

OSTRACISM AND REJECTION SENSITIVITY: ARE THE SENSITIVE REALLY
SENSITIVE?

By

MEGHAN TERESA BERLINGO

A dissertation submitted in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

WASHINGTON STATE UNIVERSITY
Department of Psychology

MAY 2015

To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of
MEGHAN TERESA BERLINGO find it satisfactory and recommend that it be accepted.

Craig D. Parks, Ph.D., Chair

Paul Kwon, Ph.D.

Sarah Tragesser, Ph.D.

ACKNOWLEDGMENT

First and foremost, I would like to express my sincere gratitude to my advisor, Dr. Craig D. Parks, for providing me with the opportunity to work in this program and helping me to complete this final project. His support and guidance will be valued for a lifetime. I would also like to thank my committee members, Dr. Paul Kwon and Dr. Sarah Tragesser for their unconditional support the past 4 years. Furthermore, I want to express my gratitude to members of the Parks Lab and my undergraduate research assistants who were always there to bounce ideas off of and encourage me to become the best researcher possible.

I would like to express the deepest appreciation to my friends, especially my cohort, and family. Without their support and emotional assistance, I would not have come this far. Lastly, I want to thank my partner, Kasey. She has been there through the ups and downs, and never once doubted my ability. I am incredibly grateful to have had her by my side.

OSTRACISM AND REJECTION SENSITIVITY: ARE THE SENSITIVE REALLY
SENSITIVE?

Abstract

by Meghan Teresa Berlingo, Ph.D.
Washington State University
May 2015

Chair: Craig D. Parks

Ostracism, a form of social exclusion, threatens four fundamental needs: self-esteem, meaningful existence, control, and belonging. The present study sought out to examine if certain individual differences exacerbate the relationship between ostracism and threatened social needs as well as ostracism and recovery from these threatened needs. Previous research has suggested that individual differences are not a large contributor when it comes to immediate reactions to an episode of ostracism (Williams, 1997; Williams, 2007) but very few studies have actually looked into this. Most of the papers that have evaluated this topic have had small sample sizes (e.g., Monson, Hesley, & Chernick, 1982), which pose a problem when considering individual differences. Furthermore, the cognitive affective processing disposition known as rejection sensitivity has never been considered as a moderator between ostracism and need fulfillment. To execute this study, half of the participants (N=344) were ostracized and half were included via an online ball tossing game called cyberball. Participants completed a series of questionnaires that evaluated a variety of individual differences as well as their perceptions of the ball tossing game.

Primary analyses indicated that rejection sensitivity and proposed Big 5 traits did not moderate the relationship between ostracism and threatened need fulfillment or ostracism and

recovery. However, secondary analyses indicated that 3 variables, after ostracism is accounted for, appear to be predictive of threatened social needs: gender, rejection sensitivity, and significant BPD features. Being female, highly rejection sensitive, and having significant BPD features was predictive of lower need fulfillment scores. Moreover, gender and BPD features are also predictive of recovery after ostracism is accounted for. Being female is predictive of higher recovery scores whereas significant BPD features were predictive of lower recovery scores. Implications and future directions for this study are discussed.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENT	iii
ABSTRACT	iv
LIST OF TABLES	viii
INTRODUCTION	1
1.1. General Introduction	1
1.2. Theoretical Background.....	1
1.3. Hypotheses.....	22
STUDY	24
2.1. Method	24
2.2. Results.....	26
2.3. Discussion.....	28
GENERAL DISCUSSION.....	31
3.1. Summary of Findings.....	31
3.2. Implications, Limitations, and Future Directions	36
References	53

Appendix A	64
Appendix B.....	68
Appendix C.....	70
Appendix D	72
Appendix E.....	75

LIST OF TABLES

	Page
Table 1. Descriptive statistics for all variables in study	44
Table 2. Correlations between all variables- primary analysis.....	45
Table 3. Hierarchical regression testing RS as a moderating variable (NF)	46
Table 4. Hierarchical regression testing Neuroticism as a moderating variable (NF)	47
Table 5. Hierarchical regression testing Conscientiousness as a moderating variable (NF).....	48
Table 6. Hierarchical regression testing Openness as a moderating variable (NF)	49
Table 7. Hierarchical regression testing Openness as a moderating variable (R)	50
Table 8. Hierarchical regression testing Agreeableness as a moderating variable (R)	51
Table 9. Hierarchical regression testing RS as a moderating variable (R).....	52
Table 10. Correlations between all variables in secondary (NF) analysis.....	53
Table 11. Hierarchical regression with four predictors (NF)- Secondary analysis	54
Table 12. Correlations between all variables in secondary (R) analysis	55
Table 13. Hierarchical regression with four predictors (R) analysis	56

CHAPTER ONE

INTRODUCTION

1.1. General Introduction

Evolution suggests that many animals used socializing as a strategy by interacting with each other to get what they needed for survival and reproduction purposes. This strategy became increasingly effective as natural selection favored those who were driven to be with one another. As a result, social exclusion, or being rejected by others, emerged as a powerful threat. When animals that depend on each other are deprived of the opportunity to interact and work together with others, their most basic needs are at serious risk. Similarly, humans have a strong need to belong and when placed in a state of isolation, their prospects for survival and reproduction are significantly reduced. Thus, social exclusion has the ability to seriously injure the psyche causing typical behaviors to become disturbed.

The issue of social exclusion may have an added dimension for human beings. Social exclusion and ostracism for survival and evolutionary purposes has evolved over time. The very basic mechanism that causes a living creature to exclude for their own best interest exists at all levels of creation including many nonhuman animals. However, the way in which social exclusion, specifically ostracism, is used and viewed today is a tendency that may be unique to human beings due to the sophisticated use of manipulation and goals of jumping to a higher social position.

1.2. Theoretical Background

1.2.1. Research on social exclusion in humans

Studies supporting the uniqueness of social exclusion in humans. A good place to start when examining how a tendency has evolved is with our closest ancestor, the chimpanzee. Goodall (1986) observed and documented cases of ostracism at Gombe for over 26 years. She noticed that it occurred in three rather different contexts: Competitive interaction with members of the same community, interaction with members outside the social group, and abnormal behavior of a member in the group. In human society, we view ostracism as an informal group response to undesirable behavior in one or more of our members. However, it does not occur this way in chimps. Attempts made by resident females to exclude young immigrants perhaps comes closest as the newcomer must persist over long periods of time. The initial fear following by shunning of polio victims also finds its parallel in human behavior (Black, 1996). However, in both chimpanzee and human society, once the crippled victim becomes familiar it will typically be accepted (Goodall, 1986). With that said, group punishment and group sanction, through use of ostracism, as practiced by humans has not yet evolved in chimps.

Kurzban and Leary (2001) offer a different perspective on social stigmatization and address why an inherently social species with a high need to belong would be so inclined to reject members of their own kind. The process of stigmatization revolves around the exclusion of particular individuals from certain interactions with the group and they argue that humans possess cognitive adaptations that allow them to avoid poor social exchange partners, join cooperative groups, and avoid interaction with others who are differentially likely to carry communicable pathogens. They argue that the characteristics that lead to stigma-based social exclusion are non-arbitrary and stem from evolved adaptations that cause individuals to avoid interactions that are likely to impose fitness costs. Their argument is in parallel with Goodall

(1986) in that social exclusion for survival purposes has evolved over time. However, the reason it exists in humans today is quite different. Kurzban and Leary offer examples of social exclusion at many different taxonomic levels. For example, spined sticklebacks are a small species of fish that exclude others when one emits a cue that indicates they have been infected by a parasite. This is similar to how the chimps at Gombe rejected a chimp who came down with polio. The behaviors exhibited by nonhuman animals that resemble human social exclusion suggest that similar principles are at work but the reasoning is different. Presumably, sticklebacks do not ostracize infested other because their self-esteem has been threatened and chimps do not exclude to justify a symbolic political structure or because their social identity has been threatened. It appears that different selection pressures have shaped adaptations of different species, thus making human unique.

Gruter and Masters (1986) propose that the process of excluding individuals from interaction with the social group exists in many nonhuman species and in all human societies. They argue that ostracism has physiological substrates or biological functions in addition to cultural, legal, and moral dimensions. For example, ethological studies of animal behavior show a complex interaction between competition, cooperation, and exclusion in the form of shunning in nonhuman primates (McGuire & Raleigh, 1984; de Waal, 1984). However, these authors also argue for the uniqueness of human beings, in that humans have a plasticity that allows them to adapt to diverse ecological and social environments. In the past, other animals have formed separate species when spreading into radically different environments. Humans have survived and elaborated lasting social systems in all parts of the world without diverging into distinct species.

Archer and Coyne (2005) offer a detailed review of indirect and social aggression. Although they do not take up ostracism or social exclusion directly, social exclusion is a consequence of indirect aggression. The authors pose a strong argument that indirect aggression does not occur in nonhumans unlike physical and verbal aggression. A pre-condition for the use of indirect aggression would seemingly be the existence of a language and sophisticated social skills that are unique to humans. For example, primate research cautions against accepting the claim that tactical deception exists in nonhuman primates (Shettleworth, 2001). Instead the ability to track third party relations may be unique to humans. Without such abilities it is unlikely that indirect or social aggression occurs in nonhumans.

Although social exclusion may have adaptive origins, its current definition makes it seem an exclusively human trait. A common goal of social exclusion is to adversely manipulate the reputation of another individual in the social group. Social exclusion is an alternative strategy to direct aggression that is more adaptive for humans because there are fewer direct consequences (i.e., suspension in school or jail time). It requires a necessary set of skills to be executed as well as a social network that would enable a person to advance their social standing at the expense of another by manipulating their social position and reputation. Thus, it seems implausible for rejection to be carried out with this level of sophistication in nonhuman primates.

The difference between social exclusion, rejection, and ostracism. Many people tend to confuse and use the terms “rejection”, “exclusion”, and “ostracism” synonymously and some researchers argue that the terms can be used interchangeably (Williams, 2007). Although they are similar and arguably could be used interchangeably, differences between the terms that have appeared in the literature are worth noting. *Rejection* refers to a refusal of social connection. The

implication of rejection is that one person seeks to form and sustain at least a temporary alliance or relationship with another person and that person says “no,” regardless of whether the rejection is expressed implicitly or explicitly (Blackhart, Nelson, Knowles, & Baumeister, 2009). An example of rejection would be considering the target as a non-person or not acknowledging the target's existence after the target attempted to form a connection. *Social exclusion* is a broader, more encompassing term in that it includes all phenomena in which a single person is put into a condition of being alone or is denied any form of social contact. The difference lies mainly in how specifically the excluded person has sought the relationship. Rejection implies that the excluded person tried to form the connection or wanted it, whereas social exclusion does not. A gay teenager being excluded from group activities in the classroom would be an example of social exclusion. *Ostracism* refers to the marked refusals of social interaction in which one who attempts to converse is repeatedly and intentionally ignored (Blackhart et al., 2009). A frequent manipulation of an ostracism scenario is to have a research subject participate in a computer simulated ball-tossing game in which the ostracism condition consists of the simulated partners suddenly and without explanation cease to throw the ball to the participant.

It is very common for ostracism to be analyzed in light of other forms of social exclusion but it should be noted that ostracism carries its own set of effects and implications that could possibly dilute its relevance to the study of social exclusion in general (Williams, 2007). Williams proposed that being ostracized reduces the recognition that life is meaningful and it derails the desire for control over one's life. His model suggests that ostracism in principle may cause a form of learned helplessness stemming from a depletion of coping resources. Learned helplessness is defined as a condition where a living animal has learned to behave helplessly,

even when the opportunity is restored for it to help itself by avoiding an unpleasant or harmful circumstance to which it has been subjected. Therefore ostracism produces different and potentially greater and longer lasting effects than those of other manipulations of rejection.

