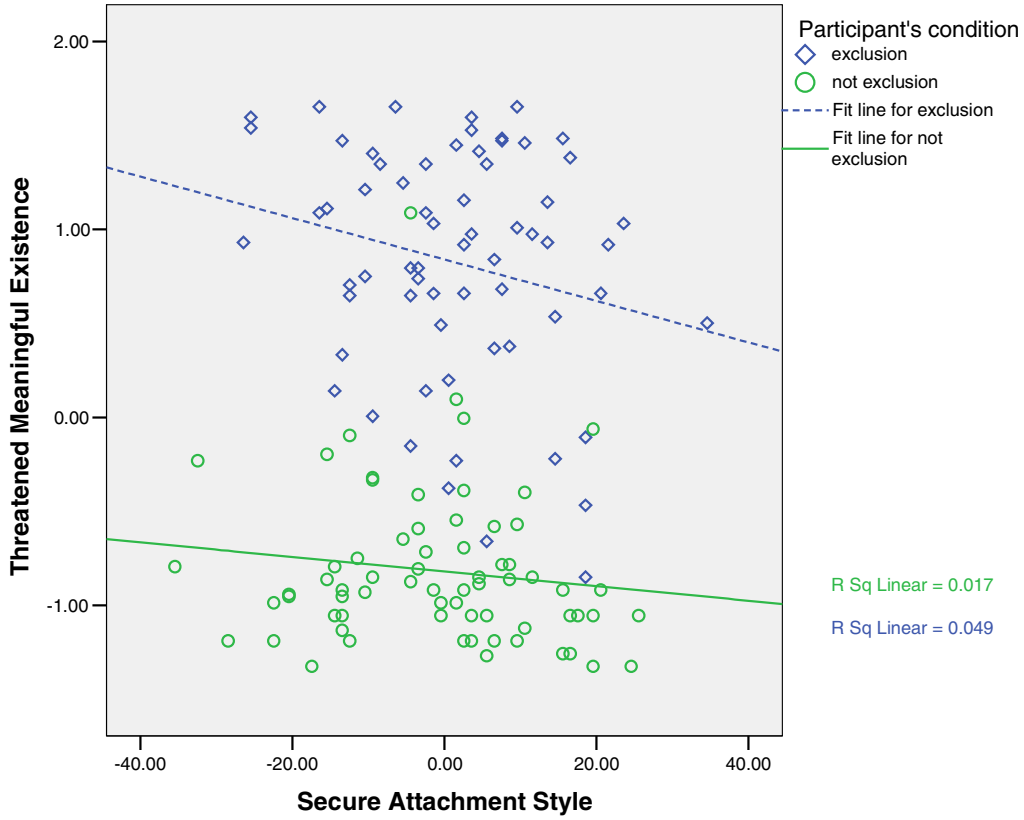
Relationship between Secure attachment Style and Threatened Self-Esteem by Condition



