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Why was I Rejected? How the Attributed Reason for Social Rejection Impacts Subsequent
Behavior

A thesis
presented to
the faculty of the Department of Psychology
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Arts in General Psychology

by
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August 2009

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ABSTRACT

Why was I Rejected? How the Attributed Reason for Social Rejection Impacts Subsequent

Behavior

by

Brian C. Nelson

It is proposed that differences in rejection attribution could yield variations in subsequent prosocial behavior. To test the attribution hypothesis, 109 participants were randomly assigned to a performance based rejection, a personally based rejection, or a control condition and then worked with an ostensible partner via the Internet to develop uses for a common household item. Prosocial behavior was measured by the number of uses a participant generated (working harder for the team). When generating creative uses, participants in the rejection conditions performed significantly worse than nonrejected participants ($F(2,74) = 4.576, p < .05, r^2 = .11$). However, in contradiction to the attribution hypothesis, participants in the 2 rejection conditions did not differ in performance. Explanations for why the rejection attribution hypothesis was not supported are discussed in addition to directions for future research regarding rejection attribution.

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CHAPTER 1

INTRODUCTION

Research on social behavior is continually uncovering the saliency of social rejection in society (Baumeister & Leary, 1995; Williams, 2001, 2007). Aspects of social rejection are used in elementary school classrooms in the form of timeout, social rejection is seen in high schools through the development of “clicks” and social hierarchies, and it is even seen in the work place by the use of subtle forms of social ostracism and exclusion (Williams & Zadro, 2005). It has been well supported that rejection is most often used as a form of punishment for undesirable or socially inappropriate actions and behaviors (Williams, Forgas, von Hippel, & Zadro, 2005; Williams & Zadro). If rejection is used as a behavior modification technique throughout the life span, it is important that negative or antisocial behaviors do not result when attempting to increase positive or socially appropriate behaviors. Because of the human need to belong (Baumeister & Leary), one would hypothesize that when rejected, individuals will behaviorally respond to that rejection in ways that are designed to regain social connectedness, which is a good indication of why it is so often used as a form of punishment. Past research results, however, have been conflicted regarding the aforementioned hypothesis. In fact, it has been suggested by past research that rejection yields not only prosocial behavior (Maner, DeWall, Baumeister, & Schaller, 2007; Sommer & Baumeister, 2002; Sommer & Rubin 2005; Williams, Cheung, & Choi, 2000; Williams & Sommer, 1997), but results in antisocial and aggressive behavior as well (Blackhart, Baumeister, & Twenge, 2006; Buckley, Winkel, & Leary, 2004; Leary, Twenge, & Quinlivan, 2006; Twenge, 2005, Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007; Williams & Warburton, 2003). Additionally, rejection has been shown to cause

self-defeating behavior (Twenge, Cantanese, & Baumeister, 2002) and a deconstructed cognitive state (Twenge, Cantanese, & Baumeister, 2003). The question then arises, what might explain these conflicting results?

One possible explanation for the inconsistencies found in past research is that the rejection paradigms employed are quite varied. The way in which one experiences social rejection may result in different attributions for the rejection. In line with this, Williams and Sommer (1997) hypothesized that the variance in reactions to social rejection could hinge on the rejected individual's attribution for the rejection. Though this was hypothesized before many of the aforementioned works, attribution of rejection has not been directly studied. As attribution has not been a focus, discrepancies in past research findings may be explained by variations in individuals' rejection attributions, which could readily be impacted by the variations in rejection paradigms used. As a result, the goal of the current research is to better understand the possible impact of attributions on the behavioral responses to rejection. In order to forecast postrejection behaviors, it is important to gain an understanding of commonly used rejection paradigms and the attributions that may be elicited by these paradigms.

Past Rejection Paradigms

Some of the most common rejection paradigms are the future prediction paradigm (Twenge, Baumeister, Tice, & Stucke, 2001), the personal information exchange paradigm (Buckley et al., 2004; Bushman, Bonacci, Van Dijk, & Baumeister, 2003; Mendes, Major, McCoy, & Blascovich, 2008; Sedikides, Campbell, Reeder, and Elliot, 1999), various priming paradigms (Maner et al., 2007; Sommer & Baumesiter, 2002), and the ball toss paradigm (Williams et al., 2000; Williams & Sommer, 1997). These paradigms have resulted in both prosocial or positive behaviors and antisocial or negative behaviors.