Williams (1997) distinguished ostracism from other forms of rejection. It is the act of being ignored or excluded by another person or a group of individuals. Ostracism is also very different from verbal or physical abuse in that it is typically ambiguous. The targeted individual is usually unsure whether it is occurring and why they are being excluded resulting in confusion and anxiety. Instead of being spotlighted and ridiculed the individual is left feeling shunned and evaded (Williams, Govan, Croker, Tynan, Cruickshank, & Lam, 2002). Ostracism has the capacity to be expressed in a number of ways including deviation of eye contact, verbal unresponsiveness, or even unresponsiveness to a member in a chat room. These forms of ostracism invoke emotional pain and can produce a reduced sense of social belonging and control (Williams, Cheung, & Choi, 2000). People who are operating with low levels of control and who are not included in certain functions are at risk of feeling like an outsider. It comes as no surprise that ostracism can have a negative effect on one's mood and sense of satisfaction as well as elicit feelings of frustration (Geller, Goodstein, Silver, & Sternberg, 1974), and negative self-appraisal (Geller et al., 1974; Williams, Shore, & Grahe, 1998). Clearly, ostracism produces many unpleasant feelings and has the potential to leave the target in a vulnerable and uncomfortable place.

Ostracism. It is a common attribute of human experience to feel comforted in the presence of others and one is included in a group setting. Just the opposite is true when one is left behind. It is not uncommon for a person to feel distressed and tormented if they are left out or excluded.

Some say the need to belong is just as important to survival as food and shelter (Williams, 1997). People depend on others for much of their physical and social well-being. When an individual is shunned from a group or left out, that person is experiencing a spell of ostracism. Ostracism can be defined as the act of being excluded or ignored by another individual or group of individuals (Williams, 1997; Williams & Zadro, 2001). A large body of literature suggests that being ostracized, regardless of the form, is highly aversive.

1.2.2 Need-threat model of ostracism

Previous research has suggested that ostracism threatens four fundamental needs. It is important to point out and define what is meant by the term need given that there has been some debate as to what this term means relative to these four constructs. Baumeister and Leary (1995) argue that a need, if thwarted, is directly linked to harmful physical and psychological consequences. Williams (1997) proposed a need-threat model that describes a number of diverse dimensions of ostracism and details its repercussions on targeted individuals. Belonging, control, self-esteem, and meaningful existence are the four fundamental needs that have been identified in the line of fire. There appears to be an adequate amount of evidence supporting the point that insufficient levels of any of these four constructs results in psychological impairment.

Belongingness. Belongingness to others is a need that has been argued from an evolutionary perspective to be adaptive over time. In this argument, the cooperative group is the primary survival strategy of humans and in order to belong to the cooperative group adaptations in cooperativeness and loyalty are key in avoiding the fear of social exclusion (Buss, 1990). Belonging is a need that is also emotionally desirable (Williams, 1997). The need to belong, according to Baumeister and Leary (1995), is the desire for frequent, positive, and secure connections with others. It is driven by the fundamental human motivation that leads to positive

affect and guides cognitive functions. Research shows that a lack of positive, secure interpersonal interactions produces a host of negative psychological consequences including unhappiness, anxiety, depression, stress, and illness (e.g., Argyle, 1987; Freedman, 1978; Myers, 1992). Furthermore, social identity (Brewer, 1991; Hogg & Abrams, 1988) and group-social comparison theories (Goethals & Darley, 1987) suggest that feelings of belonging enhance in-group uniqueness and are crucial in maintaining self-esteem and a positive self-concept

Meaningful existence. Meaningful existence is the second component that makes up the need-threat model. Being ignored or excluded is comparable to being completely invisible. Ostracism has previously been introduced as a metaphor for death (Case & Williams, 2004). In this regard, ostracism is a mortality cue that acts as a poignant reminder of what life would be like if one was dead. Arguments that are made up of verbal or physical antics do not pose the same threat to one's meaningful existence. The individual is being hit or yelled at. These behaviors act as reminders of meaningful existence not non-existence (Case & Williams, 2004). People are living beings and acknowledgement of existence is a vital part of our livelihood.

Control. The next need that ostracism threatens is control. The ostracized individual loses a sense of control because unlike in verbal or physical dispute, this person loses the opportunity to engage the source of the ostracism. Ostracism is a unilateral construct in that it leaves no room for discussion, arguing, or reasoning with the ostracizer. The ostracizer simply does not respond. In a physical quarrel both individuals have the ability to hit, run, or duck. The same goes for a verbal disagreement. Both people involved have the potential to direct and redirect the flow of the argument as well as make certain accusations and puncture or pump up the level of anger. None of these reactions are possible during an episode of ostracism. There is no effective response to being ostracized. The ostracized individual might as well argue with a

brick wall (Williams, 2009). It is safe to assume that the individual will feel, at least momentarily, a significant lack of control over their life.

Self-esteem. Self-esteem is arguably the most vital need that ostracism thwarts. The act of being ignored for no apparent reason leaves the ostracized individual in a situation where they are generating their own explanations as to why this type of behavior is occurring. Thoughts of self-blame, inappropriate behavior, and selfishness are some of the self-attributions that the ostracized individual considers when trying to make sense of the way they have been treated. In comparison to a verbal argument, the cause of disagreement is not articulated, therefore leaving the individual in a rumination process. They are left generating a laundry list of reasons as to why they have been excluded. Scrutinizing this long potential list will drive self-esteem down further than only having to consider one or a few accusations (Williams, 2009). It comes as no surprise that these thoughts have a direct negative impact on one's self-esteem. Self-esteem plays a crucial role in the development of a strong sense of self and social exclusion has overwhelming potential to stunt this development.

Many researchers propose that acceptance and perceived social approval are integral foundations for positive self-esteem. Certain theorists even took this proposition a step further making a direct connection between approval and self-esteem. That is, self-esteem is directly linked to perceived inclusionary status (Leary, Tambor, Terdal, & Downs, 1995). They went on to say that self-esteem works as an inner gauge, which acts to measure social acceptance. This is known as the *sociometer hypothesis*. Acceptance will therefore boost the gauge and cause an increase in self-esteem. It signals that the need to belong is thus being satisfied. On the other hand, social exclusion will result in a sharp drop in self-esteem that will signal to the individual

that the event has endangered their ability to fulfill the need to belong (Leary et al., 1995). It has been speculated that ostracism, more so than any other form of rejection, consistently reduces self-esteem (Williams & Zadro, 2005). Their argument was rooted in the fact that targets of ostracism are left to ruminate about the reason or reasons as to why they have been ignored and actively coming up with this list of potential wrong doings definitely threaten self-esteem. On the contrary, in a physical or verbal altercation, the reason for the argument is usually explicit and the individual is able to focus on one offense. Ostracism is thus thought to reduce self-esteem more so than other forms of rejection.

1.2.3 Important findings

Human beings are driven by their motivation to form and maintain, at least a small number of positive and meaningful relationships with others. People feel anxious at the thought of losing someone significant, depressed when connections with others are ruptured, and lonely when they have an insufficient amount of important relationships (Leary, 1990). Furthermore, research on social exclusion has suggested that this need to belong is threatened when one is excluded from any type of group (Williams, 1997), including certain loathed out-groups. A study conducted by Gonsalkorale and Williams (2007) revealed that ostracism by despised out-group members, such as the KKK, was no less aversive than ostracism by rival in-group or out-group members. Consistent with other research, ostracized participants in this study reported lower levels of belonging, self esteem, control, and meaningful existence than those who were included (Gonsalkorale et al., 2007). Perhaps, the most important detail to take from these findings is that group identity did not control for the overall negative feelings produced by ostracism.

Further, research has shown that minimal cues used in virtual reality paradigm where there was no direct access to social information were enough to induce negative feelings (Kassner, Law, Wesselmann, & Williams, in press). This virtual reality game placed participants in a similar environment to that of cyberball with the exception that shapes were utilized instead of players. The sphere moved between the two squares and sporadically towards the participant and then disappeared. The ostracized participants who were told to mentally visualize a “coherent story” regarding the moving shapes experienced the same distress analogous to ostracism used in other paradigms. The authors concluded that in the presence of social information, cues of ostracism are sufficient enough to spoil needs satisfaction.

Excluding people may also have negative consequences for the people that exclude (Ciarocco, Sommer, & Baumeister, 2001), in that, ostracizing someone can be a difficult task that depletes the self’s limited resources. Certain participants involved in this study, who willingly complied with a request to ostracize, later showed deficits in executive function. Participants did in fact experience ego depletion as a result of ostracizing someone else. A second study conducted by Ciarocco et al. (2001) showed that ostracizers suffered from subsequent decrements on a physical stamina task, as compared to people who had not ostracized. However, there is also evidence to suggest that ostracizing can have positive consequences (Zadro, Goodwin, & Gonsalkorale, in press). For example, real-world sources reported that ostracizing afforded them a sense of power over the target that was not possible during a physical or verbal argument (Zadro, Arriaga, & Williams, 2008). It should be noted that although ostracizing may initially afford a sense of control and power, ultimately sources might find themselves just as helpless as the target.

In terms of groundbreaking biological findings, previous research has demonstrated that the same neural machinery recruited in the experience of physical pain may also be involved in the experience of pain associated with social separation or rejection. Using fMRI data Eisenberger, Lieberman, and Williams (2003) showed that the experience and regulation of social and physical pain share a common neuroanatomical basis. It was concluded that social pain is comparable to physical pain on the basis of neurocognitive function and gives empirical insight as to why it “hurts” when a loved one is lost. These findings speak volumes to the implications of ostracism.

Important findings: Ostracism and individual differences. A recent study conducted by Uskul and Over (2014) examined cultural context in regards to social exclusion. Specifically, they looked at two culturally diverse groups, herders and farmers. Their results indicated that while both groups experienced psychological distress from ostracism by close others, herders were more strongly impacted by ostracism from strangers. Their investigations provide evidence that although ostracism is interpreted in a negative light across communities, the extent of the negative response as well as the type of response deemed appropriate, vary by culture. Herders depend on their interactions with strangers, whereas farmers interact primarily with family members and neighbors. The authors thus argued that when a particular group is important to the livelihood within a culture, being ostracized by that group is more painful than when that group is not as crucial.

Zadro, Boland, and Richardson (2006) examined whether the effect of ostracism would be more pronounced in individuals with high social anxiety. Although social anxiety failed to moderate the immediate impact of ostracism on primary needs, this individual difference did in

fact play a role in persistence of the negative effects. Individuals that were highly socially anxious recovered at a slower rate than individuals who were not socially anxious (Zadro et al., 2006). This finding could be attributed to the notion that people who are socially anxious tend to ruminate on poor social experiences whereas someone who is not social anxious is likely to forget about such an experience fairly quickly.

A study by Onada et al. (2010) examined the relationship between trait self-esteem and reactions to ostracism via social pain and dACC (dorsal anterior cingulate cortex) activity. The dACC region of the brain would be implicated during an episode of ostracism because it is involved in the distressing components of both physical and social pain. The author's found that individuals with lower trait self-esteem were more responsive to an episode of ostracism compared to those with higher trait self-esteem indicated by both higher ratings of self-report social pain and greater dACC activity. Furthermore, Wirth, Lynam, and Williams (2010) found significant moderation of ostracisms impact on social pain. Specifically, they discovered that Cluster A personality disorders (characterized by severe interpersonal distrust, detachment, and/or discomfort) moderated ostracisms impact on social pain, needs satisfaction, and positive affect but not Cluster B personality disorders (characterized by dramatic, emotional, and erratic behaviors). Lastly, McDonald and Donnellan (2012) aimed to examine whether certain relevant personality traits moderate reaction to ostracism. Results indicated that individuals high on openness tended to report higher levels of need satisfaction in both the control and exclusion condition and the individuals with traits related to obsessive-compulsive traits reported lower levels of need satisfaction. It should be noted that their study did not investigate recovery rates in regards to personality.