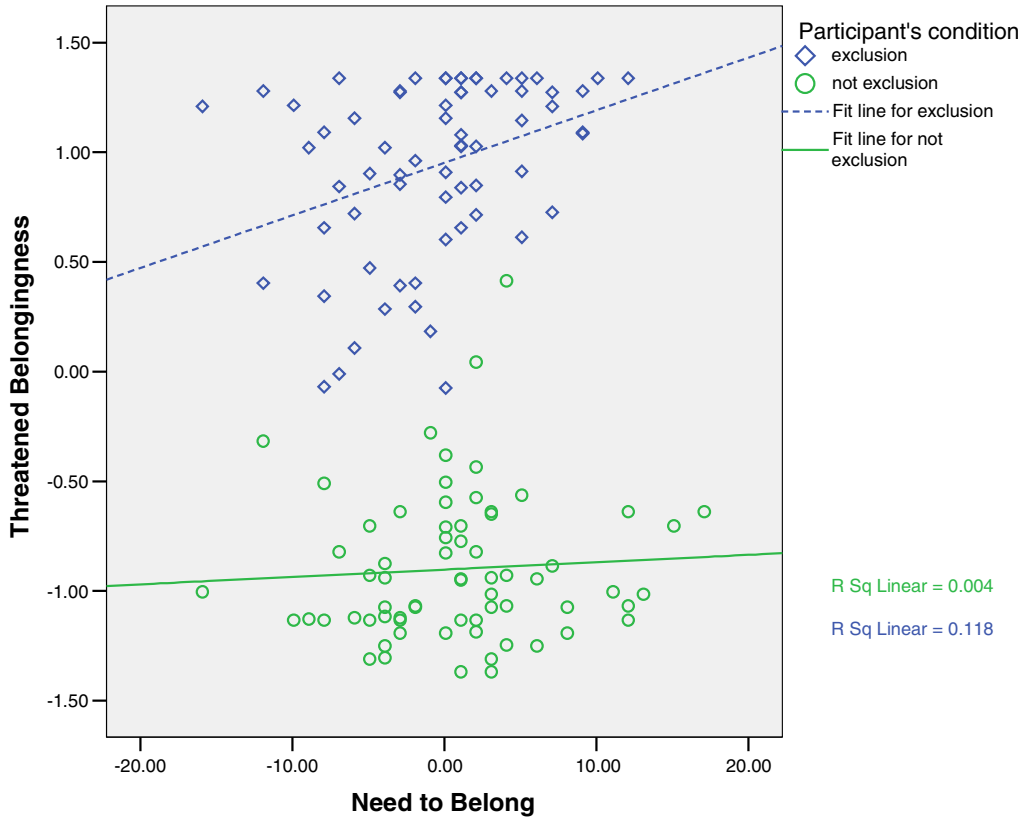
Relationship between Secure Attachment Style and Threatened Control by Condition



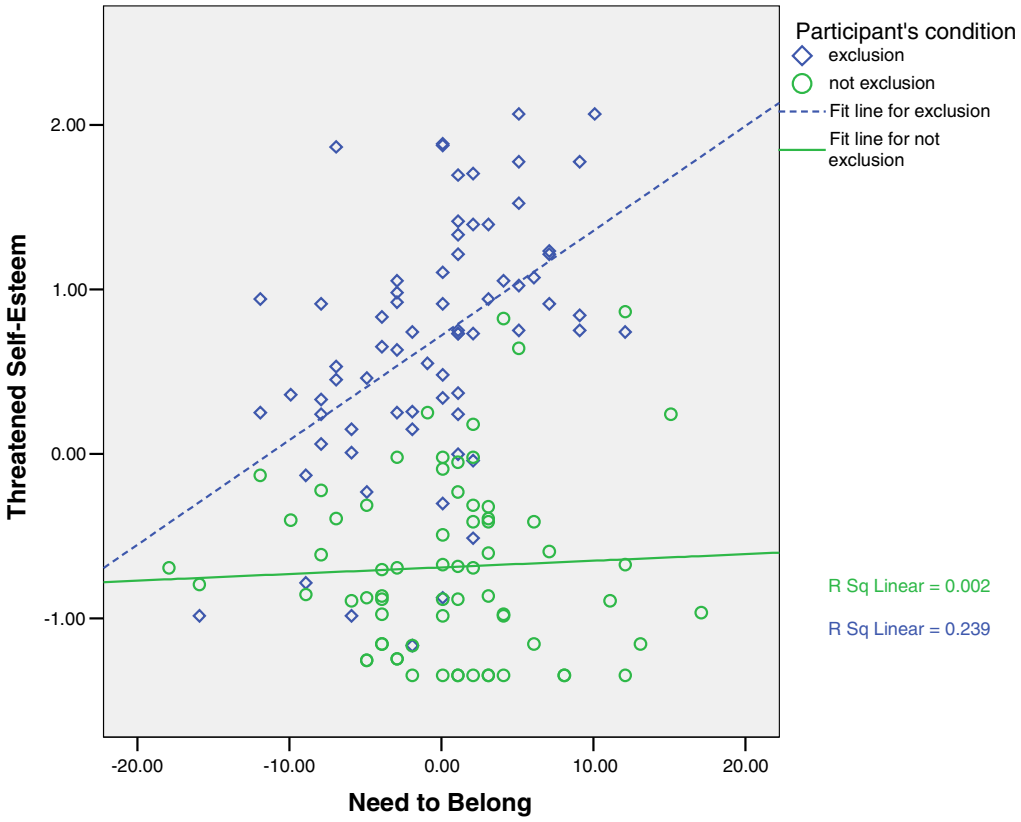
Relationship between Secure Attachment Style and Threatened Meaningful Existence by Condition