In the future prediction paradigm participants are given a personality measure. Based on the first use of this paradigm the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975, as cited in Twenge et al., 2001) is given most often. Participants are first given accurate feedback about their extraversion score to increase believability. Participants are then given feedback about their future and told that this information is based on the results of their personality questionnaire, when in fact the feedback is given based on random condition assignment. In the rejection condition participants are informed;

You're the type who will end up alone later in life. You may have friends and relationships now, but by your mid 20s most of these will have drifted away. You may even marry or have several marriages, but these are likely to be short-lived and not continue into your 30s. Relationships won't last, and when you're past the age where people are constantly forming new relationships, the odds are you'll end up being alone more and more. (p. 1060)

Participants in the inclusion condition are informed;

You're the type who has rewarding relationships throughout life. You're likely to have a long and stable marriage and have friendships that will last into your later years. The odds are that you'll always have friends and people who care about you. (p. 1060)

Finally this paradigm uses a misfortune control condition that is informed;

You're likely to be accident prone later in life—you might break an arm or a leg a few times, or maybe be injured in car accidents. Even if you haven't been accident prone before, these things will show up later in life, and the odds are you will have a lot of accidents. (p. 1060)

This final misfortune condition is implemented so that researchers can give negative feedback that is not related to social relationships in order to ensure that it is in fact rejection that is affecting the dependent behavior, and not decreases in mood (Twenge et al., 2001). This paradigm has been used in several rejection studies (Baumeister, Twenge, & Nuss, 2002; Maner et al., 2007; Twenge et al., 2001; Twenge et al., 2002, 2003).

Another commonly used paradigm involves a personal information exchange. This has been seen in studies by Twenge et al. (2003), Buckley et al. (2004), Maner et al. (2007), and Mendes et al. (2008). This paradigm involves participants sharing personal information with other participants or confederates. This has been done a number of ways, in some instances the participants meet in groups in the same room and discuss questions based on the Relationship Closeness Induction Task (RCIT) (Sedikides et al., 1999) and in other instances they disclose the answers to the RCIT with one partner through a PA system. There are also instances where participants are asked simply to talk about themselves and their personality traits and this information is relayed to an ostensible partner via videotaped message or audio recording. In all of these studies conducted, following the exchange of personal information, participants are randomly assigned to a condition and given feedback based on that assignment. Participants in the rejection condition are told that no one in the group wants to meet or work with them or their partner does not want to meet or work with them. Participants in the inclusion condition are informed that everyone in the group wants to meet or work with them or that their partner has a strong desire to meet or work with them. The common thread among these different studies is the exchange of personal information that takes place prior to the rejection.

The inclusion of personal information or personal factors is used in both of the previous paradigms discussed; however, personal information is not always included in rejection

paradigms. Priming paradigms do not typically use personality factors (Maner et al., 2007; Sommer & Baumeister, 2002). A priming paradigm is when the experimenter makes a topic or thought salient in the mind of the participant through a cue or activity. There are two common priming paradigms that are employed in rejection research. In the first priming manipulation a series of word jumbles are used that, when put into phrases, connote inclusion (i.e. “joined the group”, p. 932), exclusion (i.e. “left her alone”, p. 932), or a neutral phrase (i.e. “she fell asleep”, p. 932) (Sommer & Baumeister). By completing this task, participants in the exclusion condition are primed with general thoughts of isolation and exclusion. In another priming paradigm, participants are asked to write a paragraph about a time they were rejected or accepted (Maner et al.). By forcing the participant to remember a time in which he or she was rejected the experimenters are causing the rejection to be fresh in the participant’s mind. In addition, by asking them to write down the incident the experimenter is asking participants to practically relive the rejection. Priming paradigms have been shown to increase present feelings of rejection and are therefore a successful rejection manipulation. This, however, is not the only way in which rejection can be manipulated without the inclusion of personality factors.

Williams and colleagues (Williams et al., 2000; Williams & Sommer, 1997; Zadro, Williams, & Richardson, 2004) developed a ball toss paradigm in which participants are excluded from an activity. In this manipulation, the participant is involved in a spontaneous ball toss game with two other individuals. In one condition the participant is thrown the ball one third of the game (inclusion condition) and in the other condition the participant is thrown the ball the first three rounds of the game and then not thrown the ball again (exclusion condition). There is no explanation given for the sudden rejection of the participant, so it is causally unclear why he or she is being left out. There have been two forms of the ball toss paradigm used in rejection

research; an “in person” ball toss game and a “cyber” ball toss game. The only difference between the two manipulations is that in the cyber version, the participant plays the game with computer generated “others” posing as participants playing the game (Williams et al.). The in-person version uses confederates posing as participants (Williams & Sommer). In both cases, participants in the rejection condition report feeling more rejected and or less accepted than their included counterparts and these participants also report less group cohesion than their included counterparts (Williams et al.; Williams & Sommer), indicating that the manipulation is successful.

Each of the paradigms mentioned above has yielded a number of discrepant results. This is interesting considering all of them are attempting to elicit the same emotion or feeling. One reason that these results might be conflicted is due to the different ways in which each elicits feelings of rejection. It is contended that the different rejection paradigms yield varying rejection attributions on the part of the participant, and these varying attributions lead to different behavioral responses.