1.2.4 Recovery from Ostracism

Recovering from the sting of ostracism has proven to be quite a challenge due to the impairment it has on one's fundamental needs. Williams (2007) proposed a reflective stage that involves the recovery of thwarted needs. During this time of reflection and assessment (after a spell of ostracism), individual differences of the ostracized individual as well as contextual factors are thought to play a role into how long the episode remains distressing. For example, Zadro, Bolland, and Richardson (2006) looked at social anxiety, choosing participants who qualified as high and normal, to participate in a game of cyberball. Ostracized individuals reported lower levels of satisfaction and more negative affects compared to included individuals. Social anxiety appeared to play no role in immediate reactions. However, social anxiety did play a role in recovery where affect and satisfaction were assessed again after a 45-minute period. Individuals characterized as having high social anxiety appeared to only be halfway on their way to recovering whereas low socially anxious participants returned to high levels of satisfaction, mirroring levels of those who were included. These findings suggest that individual differences may play an important role in, not only immediate reactions to ostracism, but also an individual's ability to recover from such an experience.

The findings about how exactly ostracized individuals cope on the road to recovery are mixed. There are two lines of thought about behaviors aimed at recovering thwarted needs. When the ostracism is temporary and does not imply that future exclusion is likely, the most typical coping strategy is to increase chances of being liked and included (Williams, 2009). Ostracized individuals will look to recover thwarted needs of self-esteem and belonging by exerting pro-social behaviors including non-consciously mimicking a new person in a

subsequent encounter, especially if that person is part of an in-group (Lakin & Chartrand, 2005), socially conforming (Williams et al., 2000), and works hard for the group (Williams & Sommer, 1997). A recent study showed that ostracized individuals are more likely to obey the experimenters explicit directions to take pictures outside in freezing weather (Riva, Williams, Torstrick, & Montali, 2014). It appeared that the negative consequences of ostracism encouraged participants to obey strict directions delivered by the researcher. In sum, the research has shown that ostracism increases compliance, conformity, and obedience. With hopes of improving one's level of self-esteem and belonging, there seems to be substantial evidence that individuals will attempt to pay more attention to others and go to long lengths to do so.

However, the second line of thought revolves around ostracized individuals regaining thwarted needs of meaningful control and existence. These individuals exert anti-social behaviors such as being purposefully less helpful (Twenge et al., 2007) and more aggressive to those who took part in ostracizing, similar others, or even naïve individuals (Gaertner & Iuzzini, 2005; Twenge, Baumeister, Tice, & Stucke, 2001). These antisocial actions are thought to serve two purposes (Williams, 2007). The first is that aggression serves as a form of regaining control over ones environment (Tedeschi, 2001). The second purpose revolves around the fact that the ostracized individual feels invisible. Additionally, they feel they are unable to provoke a response in others. The thought is that these aggressive behaviors are concerned more with being noticed and less with being liked. Although logically this makes sense, more research is needed in support of this explanation.

1.2.5 Big Five Personality

The idea that there are a “Big Five” of personality traits-- Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism—has become one of the dominant ideas in the personality literature, and indeed these traits are predictive of a host of individual and interpersonal behaviors and experiences (Emmons, 1995; McCrea & Costa, 1997). *Openness to experience* is associated with an appreciation for art, emotion, adventure, unusual ideas, curiosity, and a variety of experiences. Openness reflects intellectual curiosity, creativity, and a preference for novelty and variety. It has also been described as the degree to which a person is imaginative or independent and has a personal preference for a variety of activities compared to a strict routine. *Conscientiousness* is associated with a tendency to show self-discipline, act dutifully, and aim for achievement. People high on Conscientiousness engage in planned rather than spontaneous behavior and are usually organized and dependable. The *Extraversion* trait is associated with energy, positive emotions, surgency, assertiveness, sociability and the tendency to seek stimulation in the company of others. These individuals are also fairly talkative. *Agreeableness* is associated with a tendency to be compassionate and cooperative rather than suspicious and antagonistic toward others. Additionally, this trait is a measure of ones’ trusting and helping nature and whether a person is well-tempered. Lastly, *Neuroticism* is associated with the propensity to experience unpleasant emotions easily, such as anger, anxiety, depression or vulnerability. It also refers to the degree of emotional stability and impulse control within an individual (Atkinson et al., 2000).

Previous research suggests that Big Five traits are connected to a variety of interpersonal behaviors. Graziano and colleagues (2007) showed that high-Agreeable individuals are cooperative and helpful. Similarly, Mount and colleagues (2008) showed these high-Agreeable individuals make good members of a team. On the contrary, these individuals have shown to be poor at negotiation if their aspirations are low (Barry & Friedman, 1998). Extraversion predicts strength of motivation to volunteer (Carlo, Okun, Knight, & de Guzman, 2005). Meta analytic evidence suggests that Agreeableness and Conscientiousness are strong predictors of counter-

productive work behaviors (Berry, Ones, & Sackett, 2007). Along the same lines, a study by Oh, Charlier, Mount, and Berry (2014) provided evidence that the negative relationship between conscientiousness and counter-productive work behaviors became stronger as an individual's level of self-monitoring increased. Workers who are considered high-Conscientious are more willing to help people in charge, especially when interpersonal relations are poor (Kamdar & Van Dyne, 2007), a seemingly important component in the workplace. Low levels of Conscientiousness and Agreeableness seem to predict high levels of aggression in young teens, especially girls (Pursell Laursen, Rubin, Booth-LaForce, & Rose-Krasnor, 2008). Both, high-Extraversion and high-Neuroticism in males are associated with high levels of competition toward other males in groups containing both males and females; In the same group dynamic, females who score low on the agreeableness trait are competitive to other females (Buunk & Fisher, 2009). It is evident that all of the Big Five traits play a role in interpersonal behaviors and interactions.

It is currently unclear whether the Big Five play any role in the experience of ostracism. McDonald and Donnellan (2012) is apparently the only published study that has tested Big Five influences on reactions to ostracism. These authors found no significant connections. However, the Big Five have been connected to a number of behaviors that can occur when one is ostracized. For example, a common reaction to being ostracized is to try to present a fellow group member as less desirable than oneself (Williams, 2007), and a number of studies have found Agreeableness, and possibly Neuroticism, to be reliable predictors of retribution-like behavior (e.g., Lee & Ashton, 2012; McCullough & Hoyt, 2002). Similarly, ostracized people sometimes try to ingratiate themselves with group members in order to get back into good graces (Williams, 2007), and research in organizational psychology finds that use of ingratiation by both leaders and subordinates is predictable from Agreeableness (Cable & Judge, 2003) or Extraversion (Caldwell & Burger, 1997). A study by Wang (2014) demonstrated that dispositional agreeableness positively predicted workplace inclusion and negatively predicted

workplace exclusion. Finally, my own thesis study unveiled some interesting initial relationships between Big Five traits and initial reactions to ostracism. High-Neuroticism and high-Conscientiousness were negatively associated with need fulfillment and high openness was positively associated with need fulfillment. Further, high-Openness was negatively associated with recovery and high agreeableness was marginally positively associated with recovery. With this said, I believe it is still important to explore potential connections between Big Five traits and ostracism.

As mentioned above, individual differences are thought to play a larger role in the recovery process from an episode of ostracism rather than initial reactions (Williams, 2007). For example, Wesselmann and colleagues found that change in repeated assessment, otherwise known as recovery (the difference between the first and second time participants complete the post-ostracism questionnaire) could be predicted by some traits (Wesselmann, Wirth, Mroczek, & Williams, 2012). Given this, one of my primary focuses in this study is how individual differences, including Big Five traits, influence recovery of threatened needs.

1.2.6 Rejection sensitivity

Rejection sensitivity is a cognitive affective processing disposition to anxiously expect, readily perceive, and intensely react to rejection (Ayduk et al., 2000). In the rejection sensitivity model, prior rejection experiences are hypothesized to lead people to form insecure working models of relationships that set the stage for how individuals represent and behave in their subsequent relationship. People who are highly rejection sensitive (HRS) are characterized by relatively high levels of anxiety and concern about abandonment whereas those low in rejection sensitivity (LRS) are relatively unconcerned about rejection and expect acceptance.

Attentiveness for rejection signals causes HRS people to distinguish and amplify intentional rejection in people who are otherwise behaving ambiguously (Ayduk et al., 2000). Rejection sensitivity (RS) is a trait-like attribute that has proven numerous negative consequences.

Downey, Mougios, Ayduk, London, and Shoda (2004) tested the assumption that RS is a defensively motivated system (DMS) that gets elicited by rejection-relevant stimuli and that this elicitation occurs automatically. The authors used the startle probe paradigm to examine individual's differences in defensive motivational systems. Results indicated that RS was positively associated to blink magnitude for negative paintings. More specifically, for HRS participants, negative slides were related to an increase in blink magnitude whereas for LRS participant's negative slides were not related to an increase in blink magnitude (Downey et al., 2004). These findings suggest that when HRS individuals are viewing rejection related stimuli, they show heightened DMS activation.

Previous research suggests that rejection sensitivity impacts not only on the individual themselves but on the significant others in their lives. Downy and Feldman (1996) tested the proposition that rejection sensitivity fosters difficulties in intimate adult relationships. The purpose of the study was to demonstrate the impact of rejection sensitivity on intimate relationships. Their results indicated that HRS individuals reported greater feelings of rejection than LRS people and perhaps more importantly, RS assessed before a romantic relationship began predicted the extent to which people would attribute hurtful intent to their new romantic partners insensitive behaviors. Rejection sensitivity was found to undermine romantic relationships and overall, partners of RS individuals found the relationship less satisfying. Downey, Feldman, & Ayduk (2000) aimed to establish whether having anxious expectations of

rejection is a risk factor for dating violence in college men who are highly invested in romantic relationships. Furthermore, they tested whether having anxious expectations of rejection is associated with fewer discretionary close relationships and heightened social avoidance and distress in college men that show low romantic investment. Results indicated that participants who were relatively high in both rejection sensitivity and romantic investment showed the highest probability of relationship violence. Men who were high in rejection sensitivity and low in romantic involvement reported relatively few serious dating relationships. They also reported having relatively fewer close friends and showed higher social avoidance (Downey et al., 2000). This study highlights the importance and seriousness that rejection sensitivity poses to significant others.

Rejection sensitivity is also related to poor mental health. Ayduk, Downey, and Kim (2001) examined the role of RS in increasing vulnerability to depression in the face of rejection in a significant relationship in a sample of women. Among HRS women, those who had experienced a partner-initiated breakup showed the highest increase in depressive symptoms. Among LRS women, in contrast, the experience of a partner-initiated breakup did not lead to an increase in depressive symptoms (Ayduk et al., 2001). The results suggest that depressive symptoms and rejection sensitivity are associated when goal non-attainment is a concern for HRS females.

Although rejection sensitivity is associated with a host of undesirable results regarding interpersonal relationships there is hope for individuals who possess this characteristic. Ayduk et al (2000) proposed that attentional control may form part of a generalized self-regulatory competency that helps to strategically regulate arousal in hot contexts. The authors utilized the

delay of gratification paradigm and predicted that cognitive control strategies should help HRS participants detain their impulsive responses. Overall, HRS individuals showed more negative outcomes indicated by lower levels of self-esteem, self-worth, and coping ability than LRS individuals, but only if they were also low in strategic self-regulation. In contrast, vulnerable individuals who were high in delay of gratification were comparable to LRS participants. In fact, HRS participants also possessed high levels of delay of gratification, were perceived by their teachers as the most socially adjusted group (Ayduk et al., 2000). These findings suggest that effective self-regulation may be the answer to positive outcomes in interpersonal relationships for individuals who are highly rejection sensitive.