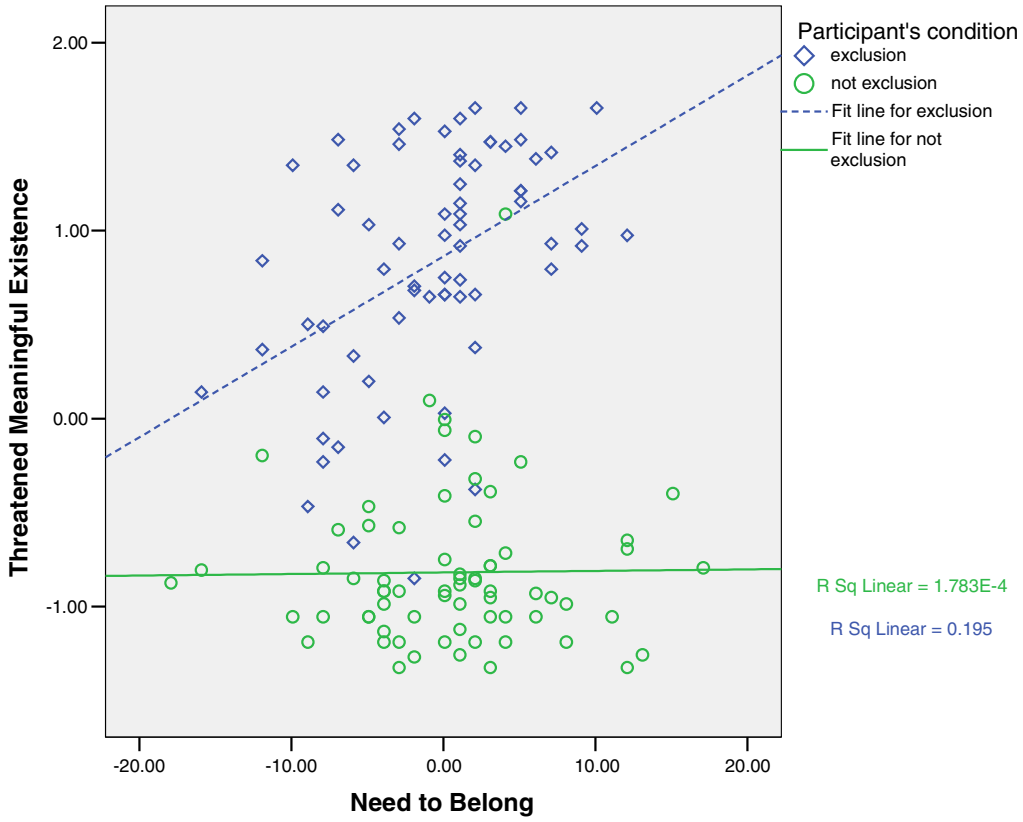
Relationship between nBelong and Threatened Belongingness by Condition



Relationship between nBelong and Threatened Self-Esteem by Condition



Relationship between nBelong and Threatened Meaningful Existence by Condition



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