Although rejection sensitivity is not considered a mental disorder it does share a host of similarities with borderline personality disorder (BPD) that are worth discussing. Both individuals with BPD and individuals who are HRS are hyper-vigilant toward rejection cues and show a readiness to perceive intentional hurt in ambiguous actions (Dutton, 1994; Downey & Feldman, 1996). However, research suggests that executive control may be where the link between the two is weakened. Ayduk, Zayas, Downey, Cole, Shoda, & Mischel (2008) looked at the similarities and differences in borderline personality and rejection sensitivity. Despite the overlap in important characteristics between borderline personality and rejection sensitivity, not everybody who anxiously expects and fears rejection should be equally susceptible to developing borderline personality features. As expected, borderline personality features were positively correlated with rejection sensitivity and negatively correlated with executive control. Perhaps more importantly, rejection sensitivity was associated to borderline personality features among people low in executive control. Among people high in executive control, the effect of rejection

sensitivity was attenuated (Ayduk et al., 2008). It seems as though executive control enables highly rejection sensitive people to supersede pre-potential habitual thought patterns and inhibit the maladaptive behavioral patterns characterized by borderline personality disorder.

1.2.7 BPD

Borderline personality disorder poses a dangerous mental health concern. Affective instability, identity disturbance, self-harm, and negative relationships are the four defining features of this disorder (Paris, 2007). Individuals with BPD demonstrate serious behavioral problems (such as suicide attempts) that typically stem from conflict and interpersonal difficulties (Dixon-Gordon, Chapman, Lovasz, & Walters, 2011). Furthermore, these individuals struggle with developing and preserving a strong sense of self. The symptoms that characterize BPD are associated with a host of other unfavorable outcomes including poor physical health, social issues, and depression (Paris, 2007; Adler, Chin, Kolisetty, & Oltmanns, 2012). The interpersonal struggles that these individuals face and how they might react to lab-induced rejection is of particular interest to this research.

Individuals with BPD have reported a host of challenges with interpersonal relationships including heightened conflict, frequent breakups, and less than desirable social problem solving (Bray, Barrowclough, & Lobban, 2007; Gunderson, 2007; Gratz et al., 2013). These interpersonal complexities are thought to differentiate BPD from other Axis II disorders (Gunderson, Zanarini, & Kisiel, 1995) and as mentioned above can result in self-destructive behavior (Grantz et al., 2013). Previous research has suggested that the interpersonal troubles among individuals with BPD may be attributed to an interpersonal hypersensitivity concerning abandonment fears, rejection sensitivity, and an incapability of experiencing loneliness

(Gunderson & Lyons-Ruth, 2008). Additionally, attachment theory research has indicated that fear of rejection is a clinical trademark of BPD (Minzenberg et al., 2008). BPD patients have also reported very high levels of rejection sensitivity compared with other clinical and non-clinical samples (Staebler et al., 2011). In the rejection sensitivity model, prior experiences of rejection are thought to shape subsequent relationships (Ayduk et al., 2000). Individuals who experience prolonged and severe rejection by others begin to develop anxious or angry expectations of rejection that may lead to rejection as a self-fulfilling prophecy (Renneberg et al., 2012). Similarly, in the developmental model of BPD, experiences of rejection establish a component of the environment BPD patients grow up in (Crowell, Beauchaine, & Linehan, 2009). It appears that any type of rejection cue may be enough for these individuals to react.

Previous research suggests that BPD patients have perceived themselves as participating significantly less than controls in a social interaction. Specifically, they underestimated the amount of time they received the ball in an online ball tossing game, which indicates a biased social perception of participation (Renneberg et al., 2012). A lab-based study featuring participants with BPD revealed that these individuals show heightened interpersonal rejection sensitivity following exposure to social rejection compared to non-BPD as evidenced by a heightened threat to four fundamental needs (Grantz et al., 2013). However, Renneberg et al., (2012) discovered that BPD participants reported more negative emotions than control participants but only before the exposure to social rejection. The control participants were the only ones who showed the expected increase in negative emotions after the exposure to rejection, an outcome that was not present for the BPD group (Renneberg et al., 2012). These results suggest that exposure to social rejection may not influence individuals with BPD the same way it

influences people without BPD. These individuals may already be predisposed to lower levels of negative affect, thus not showing significant increases in negative emotion after a bout of social exclusion.

1.3. Hypotheses

On the basis of the theoretical background, hypotheses are developed as below.

Hypothesis 1. Previous research has suggested that individual differences are not a heavy contributor when it comes to immediate reactions to an episode of ostracism (Williams, 1997; Williams, 2007) but very few studies have actually looked into this. Based on the results from an exploratory thesis project, I am motivated to look one step further into the relationship between the Big Five personality dimensions and ostracism. It is expected that neuroticism, conscientiousness, and openness will moderate the relationship between ostracism and levels of fundamental needs. Specifically, individuals higher on both the neuroticism and conscientiousness traits will show lower levels of the four fundamental needs. Individuals who score high on the openness trait will have higher levels of the fundamental needs after an episode of ostracism. Lastly, agreeableness and openness should moderate the relationship between ostracism and recovery.

Hypothesis 2. To my knowledge, no published studies have looked into rejection sensitivity and its relationship with ostracism. It is expected that rejection sensitivity will moderate the relationship between ostracism and need fulfillment. Specifically, those who are highly rejection sensitive will have lower levels of need fulfillment after an episode of ostracism compared to those who are not rejection sensitive.

Hypothesis 3. Lastly, agreeableness and openness should moderate the relationship between ostracism and recovery. Those who score high on the agreeableness trait should show higher recovery scores (i.e., recover at a quicker rate) and those who score high on the openness trait should show lower recovery scores (i.e., recover at a slower rate).

CHAPTER TWO

2.1. Method

2.1.1. Participants

344 participants were recruited from the human subject pool at Washington State University in exchange for course credit. Of the 344 participants, 94 were males, 249 were females, and 1 did not report gender. 174 of the participants were randomly assigned to the included condition and 170 of the participants were randomly assigned to the ostracized condition.

2.1.2. Measures

Post- Ostracism Survey- The standard follow up measure after a game of cyberball. It assessed the four crucial needs that ostracism threatens including, belonging, meaningful existence, self-esteem, and control. It also measured overall mood (Williams et al., 2002).

Big Five Inventory- A self-report inventory designed to measure the Big Five dimensions (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism). A brief, multi-dimensional personality inventory with only 44 items total and consists of short phrases with accessible vocabulary. This scale was developed to capture core elements of personality by using short phrases based on trait adjectives known to be prototypical markers of the Big Five (John, Donahue & Kentle, 1991; John, Naumann & Soto, 2008).

Adult Rejection Sensitivity Questionnaire- A 9 item self-report inventory designed to measure an individuals level of rejection sensitivity or the level of an individuals disposition to anxiously expect, readily perceive, and intensely react to rejection. The RS-Adult questionnaire

(A-RSQ) has been recently developed for use in adult populations. In 685 adults who completed the measure over the internet, the measure had the following characteristics: $M=8.61$, $SD=3.61$, and $range= 1.00- 24.22$. In the first published study the A-RSQ ($n=87$), the measure had the following characteristics: $M= 8.99$, $SD= 3.60$, $internal\ consistency= .74$ (Berenson et al., 2009).

PAI-BOR (Personality Assessment Inventory- Borderline Features)- A scale developed by Morey (1991) to tap features of severe personality pathology that are commonly associated with BPD. The items on the PAI-BOR were generated to reflect core factors of the construct including affective instability, identity disturbance, negative relationships, and self-harm. The final version of the questionnaire consists of 24 items that are rated on a 4-point scale. Studies that have been conducted on the psychometric properties of the PAI-BOR demonstrate that it has good internal consistency ($\alpha=.84$) and average interitem correlation (.18) (Trull, 1995). Furthermore the PAI-BOR has demonstrated high test-retest reliability over a 3 to 4-week period ($r= .86$) (Morey, 1991).

2.1.3. Procedure

Upon arriving in the laboratory participants were given a consent form to read over and sign. They were then given the rejection sensitivity questionnaire and the Big Five Inventory to complete. Participants were then instructed to turn on the computer screen in front of them and read over the directions for the ball tossing game (cyberball). After they read over the directions they clicked on the link that reads, “start playing now”. The participants in the included condition received the ball roughly one-third of the total throws and participants in the ostracized condition received the ball twice at the beginning of the game and then never again. After the game, participants completed a standard post-experimental questionnaire (Williams et al., 2002).

The questionnaire consisted of items assessing the effect of the cyberball game on: belonging, self-esteem, control, meaningful existence, and mood in general. Participants were asked to answer the questions according to how they felt ‘DURING THE GAME’ (on a five point scale, 1 being ‘not at all’ and 5 being ‘extremely’). The bottom part of the questionnaire included the manipulation check (“What percentage of the throws did you receive?”). After completing this questionnaire, participants engaged in a masker task and completed the PAI-BOR questionnaire enabling them some time to recover and take their mind off of the ostracism episode. Lastly, participants received the same post-ostracism questionnaire to complete but this time the question stem read ‘RIGHT NOW’. This was used to determine recovery, specifically in the ostracized condition. Finally, participants were debriefed and thanked for their participation.

2.1.4. Design

This study examined the impact of one experimental manipulation: ostracism via an internet ball tossing game called cyberball (the participants in the ostracized condition receive the ball twice at the beginning of the game and then never again as opposed to the participants in the inclusion condition, who receive the ball 33% of the time) on need fulfillment and recovery while taking into account important and relevant individual differences such as personality, rejection sensitivity, and features of borderline personality disorder.

2.2. Results

2.2.1. Manipulation Check

Manipulation check of ostracism condition. Ostracized participants reported a significantly fewer percentage of throws ($M=7.94$) compared to included participants ($M=30.58$),

$t(342)= 25.96, p= .000$. Moreover, ostracized participants reported feeling less included and more ignored ($M=9.00$) than included participants ($M=3.63$), $t(342)= -27.05, p= .000$. These results demonstrate that the ostracism manipulation was a success.

2.2.2. Hierarchical regression to test for moderation

Means and standard deviations are shown in Table 1. Correlations were also obtained and are included in Table 2.

To test my hypotheses I ran a series of hierarchical regressions to examine whether rejection sensitivity, neuroticism, conscientiousness, and openness moderated the relationship between ostracism (predictor variable) and need fulfillment (outcome variable). The hypothesized moderators (rejection sensitivity, neuroticism, conscientiousness, and openness) were entered as a block in the last step of each model. Unfortunately, neither of these hypotheses were supported. The results from these regressions are shown in Tables 3-6.

To test my recovery (outcome variable) hypotheses, I again ran a series of hierarchical regressions to examine whether openness and agreeableness moderated the relationship between ostracism and recovery. The hypothesized moderators (openness and agreeableness) were entered as a block in the last step of each model. Unfortunately, both of these hypotheses were unsupported. Further, although no specific hypothesis was put forth about rejection sensitivity, it did not significantly moderate the relationship between ostracism and recovery. The results from these regressions are shown in Tables 7-9.

2.2.3. Secondary analyses

Need Fulfillment. Although rejection sensitivity did not significantly moderate the relationship between ostracism and need fulfillment, it did appear to be significantly predictive of need fulfillment. Because it does seem to be an important variable in regards to need fulfillment I decided to run some exploratory analyses. Table 10 shows the correlations between all of the variables in this secondary analysis. I ran an additional hierarchical linear regression for which ostracism was entered in the first block, gender in the second, rejection sensitivity in the third, and participants BPD score in the final block. This was done to determine whether this model would account for a substantial amount of variance in need fulfillment. As shown in Table 11, all of these variables accounted for a significant amount of variance in need fulfillment (with BPD being marginally significant at .065). This model tells us that ostracism, gender, rejection sensitivity, and BPD features provide separable, independent contributions that account for 65% of the variance in need fulfillment.

Recovery. We tested the same exact model except the participants recovery score acted as the dependent variable in place of the initial need fulfillment score. Table 12 shows the correlations between all of these variables. As illustrated in Table 13, all variables but rejection sensitivity accounted for a significant amount of the variance in recovery scores. This time, PAI-BOR score was not just a marginally significant predictor. Significant BPD features appear to play an important role in recovery. This model tells us that ostracism, gender, and BPD features provide separable, independent contributions that account for 42% of the variance in recovery scores.

2.3. Discussion

The results from this study did not support my hypotheses that certain individual differences (rejection sensitivity, neuroticism, conscientiousness, and openness) would moderate the relationship between ostracism and need fulfillment. These results are not completely surprising. Most review articles stress that there is little evidence to support that individual differences moderate initial reactions to ostracism (e.g., Williams, 2007). However, a recent study indicated that Cluster A personality disorders did not have the same negative ostracism experience as others without the disorders (Wirth, Lynam, & Williams, 2010). The authors reasoned that individuals with these disorders find social interaction so aversive, that removing them from the potential situation is actually a relief (Wirth et al., 2010). More similarly to my study, McDonald & Donnellan (2012) examined the moderating effect of the big five personality traits, global self-esteem, and attachment styles. Their findings suggested that there was little evidence that initial reactions to ostracism are moderated by individual differences in personality (McDonald & Donnellan, 2012). These findings are in parallel with the current study as there was no significant interaction effect for ostracism and any of the individual differences.

Furthermore, my hypotheses about recovery were not supported by these results. Rejection sensitivity, openness, and agreeableness did not moderate the relationship between ostracism and recovery rates. Contrary to initial reactions to ostracism, individual differences are expected to play a role in how long it takes an individual to recover from an ostracism episode (Williams, 2007). One such study examined how social anxiety influenced reactions and recovery to an episode of ostracism. Although social anxiety had no impact on immediate reactions it did play a role in recovery. Those who were highly socially anxious recovered at a slower rate compared to those who were not socially anxious (Zadro et al., 2006). This finding served as part of the reasoning for my rejection sensitivity as a moderator between ostracism and

recovery hypothesis. Social anxiety shares many features with the construct of rejection sensitivity including rejection related cognitive biases, heightened emotional arousal in specific interpersonal situations, and poor behavioral outcomes underlie both constructs (Pachankis et al., 2008). It is possible that contextual factors that were not accounted for could have hindered rejection sensitivity emerging as a significant moderator. Maybe a brief online ball tossing game was not a strong enough situation for the negative effects to linger past a few minutes. Or perhaps, it was just the opposite. Maybe 20 minutes between the first and second time their need fulfillment was assessed was not long enough to capture their true state. Zadro and colleagues (2006) waited 45 minutes before reassessing participants. These are some possible explanations as to why the hypothesized effect was not observed.

Limitations. As with any experiment, this study was not without limitations. As mentioned above, the amount of time between the first and second time their needs were assessed was approximately 20 minutes. In a world with no time constraints, it would have been ideal to wait 45 minutes before assessing recovery especially since this amount of time has proven to be influential in terms of the impact of individual differences. Furthermore, although the manipulation was successful, time constraints only allowed for the game to run for 30 tosses or approximately 5 minutes. Ideally, I would have liked the game to run for 50 tosses so the ostracism manipulation was an even stronger situation. Additionally, there was only one measure of Big 5 personality included in the study. To get the most accurate assessment of personality, it would have been helpful to have at least one more measure of the Big 5, such as the TIPI questionnaire (Gosling et al., 2003). Finally, although power was not an issue given the large sample size (N=344), there was quite a difference in the amount of males (N=94) in the study compared to the amount of females (N=249). Unfortunately this tends to be the case when

recruiting participants from the psychology department as a large majority of psychology majors are female.

CHAPTER THREE

GENERAL DISCUSSION

3.1. Summary of Findings

The current study examined whether certain individual differences moderate the relationship between ostracism and need fulfillment as well as ostracism and recovery rates. It was expected that rejection sensitivity, neuroticism, conscientiousness, and openness would act as moderating variables between ostracism and need fulfillment. More specifically, rejection sensitivity, neuroticism, and conscientiousness were expected to exacerbate the negative sting of ostracism whereas openness was expected to buffer this effect. Moreover, rejection sensitivity and openness were expected to moderate the relationship between ostracism and recovery. Specifically, it was predicted that rejection sensitivity and openness would buffer the relationship between ostracism and recovery. In other words, make the process slower. To test these ideas, participants were brought into the laboratory and placed into either the ostracized or included condition of an online ball tossing game. They completed a standard follow-up questionnaire that assessed four fundamental needs (meaningful existence, self-esteem, control, and belonging). They also completed a series of other questionnaires that assessed a variety of individual differences. Finally, they were given the same post-ostracism questionnaire they received earlier only this time it was given at the end of the study and was used to evaluate recovery. Unfortunately, our results did not support our hypotheses.

However, since rejection sensitivity still proved to be an important predictor of need fulfillment after ostracism was accounted for, I ran some exploratory analyses and several interesting findings emerged. A particular model that was run, with 4 predictor variables, accounted for a substantial amount of the variance in the outcome variable of need fulfillment.

Ostracism, gender, rejection sensitivity, and BPD features accounted for 65% of the variance in need fulfillment with ostracism, not surprisingly, accounting for the majority. The other three predictors accounted for a significant amount of variance in need fulfillment as well. This tells us that all of these predictor variables provide separable and independent contributions to individuals need fulfillment. More specifically, if we take a look at the regression coefficients in Table 8 we can see that for the ostracism vs. included variable, ostracized participants (coded as 1; included coded as 0) had lower need fulfillment scores than included participants. Additionally, if we look at the gender variable we can see that females (coded as 2; males coded as 1) had lower need fulfillment scores than males. Finally, it is evident that those who scored higher on the RS adult questionnaire (indicating high rejection sensitivity) and higher on PAI-BOR (indicating significant BPD features) had lower need fulfillment score after ostracism and gender was accounted for.

Need fulfillment appears to be more complex than previous research has led on. The results from this study, specifically from the secondary analyses, began to flip my thinking about ostracism and need fulfillment. Researchers in this area spend a large amount of time demonstrating how ostracism is temporarily damaging to four fundamental needs (e.g., Williams, 1997; Williams, 2001; Williams, 2007) as well as what variables might buffer or exacerbate this effect and under what conditions (e.g., Hitlan & Noel, 2009; McDonald & Donnelan, 2012). The research doesn't typically focus on the other factors that may also play a role in threatening self-esteem, meaningful existence, control, and belonging after ostracism is accounted for.

There is an abundance of research to suggest that ostracism via an online ball tossing game is enough for individuals to suffer from insufficient levels of meaningful existence, control, self-esteem, and belonging (see Williams, 1997; Gonsalkorale et al., 2007). However, there is

less direct evidence to suggest that the other factors play a similar role when it comes need fulfillment. It does, however, make logical sense that after ostracism is accounted for, that these factors may also play a role in unsuccessful need fulfillment.

For example, some research indicates that although self-esteem (one of the four fundamental needs) declines during adolescence in both males and females, females experience a decline more rapidly than males do (Heaven & Ciarrochi, 2008) with the greatest gender difference reported in late adolescence (Kling, Hyde, Showers, & Buswell, 1999). It should be noted that a large majority of our participants were 18 and 19 years of age. Research suggests that this gap becomes smaller, but still significant over time (Kling et al., 1999). Moreover, a meta-analysis on gender differences in global self-esteem revealed that males score higher on standard measures of global self-esteem measures than females, the difference being small yet consistent (Kling et al., 1999). Theorists seeking to explain this gender difference in self-esteem have put forth several proposals. One such proposed explanation is schools. Research indicates that teachers interact with boys more frequently and give them more detailed feedback (Eccles & Blumenfeld, 1985; Golombok & Fivush, 1994). Furthermore, teachers attribute boys' academic failures to their lack of motivation and girls' academic failures to their lack of ability (Dweck, Davidson, Nelson, & Enna, 1978). The consequence of this disparity in treatment of males and females is that girls are silenced in the classroom and become silent while boys are encouraged to thrive (Brown & Gilligan, 1992; Orenstein, 1994). This gender difference could be a component that potentially explains the findings from this current study.

The results from the current study also suggest that individuals who are highly rejection sensitive have lower levels of need fulfillment after ostracism is accounted for. Why might this be the case? A study conducted by Ayduk et al., (2000) indicated that HRS individuals showed

more negative outcomes indicated by lower levels of self-esteem, self-worth, and coping ability than LRS individuals. However this effect only held if the HRS individual was also low in strategic regulation. In their second study, researchers recruited a sample of inner-city middle schoolers and found that consistent with study 1, rejection sensitivity was negatively related to self-worth and interpersonal functioning in high RS children unless they had high levels of delay of gratification (Ayduk et al., 2000). Another study examined the consequences of romantic breakups in a sample of women. HRS women who experiences a partner initiated breakup showed the highest increase in depressive symptoms while LRS women who experienced a partner-initiated breakup did not show an increase in depressive symptoms. Their study suggests that RS individuals, women in this case, are more susceptible to negative feelings after an episode of interpersonal loss (Ayduk et al., 2001). These findings may help explain our main effect for rejection sensitivity and why these individuals showed lower levels of need fulfillment after ostracism was accounted for.

Finally, the marginally significant BPD feature main effect is not completely surprising. For one, rejection sensitivity and BPD have many facets in common and are highly correlated (see Table 7). One study looked at how individuals with BPD responded to lab-based social rejection (Gratz et al., 2013). The results revealed heightened interpersonal rejection sensitivity among BPD participants (vs. Non-BPD participants), as indicated by intensified threat to all social needs and non-specific distress in response to the task. Interestingly though, there were no significant between group (BPD vs. Non-BPD) differences in negative affect in response to the task. Additionally, results demonstrated that certain aspects of emotional dysregulation may account for the observed differences between individuals with and without BPD in threats to need fulfillment as well as the experience of non-specific distress in response to a stressor (Gratz

et al., 2013). Although my sample of participants was non-clinical, I had similar results in that significant BPD features were predictive of threatened social needs. BPD and lab-induced ostracism is a line of research that deserves more attention.

If we really want to understand successful need fulfillment, we need to take into account each of the predictors mentioned above (ostracism, gender, rejection sensitivity, and BPD features) which each have a completely separable effect. Need fulfillment is impacted independently by these four different predictors with the first three accounting for a lion share of the variance. These results suggest that ostracism is far from the complete story in terms of detrimental levels of need fulfillment. We should also take into account an individual's gender, rejection sensitivity level, and PAI-BOR score. Furthermore, you cannot infer from one of these what the other might be because there are no significant interactions. Based on these results, I propose a slight shift in the ostracism argument. Successful need fulfillment is complex and has not only to do with the actions taken towards an individual but also one's innate sensitivity or concern about rejection, one's gender, as well as their score on a BPD feature questionnaire. This is a good start in attempting to understand what other factors, besides being ostracized, take away from successful levels of self-esteem, control, meaningful existence, and belonging.

Finally, I want to briefly touch on the last portion of my exploratory analyses with recovery as the outcome variable. I ran the same exact model as I did for need fulfillment with the four predictors as such; ostracism, gender, rejection sensitivity, and BPD features. Results indicated three main effects for ostracism, gender, and BPD features. More specifically, those who were ostracized had higher recovery scores, which makes logical sense since they were the participants engaging in the "recovering" process. For most included participants, there was very little difference in their scores between the first and second time they completed the

questionnaire, thus having high score both times. As for gender, the results indicated that females had significantly higher recovery scores, which also makes sense since they appeared to have lower initial need fulfillment scores compared to males. Again, it seems males had less to recover from thus making their difference scores small. Those who scored higher on the PAI-BOR had lower recovery scores. This is an interesting finding since my first exploratory analysis revealed that higher PAI-BOR scores were predictive of lower need-fulfillment scores. So, even though these participants seemingly had recovering to do, they did not engage in this process. One such potential explanation for this is individuals with BPD experience repeated exposure to rejection (Gunderson & Lyons-Ruth, 2008; Lineham, 1993). Although the need-threat model of ostracism suggests that ostracized individuals may initially be motivated to replenish these four needs and recover from such a painful episode, repeated exposure to social rejection may result in exhausted coping resources leading to a sense of learned helplessness, isolation, depression, and even suicide ideation (Williams, 2001; Williams & Nida, 2011). The individuals with significant BPD features in this study could have been engaging in this type of withdrawal behavior resulting in threatened need fulfillment the second time they completed their NF questionnaire. It also may be the case that these individuals are pre-disposed to having lower social need fulfillment regardless of a short ostracism episode. For example, researchers in this field have suggested that interpersonal difficulties common to BPD may be triggered by a pervasive interpersonal hypersensitivity (Gunderson & Lyons-Ruth, 2008). This hypersensitivity could involve abandonment fear, rejection sensitivity, and intolerance to being alone. Adverse childhood experiences interact with this psychobiological disposition of interpersonal hypersensitivity to increase risk for borderline personality disorder (Gunderson, 2007). Taken

together, the context of a situation may not matter when an individual with BPD or significant BPD features completes a need fulfillment questionnaire.

3.2. Implications, Limitations, and Future Directions

The current study has a number of theoretical and empirical implications. First, it is the only study, to my knowledge, that examines the cognitive affective processing disposition of rejection sensitivity in parallel with a laboratory-induced episode of ostracism. Although rejection sensitivity did not exacerbate the relationship between ostracism and threatened needs, it adds to the literature by supporting Willams (1997) temporal need-threat model and showing that even a disposition characterized by anxiously expecting, readily perceiving, and intensely reacting to rejection is not enough aggravate the relationship between an episode of lab-based social ostracism and need fulfillment. Further, this study demonstrates that there may be other factors that have independent effects on threatened social needs as well as recovery of these needs after ostracism is accounted for.

If researchers are trying to improve threatened need fulfillment and concentrate solely on the problem of ostracism, this only addresses part of the story. This actually may be the easy part of the story as researchers can do their best to set up interventions to remove individuals from situations where they might be ostracized. On the contrary, investigators cannot manipulate or change an individuals' gender, BPD features, or rejection sensitivity level. The latter could perhaps improve, but only over a long period of time. Thus, intervention for these factors is a bit difficult.

Future research could attempt to replicate these findings outside of the laboratory. More specifically, utilizing a sample of adolescents, which is socially, a crucial time in ones life. Some

interesting predictions could be made for such a study. Based on the results of the current study, it could be predicted that females who are highly rejection sensitive and who get teased or ostracized may struggle the most with successful need fulfillment. If this were true, what can be done? The mere fact that females, HRS individuals, and individuals with significant BPD features appear to struggle, after being ostracized, makes them more vulnerable to threatened social needs.

Additionally, why is there this gender difference? This opens a whole other line of inquiry that should be examined. Williams & Sommer (1997) investigated how social ostracism affected individuals subsequent contributions to a group task. Results indicated that ostracized females socially compensated by working harder for the group whereas ostracized males socially loafed. Females appeared to openly acknowledge their feelings of rejection and males redirected their interests. Perhaps, this could explain the gender difference in the current study. Regardless, gender should be considered in the future when examining to self-esteem, control, meaningful existence, and belonging.

Future studies should also consider using a clinical sample of BPD participants. With the exception of Gratz et al., 2013, there is not much research examining how lab-based ostracism influences individuals who are diagnosed with BPD. There are no studies, to my knowledge that look at recovery from a rejection episode in these individuals. Future research should also consider emotion dysregulation as a mediating or moderating variable between ostracism and recovery with this type of sample since the current study suggests that individuals with significant BPD features did not engage a recovery process. This factor may deplete the resources necessary for adaptive responding to interpersonal stressors, increasing the potential for maladaptive responses.

As mentioned above, this study is not without limitations. First, although we had a large sample size and good power, there was more than double the amount of females than there were males, so it is possible that our gender effect was due to this discrepancy. Second, time constraints forced the cyberball game to run for only 30 tosses or approximately 5 minutes and recovery to be assessed 20 minutes after the game was completed. Ideally, I would have liked the game to run for 50 or more tosses to make ostracism a stronger situation. Further, 20 minutes may have not been enough time for participants to process what they experienced during the cyberball game and recover from it.

Third, the measure of need fulfillment that was completed after the cyberball game was designed to assess threats to these needs experienced specifically in response to the given task (Williams, 2000) therefore there may be a generalization issue. More specifically, we may not be able to generalize these need fulfillment scores to how people would feel if they were being ostracized outside of the laboratory because this measure is not a global measure of threatened social needs. Along the same lines, this task did not include an assessment of baseline levels of threatened social needs. Thus, it is unclear the extent to which need fulfillment scores in response to the cyberball game are influenced by baseline levels of perceived threats to these social needs. Finally, although there are a tremendous amount of benefits for using a lab-induced ostracism paradigm, it is unclear to what extent cyberball is analogous to real-life ostracism.

Table 1

Descriptive Statistics For All Variables in Study

Measure	Mean	SD
PAI-BOR Total	26.33	11.03
Rejection Sensitivity	8.41	3.03
Need Fulfillment Total	55.03	21.20
Recovery	12.01	18.46
BFI- Neuroticism	2.84	.76
BFI- Agreeableness	3.92	.55
BFI- Conscientiousness	3.71	.60
BFI- Extraversion	3.39	.80
BFI- Openness	3.47	.60

Table 2

Correlations Between All Variables- Primary Analysis

Measure	1	2	3	4	5	6
1. Ostracized vs. Included	--					
2. Rejection Sensitivity	-.052	--				
3. BFI- Neuroticism	-.083	.344*	--			
4. BFI- Conscientiousness	.057	-.231*	-.246*	--		
5. BFI- Openness	-.032	-.045	-.018	.023	--	
6. Need Fulfillment Total	-.788*	-.083	-.059	.000	.080	--

Note: * = $p < .001$

Table 3

Hierarchical Regression testing Rejecting Sensitivity as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Need Fulfillment	Ostracized vs. Included	-35.67	4.12	-.843*	<i>Adj. R² = .634</i>
	Rejection Sensitivity	-1.00	.343	-.143*	
	OstxRS	.240	.460	.053	

*Note: * = $p < .005$*

Table 4

Hierarchical Regression testing Neuroticism as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Need Fulfillment	Ostracized vs. Included	-26.78	5.40	-.632*	<i>Adj. R² = .636</i>
	Neuroticism	-2.41	1.21	-.086*	
	OstxNeuro	-2.48	1.84	-.173	

*Note: * = $p < .05$*

Table 5

Hierarchical Regression testing Conscientiousness as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Need Fulfillment	Ostracized vs. Included	-36.03	8.94	-.851*	<i>Adj. R² = .620</i>
	Conscientiousness	1.27	1.62	.036	
	OstxCon	.683	2.37	.062	

*Note: * = $p < .005$*

Table 6

Hierarchical Regression testing Openness as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Need Fulfillment	Ostracized vs. Included	-28.74	8.25	-.679*	<i>Adj. R² = .622</i>
	Openness	2.60	1.67	.074	
	OstxOpen	-1.32	2.34	-.111	

*Note: * = $p < .005$*

Table 7

Hierarchical Regression testing Openness as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Recovery	Ostracized vs. Included	35.93	8.94	.975*	<i>Adj. R² = .414</i>
	Openness	-.317	1.80	-.010	
	OstxOpen	-3.57	2.54	-.344	

Note: * = $p < .005$

Table 8

Hierarchical Regression testing Agreeableness as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Recovery	Ostracized vs. Included	27.77	10.97	.753*	<i>Adj. R² = .407</i>
	Agreeableness	1.59	1.98	.048	
	OstxAgg	-1.06	2.77	-.115	

Note: * = $p < .01$

Table 9

Hierarchical Regression testing RS as a Moderating Variable (Model 3)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Recovery	Ostracized vs. Included	19.70	4.56	.535*	<i>Adj. R² = .408</i>
	RS	-.097	.380	-.016	
	OstxRS	.472	.509	.120	

Note: * = $p < .01$

Table 10

Correlations Between All Variables in Secondary (NF) Analysis

Measure	1	2	3	4	5
1. Ostracized vs. Included	--				
2. Rejection Sensitivity	-.052	--			
3. Gender	.004	.082	--		
4. PAI-BOR Total	.016	.341**	.109*	--	
5. Need Fulfillment Total	-.788**	-.083	-.108*	-.118*	--

Note: * = $p < .05$; ** = $p < .001$

Table 11

Hierarchical Regression with Four Predictors- Secondary Analysis (Model 4)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Need Fulfillment	Ostracized vs. Included	-33.53	1.37	-.791**	<i>Adj. R</i> ² = .645
	Gender	-4.28	1.54	-.090**	
	Rejection Sensitivity	-.661	.240	-.095**	
	PAI-BOR Total	-.123	.066	-.064*	

Note: * = $p < .07$; ** = $p < .007$

Table 12

Correlations Between All Variables in Secondary (R) Analysis

Measure	1	2	3	4	5
1. Ostracized vs. Included	--				
2. Rejection Sensitivity	-.052	--			
3. Gender	.004	.082	--		
4. PAI-BOR Total	.016	.341**	.109*	--	
5. Recovery	.641**	-.006	.096	-.057	--

Note: * = $p < .05$; ** = $p < .001$

Table 13

Hierarchical Regression with Four Predictors- Secondary Analysis (Model 4)

Outcome Variable	Predictor Variable	B	SE B	β	Summary
Recovery	Ostracized vs. Included	23.71	1.52	.644**	<i>Adj. R² = .419</i>
	Gender	4.09	1.71	.099**	
	Rejection Sensitivity	.312	.267	.051	
	PAI-BOR Total	-.157	.074	-.094*	

Note: * = $p < .05$; ** = $p < .02$

References

- Adler, J.M., Chin, E.D., Kolisetty, A.P., Oltmanns, T.F. (2012). The distinguishing characteristics of narrative identity in adults with features of Borderline Personality Disorder: An empirical investigation. *Journal of Personality Disorders, 26*, 498-512.
- Archer, J., & Coyne, S.M. (2005). An integrated of indirect, relational, and social aggression. *Personality and Social Psychology Review, 9*, 212-230.
- Argyle, M. (1987). *The psychology of happiness*. London: Methuen.
- Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Nolen-Hoeksema, S. (2000). *Hilgard's Introduction to Psychology*. Orlando, Florida: Harcourt College Publishers.
- Ayduk, O., Downey, G., & Kim, M. (2001). Rejection sensitivity and depressive symptoms in women. *Personality and Social Psychology Bulletin, 27*, 868-877.
- Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P. K., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology, 79*, 776-792.
- Ayduk, O., Zayas, V., Downey, G., Cole, A. B., Shoda, Y., & Mischel, W. (2008). Rejection sensitivity and executive control: Joint predictors of borderline personality features. *Journal of Research in Personality, 42*, 151-168.
- Barry, B., & Friedman, R. A. (1998). Bargainer characteristics in distributive and integrative negotiation. *Journal of Personality and Social Psychology, 74*, 345-359.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Berenson, K. R., Gyurak, A., Ayduk, Ö., Downey, G., Garner, M. J., Mogg, K., . . . Pine, D. S. (2009). Rejection sensitivity and disruption of attention by social threat

- cues. *Journal of Research in Personality*, 43, 1064–1072.
- Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology*, 92, 410-424.
- Black, K. (1996). *In the shadow of Polio: A personal and social history*. Indianapolis, IN: Perseus Publishing.
- Blackhart, G.C., Nelson, B.C., Knowles, M.L., & Baumeister, R.F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem: A meta-analytic review of 192 studies on social exclusion. *Personality and Social Psychology Review*, 13, 269-309.
- Bray, S., Barrowclough, C. & Lobban, F. (2007). The social problem solving abilities of people with borderline personality disorder. *Behaviour Research & Therapy*, 45, 1409-1417.
- Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*, 17, 475-482.
- Brown, L. M. & Gilligan, C. (1992). *Meeting at the crossroads: Women's psychology and girls' development*. Cambridge, Harvard University Press.
- Buunk, A. P., & Fisher, M. (2009). Individual differences in intrasexual competition. *Journal of Evolutionary Psychology*, 7, 37-48.
- Buss, D. M. (1990). The evolution of anxiety and social exclusion. *Journal of Social and Clinical Psychology*, 9, 196-201.
- Cable, D. M., & Judge, T. A. (2003). Managers' upward influence tactic strategies: The role of manager personality and supervisor leadership style. *Journal of Organizational Behavior*,

24, 197-214.

- Caldwell, D. F., & Burger, J. M. (1997). Personality and social influence strategies in the workplace. *Personality and Social Psychology Bulletin*, 23, 1003-1012.
- Carlo, G., Okun, M. A., Knight, G. P., & de Guzman, M. R. T. (2005). The interplay of traits and motives on volunteering: Agreeableness, extraversion, and prosocial value motivation. *Personality and Individual Differences*, 38, 1293-1305.
- Case, T. L., & Williams, K. D. (2004). Ostracism: A metaphor for death. In S. L. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 336-351). New York: Guilford Press.
- Ciarocco, N.J., Sommer, K.L., & Baumeister, R.F. (2001). Ostracism and ego depletion: The strains of silence. *Personality and Social Psychology Bulletin*, 27, 1156-1163.
- Crowell, S. E., Beauchaine, T. P. & Linehan, M. M. (2009). A biosocial developmental model of borderline personality: Elaborating and extending Lineham's theory. *Psychological Bulletin*, 135, 495-510.
- de Waal, F. (1984). The brutal elimination of a rival among captive male chimpanzees. In M. Gruter and R. Masters (Eds.), *Ostracism: A social and biological phenomenon* (pp. 89-103).
- Emmons, R. A. (1995). Levels and domains of personality: An introduction. *Journal of Personality*, 63, 341-364.
- Dixon-Gordon, K. L., Chapman, A. L., Lovasz, N., & Walters, K. (2011). Too upset to think: The interplay of borderline personality features, negative emotions, and social problem solving in the laboratory. *Journal of Personality Disorders*, 2, 243-260.

- Downey, G., & Feldman, S.I. (1996). Implications of Rejection Sensitivity for Intimate Relationships. *Journal of Personality and Social Psychology*, 70, 1327-1343.
- Downey, G., Feldman, S. I., & Ayduk, O. (2000). Rejection sensitivity and male violence in romantic relationships. *Personal Relationships*, 7, 45-61.
- Downey, G., Mougios, V., Ayduk, O., London, B., & Shoda, Y. (2004). Rejection sensitivity and the defensive motivational system: Insights from the startle response to rejection cues. *Psychological Science*, 15 (10) 668-673.
- Dutton, D. G. (1994). Behavioral and affective correlates of Borderline Personality Organization in wife assaulters. *International Journal of Law and Psychiatry*, 17, 265-277.
- Dweck, C. S., Davidson, W., Nelson, S., & Enna, B. (1978). Sex differences in learned helplessness: (II) The contingencies of evaluative feedback in the classroom and (III) An experimental analysis. *Developmental Psychology*, 14, 268-276.
- Eccles, J., & Blumenfeld. (1985). Classroom experiences and student gender: Are there differences and do they matter? In L. C. Wilkinson and C. Marrett (Eds.), *Gender influences in classroom interaction*. Hillsdale, NJ: Erlbaum Associates.
- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, 302, 290-292.
- Freedman, J. (1978). *Happy people: What happiness is, who has it, and why*. New York: Harcourt Brace Jovanovich.
- Gaertner, L., & Iuzzini, J. (2005). Rejection and entitativity: A synergistic model of mass violence. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.). *The social outcast: Ostracism, social exclusion, rejection, and bullying*. New York:

Psychology Press.

- Geller, D. M., Goodstein, L., Silver, M. & Sternberg, W. C. (1974). On being ignored: The effects of violation of implicit rules of social interaction. *Sociometry*, *37*, 541-556.
- Goethals, G. & Darley, J. (1987). Social comparison theory: Self-evaluation and group life. In B. Mullen & G. Goethals (Eds.), *Theories of group behavior* (pp. 21-47). New York: Springer-Verlag.
- Golombok, S., & Fivush, R. (1994). *Gender development*. New York: Cambridge University Press.
- Gonsalkorale, K., & Williams, K. D. (2007). The KKK won't let me play: Ostracism even by a despised outgroup hurts. *European Journal of Social Psychology*, *37*, 1176-1186.
- Goodall, J. (1986). Social rejection, exclusion, and shunning among the Gombe chimpanzees. *Ethology and Socialbiology*, *7*, 227-236.
- Gratz, K. L., Dixon-Gordon, K. L., Breetz, A., & Tull, M. (2013). A laboratory based examination of responses to social rejection in borderline personality disorder: The mediating role of emotion dysregulation. *Journal of Personality Disorders*, *27*, 157-171.
- Graziano, W. G., Habashi, M. M., Sheese, B. E., & Tobin, R. M. (2007). Agreeableness, empathy, and helping: A person x situation perspective. *Journal of Personality and Social Psychology*, *93*, 583-599.
- Gruter, M., & Masters, R. D. (1986). Ostracism as a social and biological phenomenon: An introduction. *Ethology and Socialbiology*, *7*, 149-158.
- Gunderson, J.G. (2007). Disturbed relationships as a phenotype for borderline personality disorder, a commentary. *American Journal of Psychiatry*, *164*, 1637-1640.

- Gunderson, J. G., & Lyons-Ruth, K. (2008). BPD's interpersonal hypersensitivity phenotype: A gene-environment-developmental model. *Journal of Personality Disorders*, 22, 22–41.
- Gunderson, J. G., Zanarini, M. C., & Kisiel, C. L. (1995). Borderline personality disorder. In W. J. Livesley (Ed.), *The DSM-IV personality disorders* (pp. 141–157). New York: Guilford Press.
- Heaven, P. C., & Ciarrochi, J. (2008). Parental styles, conscientiousness, and academic performance in high school: A three-wave longitudinal study. *Personality and Social Psychology Bulletin*, 34, 451-461.
- Hitlan, R. T., & Noel, J. (2009). The influence of workplace exclusion and personality on counterproductive work behaviors: An interactionist perspective. *European Journal of Work and Organizational Psychology*, 18, 477-502.
- Hogg, M. A. & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes*. London: Routledge.
- John, O. P., Donahue, E. M. & Kentle, R. L. (1991). The big five inventory-Versions 4a and 54. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm Shift to the Integrative Big-Five Trait Taxonomy: History, Measurement, and Conceptual Issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). New York, NY: Guilford Press.
- Kamdar, D., & Van Dyne, L. (2007). The joint effects of personality and workplace social exchange relationships in predicting task performance and citizenship performance.

- Journal of Applied Psychology*, 92, 1286-1298.
- Kassner, M. P., Wesselmann, E. D., Law, A. T., & Williams, K. D. Virtually ostracized: Studying ostracism in Immersive Virtual Environments. *Cyberpsychology, Behavior, and Social Networking*. In press.
- Kling, K. C., Hyde, J. S., Showers, C. J., & Buswell, B. N. (1999). Gender differences in self-esteem. A meta analysis. *Psychological Bulletin*, 125, 470-500.
- Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin*, 127, 187-208.
- Lakin, J. L. & Chartrand, T. L. (2005). Exclusion and nonconscious behavioral mimicry. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 279-295). New York: Psychology Press.
- Leary, M. R. (1990). Responses to social exclusion: Social anxiety, jealousy, loneliness, depression, and low self-esteem. *Journal of Social and Clinical Psychology*, 9, 221-229.
- Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, 2, 518-530.
- Lee, K., & Ashton, M. C. (2012). Getting mad and getting even: Agreeableness and Honesty-Humility as predictors of revenge intentions. *Personality and Individual Differences*, 52, 596-600.
- Linehan, M. M. (1993). *Cognitive behavioral therapy of borderline personality disorder*. New York: Guilford Press.
- McCrae, R. R. & Costa, P. T. (1997). Personality trait structure as a human universal.

- American Psychologist*, 52, 509-516.
- McCullough, M. E., & Hoyt, W. T. (2002). Transgression related motivational dispositions: Personality substrates of forgiveness and their links to the Big Five. *Personality and Social Psychology Bulletin*, 28, 1556- 1573.
- McDonald, M.M. & Donnellan, M.B. (2012). Is ostracism a strong situation? The influence of personality in reactions to rejection. *Journal of Research in Personality*, 46, 614-618.
- McGuire, M. T. & Raleigh, M. J. (1984). Behavioral and physiological correlates of ostracism. In M. Gruter and R. Masters (Eds.), *Ostracism: A social and biological phenomenon* (pp. 39-52).
- Minzenberg, M.J., Poole, J. H., & Vinogradov, S. (2008). A neurocognitive model of borderline personality disorder: Effects of childhood sexual abuse and relationship to adult social attachment disturbance. *Journal of Developmental Psychopathology*, 20, 341-368.
- Monson, T. C., Hesley, J. W., & Chernick, L. (1982). Specifying when personality traits can and cannot predict behavior: An alternative to abandoning the attempt to predict single-act criteria. *Journal of Personality and Social Psychology*, 43, 385-399.
- Morey, L.C. (1991). *Personality Assessment Inventory, Professional Manual*. Lutz, FL: Psychological Assessment Resources, Inc.
- Mount, M. K., Barrick, M. R., & Stewart, G. L. (1998). Five factor model of personality and performance in jobs involving interpersonal interactions. *Human Performance*, 11, 145-165.
- Myers, D. (1992). *The pursuit of happiness*. New York: Morrow.

- Oh, I. S., Charlier, S. D., Mount, M. K., & Berry, C. M. (2014). The two faces of high self-monitors: Chameleonic moderating effects of self-monitoring on the relationships between personality traits and counterproductive work behaviors. *Journal of Organizational Behavior, 35*, 92-111.
- Onada, K., Okamoto, Y., Nakashima, K., Nittono, H., Yoshimura, S., Yamawaki, S., Yamaguchi, S., & Ura, M. (2010). Does low self-esteem enhance social pain? The relationship between trait self-esteem and anterior cingulate cortex activation induced by ostracism. *SCAN, 5*, 385-391.
- Ornstein, P. (1994). *School girls: Young women, self-esteem, the confidence gap*. New York: Doubleday.
- Paris, J. (2007). The nature of borderline personality disorder: Multiple dimensions, multiple symptoms, but one category. *Journal of Personality Disorders, 21*, 457-473.
- Pursell, G. R., Laursen, B., Rubin, K. H., Booth-LaForce, C., & Rose-Krasnor, L. (2008). Gender differences in patterns of association between prosocial behavior, personality, and externalizing problems. *Journal of Research on Personality, 42*, 472-481.
- Renneberg B., Herm K., Hahn A., Staebler K., Lammers C.-H., Roepke S. (2012). Perception of social participation in borderline personality disorder. *Clinical Psychological Psychotherapy, 19*, 473–480.
- Riva, P., Williams, K. D., Torstrick, A. M., & Montali, L. (2014). Orders to shoot (a camera): Effects of ostracism on obedience. *Journal of Social Psychology, 154*, 208-216.
- Shettleworth, S. (2001). Animal cognition and animal behaviour. *Animal Behaviour, 61*, 277– 286.
- Staebler K., Renneberg B., Stopsack M., Fiedler P., Weiler M., Roepke S. (2011). Facial

- emotional expression in reaction to social exclusion in borderline personality disorder. *Psychological Medicine*, 41, 1929–1938.
- Tedeschi, J. T. (2001). Social power, influence, and aggression. In J. P. Forgas, & K. D. Williams (Eds.), *Social influence: Direct and indirect processes* (pp. 109-128). New York: Psychology Press.
- Trull, T. J. (1995). Borderline personality disorder features in nonclinical young adults: I. Identification and validation. *Psychological Assessment*, 7, 33-41.
- Twenge, J.M., Baumeister, R.F., DeWall, C.N., Ciarocco, N.J., & Bartels, J.M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology*, 92, 56-66
- Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology*, 81, 1058-1069.
- Uskul, A. K., & Over, H. (2014). Responses to social exclusion in cultural context: Evidence from farming and herding communities. *Journal of Personality and Social Psychology*, 106, 752-771.
- Wang, B. (2014). Dispositional agreeableness predicts ostracizing others at work. (Masters Thesis). Available from ProQuest Dissertations and Theses database. (UMI No. 1558124).
- Wesselmann, E. D., Wirth, J. H., Mroczek, D. K., & Williams, K. D. (2012). Dialing a feeling: Detection moderation of affect decline during ostracism. *Personality and Individual Differences*, 53, 580-586.
- Williams, K. D. (1997). Social ostracism. In R. M. Kowalski (Ed.), *Aversive*

- interpersonal behaviors* (pp. 133–170). New York: Plenum.
- Williams, K. D. (2001). *Ostracism: The power of silence*. New York: Guilford Press.
- Williams, K. D. (2007). Ostracism. *Annual Review of Psychology*, 58, 425–452.
- Williams, K. D. (2009). Ostracism: Effects of being excluded and ignored. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 41, pp. 275–314). New York: Academic Press.
- Williams, K. D., Cheung, C., & Choi, W. (2000). Cyberostracism: Effects of being ignored over the Internet. *Journal of Personality and Social Psychology*, 79, 748–762.
- Williams, K. D., Govan, C. L., Croker, V., Tynan, D., Cruickshank, M., Lam, A. (2002). Investigations into differences between social and cyberostracism. *Group Dynamics: Theory, Research, and Practice*, 6, 65–77.
- Williams, K. D. & Nida, S. A. (2011). Ostracism: Consequences and coping. *Current Directions in Psychological Science*, 20, 71–75.
- Williams, K. D., Shore, W. J. & Grahe, J. E. (1998). The silent treatment: Perceptions of its behaviors and associated feelings. *Group Processes and Intergroup Relations*, 1, 117–141.
- Williams, K. D., & Sommer, K. L. (1997). Social ostracism by one's coworkers: Does rejection lead to loafing or compensation? *Personality and Social Psychology Bulletin*, 23, 693–706.
- Williams, K. D., & Zadro, L. (2001). Ostracism: On being ignored, excluded, and rejected. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 21–53). New York: Oxford University Press.
- Williams, K. D., & Zadro, L. (2005). Ostracism: The indiscriminate early detection

- system. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 19-34). New York: Psychology Press.
- Wirth, J., Lynam, D.R., & Williams, K. (2010). When social pain isn't automatic: Personality disorder traits buffer ostracism's immediate negative impact. *Journal of Research in Personality, 44*, 397-401.
- Zadro, L., Arriaga, X., Williams, K. (2008). Relational ostracism. In Forgas, JP and Fitness, J (Eds.), *Social relationships: Cognitive, affective, and motivational processes*, (pp. 305-319). New York: Psychology Press.
- Zadro, L., Boland, C., & Richardson, R. (2006). How long does it last? The persistence of the effects of ostracism in the socially anxious. *Journal of Experimental Social Psychology, 42*, 692-697.
- Zadro, L., Godwin, A., Gonsalkorale, K. (2014). The role of motivation & self control in determining the consequences of ostracism for targets and sources. In J.P. Forgas, E. Harmon-Jones (Eds.), *Motivation and Its Regulation: The Control Within (Sydney Symposium of Social Psychology)*, (pp. 351-366). New York: Psychology Press.

Appendix A

Adult Rejection Sensitivity questionnaire

The items below describe situations in which people sometimes ask things of others.

For each item, **imagine that you are in the situation, and then answer the questions that follow it.**

1. You ask your parents or another family member for a loan to help you through a difficult financial time.

How concerned or anxious would you be over whether or not your family would want to help you?

Very unconcerned			Very concerned		
1	2	3	4	5	6

I would expect that they would agree to help as much as they can.

Very unlikely			Very likely		
1	2	3	4	5	6

2. You approach a close friend to talk after doing or saying something that seriously upset him/her.

How concerned or anxious would you be over whether or not your friend would want to talk with you?

Very unconcerned			Very concerned		
1	2	3	4	5	6

I would expect that he/she would want to talk with me to try to work things out.

Very unlikely			Very likely		
1	2	3	4	5	6

3. You bring up the issue of sexual protection with your significant other and tell him/her how important you think it is.

How concerned or anxious would you be over his/her reaction?

Very unconcerned			Very concerned		
1	2	3	4	5	6

I would expect that he/she would be willing to discuss our possible options without getting defensive.

Very unlikely					Very likely
1	2	3	4	5	6

4. You ask your supervisor for help with a problem you have been having at work.

How concerned or anxious would you be over whether or not the person would want to help you?

Very unconcerned					Very concerned
1	2	3	4	5	6

I would expect that he/she would want to try to help me out.

Very unlikely					Very likely
1	2	3	4	5	6

5. After a bitter argument, you call or approach your significant other because you want to make up.

How concerned or anxious would you be over whether or not your significant other would want to make up with you?

Very unconcerned					Very concerned
1	2	3	4	5	6

I would expect that he/she would be at least as eager to make up as I would be.

Very unlikely					Very likely
1	2	3	4	5	6

6. You ask your parents or other family members to come to an occasion important to you.

How concerned or anxious would you be over whether or not they would want to come?

Very unconcerned					Very concerned
1	2	3	4	5	6

I would expect that they would want to come.

Very unlikely					Very likely
---------------	--	--	--	--	-------------

1 2 3 4 5 6

7. At a party, you notice someone on the other side of the room that you'd like to get to know, and you approach him or her to try to start a conversation.

How concerned or anxious would you be over whether or not the person would want to talk to you?

Very unconcerned Very concerned

1 2 3 4 5 6

I would expect that he/she would want to talk with me.

Very unlikely Very likely

1 2 3 4 5 6

8. Lately you've been noticing some distance between yourself and your significant other, and you ask him/her if there is something wrong.

How concerned or anxious would you be over whether or not he/she still loves you and wants to be with you?

Very unconcerned Very concerned

1 2 3 4 5 6

I would expect that he/she will show sincere love and commitment to our relationship no matter what else is going on.

Very unlikely Very likely

1 2 3 4 5 6

9. You call a friend when there is something on your mind that you feel you really need to talk about.

How concerned or anxious would you be over whether or not your friend would want to listen?

Very unconcerned Very concerned

1 2 3 4 5 6

I would expect that he/she would listen and support me.

Very unlikely Very likely

1 2 3 4 5 6

Please answer the following.

Subject ID: _____

Computer #: _____

Date: _____

Your Age: _____

Gender: _____

Religion:

____ Protestant or Christian

____ Catholic

____ Jewish

____ Hindu

____ Buddhist

____ None

____ Other

Ethnicity:

____ African- American

____ White (not-Hispanic)

____ Hispanic- American

____ Native- American

____ Asian- American

____ Other

Appendix B

Big Five Inventory

How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

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

I am someone who...

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless
9. _____ Is relaxed, handles stress well.
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense
15. _____ Is ingenious, a deep thinker
16. _____ Generates a lot of enthusiasm
17. _____ Has a forgiving nature

18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Has an active imagination
21. _____ Tends to be quiet
22. _____ Is generally trusting
23. _____ Tends to be lazy
24. _____ Is emotionally stable, not easily upset
25. _____ Is inventive
26. _____ Has an assertive personality
27. _____ Can be cold and aloof
28. _____ Perseveres until the task is finished
29. _____ Can be moody
30. _____ Values artistic, aesthetic experiences
31. _____ Is sometimes shy, inhibited
32. _____ Is considerate and kind to almost everyone
33. _____ Does things efficiently
34. _____ Remains calm in tense situations
35. _____ Prefers work that is routine
36. _____ Is outgoing, sociable
37. _____ Is sometimes rude to others
38. _____ Makes plans and follows through with them
39. _____ Gets nervous easily
40. _____ Likes to reflect, play with ideas
41. _____ Has few artistic interests
42. _____ Likes to cooperate with others
43. _____ Is easily distracted
44. _____ Is sophisticated in art, music, or literature

Appendix C

Need Fulfillment Questionnaire

	Not at all				Extremely
<i>For each question, please circle the number to the right that best represents the feelings you were experiencing during the game.</i>					
Belonging					
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					
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					
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
Control					
I felt powerful	1	2	3	4	5

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					
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
Manipulation check					
<i>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>					
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?	_____ %				

Appendix D

PAI-BOR

Subno _____

PERSONALITY RATING SCALE

Instructions: This questionnaire consists of numbered statements. Read each statement and decide if it is an accurate statement about you. Mark your answer next to each statement. Give your own opinion of yourself. Be sure to answer every statement. Use the following scale:

0 = FALSE, NOT AT ALL TRUE

1 = SLIGHTLY TRUE

2 = MAINLY TRUE

3 = VERY TRUE

- _____ 1. My mood can shift quite suddenly.
- _____ 2. My attitude about myself changes a lot.
- _____ 3. My relationships have been stormy.
- _____ 4. My moods get quite intense.
- _____ 5. Sometimes I feel terribly empty inside.
- _____ 6. I want to let certain people know how much they've hurt me.
- _____ 7. My mood is very steady.
- _____ 8. I worry a lot about other people leaving me.
- _____ 9. People once close to me have let me down.
- _____ 10. I have little control over my anger.
- _____ 11. I often wonder what I should do with my life.
- _____ 12. I rarely feel very lonely.

0 = FALSE, NOT AT ALL TRUE

1 = SLIGHTLY TRUE

2 = MAINLY TRUE

3 = VERY TRUE

- ___ 13. I sometimes do things so impulsively that I get into trouble.
- ___ 14. I've always been a pretty happy person.
- ___ 15. I can't handle separation from those close to me very well.
- ___ 16. I've made some real mistakes in the people I've picked as friends.
- ___ 17. When I'm upset, I typically do something to hurt myself.
- ___ 18. I've had times when I was so mad I couldn't do enough to express all my anger.
- ___ 19. I don't get bored very easily.
- ___ 20. Once someone is my friend, we stay friends.
- ___ 21. I'm too impulsive for my own good.
- ___ 22. I spend money too easily.
- ___ 23. I'm a reckless person.
- ___ 24. I'm careful about how I spend my money.
- ___ 25. Sometimes I get upset.
- ___ 26. Occasionally, I talk about people behind their backs.
- ___ 27. There are some people I don't like.
- ___ 28. I have never told a lie.
- ___ 29. I believe that my brain is not working properly.

_____ 30. A nuclear war may not be such a bad idea.

_____ 31. I lied a lot on this questionnaire.

Appendix E
Recovery Questionnaire

<i>For each question, please circle the number to the right that best represents the feelings you are experiencing RIGHT NOW.</i>	Not at all				Extremely
Belonging					
I feel “disconnected”	1	2	3	4	5
I feel rejected	1	2	3	4	5
I feel like an outsider	1	2	3	4	5
I feel I belonged to the group	1	2	3	4	5
I feel the other players interacted with me a lot	1	2	3	4	5
Self-Esteem					
I feel good about myself	1	2	3	4	5
My self-esteem is high	1	2	3	4	5
I feel liked	1	2	3	4	5
I feel insecure	1	2	3	4	5
I feel satisfied	1	2	3	4	5
Meaningful Existence					
I feel invisible	1	2	3	4	5
I feel meaningless	1	2	3	4	5
I feel non-existent	1	2	3	4	5
I feel important	1	2	3	4	5
I feel useful	1	2	3	4	5

Control					
I feel powerful	1	2	3	4	5
I feel I had control over the course of the game	1	2	3	4	5
I feel I had the ability to significantly alter events	1	2	3	4	5
I feel I was unable to influence the action of others	1	2	3	4	5
I feel the other players decided everything	1	2	3	4	5
MOOD					
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