Rejection Attribution

Before researchers can attempt to forecast what behaviors are elicited by various rejection attributions, we must first look back at previous research in order to assess what rejection attributions could have been assigned in the different rejection paradigms.

In the future prediction paradigm, participants are given a personality measure prior to the rejection. Because the personality assessment score is used as the reason that participants will be alone later in life, it is believed that participants will attribute this future rejection to characteristics of their personality. This attribution to the self for rejection by others may lead to negative behavioral responses following rejection.

In support of this proposition, Twenge and colleagues (2002, 2003) found that participants receiving the future alone feedback displayed more negative responses than participants not experiencing rejection or participants receiving future misfortune feedback. Researchers showed that rejected participants were more likely to engage in self-defeating behavior, such as choosing the riskier of two lotteries, choosing less healthy behaviors, and being more likely to procrastinate (2002). Furthermore, they found that the future alone participants were more likely to escape from self-awareness and have decreases in reaction times (2003). Though all of these behavioral responses to rejection do not directly lead to antisocial behaviors, they do decrease an individual's ability to engage in prosocial behaviors that might regain connectedness following rejection (Twenge et al., 2002, 2003). In contrast, Maner and colleagues (2007), employing the same future alone rejection manipulation, found that participants showed a prosocial reaction to rejection. In this case rejected participants indicated a greater desire to work with others on a subsequent task than participants not rejected.

In the studies conducted by Maner et al. (2007), the effects of rejection were measured through the use of a social intention questionnaire, whereas research conducted by Twenge et al. (2002, 2003) assessed behavioral responses following rejection. This would suggest that when asked to indicate potential behavior, an individual's intention may not be negatively affected by rejection attributed to the self, whereas when the participant must actually engage in a behavior, the negative effects of rejection would be present. These factors taken together suggest that if an individual is rejected based on personal factors, there will be a negative impact on subsequent behavior, even if this effect is not present when the individual states his or her intentions.

Another paradigm that included personality factors was the personal information exchange paradigm. In this paradigm participants are divulging personality characteristics, so as in the

future prediction paradigm it is believed that participants attribute rejection to the self. In these studies rejected participants were more likely to aggress against the rejecter through the assignment of listening to unpleasant noise (rejected participants assigned less pleasant noise than accepted participants, but no participants assigned aversive noise) (Buckley et al., 2004), were slower to react to stimuli, were less accurate at assessing length of time, had a decrease in the ability to delay gratification, and indicated more agreement with the statement “life is meaningless” (Twenge et al., 2003). In contrast to this, Maner et al. (2007) used a similar personal information exchange rejection in a series of studies and found that rejected individuals, when discussing novel partners, indicated greater desire to work with others (verses working alone), rated others as more sociable and attractive, and rated others as more creative. As in the examination of the future prediction paradigm, the discrepancy can be explained by Maner et al.’s use of an intention as the dependent variable in all but one of the situations in which prosocial behavior was yielded. This supports the proposition that rejection attributed to personality factors yields negative or antisocial behaviors, especially when interacting with the rejecter. The only study that yielded positive behavior in response to personally attributed rejection was that of Mendes et al. (2008). They found that when participants were rejected by a person of a different race, they were more likely to perform better on a word-finding task. This subsequent behavior was not seen when participants were rejected by persons of their own race. Mendes et al. explained this variation by suggesting that participants in mixed race dyads were more likely to attribute the rejection to discrimination, which would be categorized as an external attribution. The findings of Mendes et al. support the proposition that when rejection is attributed to the self, participants are more likely to respond in negative ways; however, when they are able to attribute rejection to external factors, they may respond with positive behaviors.

In summary, it is believed that in studies employing the future rejection paradigm and the personal information exchange paradigm, participants likely attributed rejection by others to something about the self. Although prosocial *intentions* were elicited, antisocial *behaviors* were seen when these paradigms were used. Studies employing rejection paradigms that do not include personal information or personality factors, however, often elicit prosocial behavior. Unfortunately, it is difficult, if not impossible, to attain an understanding of rejection attributions based on the paradigm used in these studies. For instance, in studies that prime rejection through the use of word jumbles that connoted isolation and rejection (Sommer & Baumeister, 2002), it is difficult to ascertain whether these phrases reminded participants of specific instances of rejection, or whether participants were thinking more globally about rejection. Similarly, when participants are asked to think about and describe a past rejection experience (Maner et al., 2007), without coding the descriptions of these experiences (which was not done in their research), researchers are unable to understand what attributions participants are making about the specific rejection experience being remembered. In response to these priming paradigms rejected participants indicated more interest in joining a student organization (Maner et al.) and were able to solve more problems in a set time period and persisted longer when the problems were unsolvable (only those participants who were high in self-esteem) (Sommer & Baumeister). This is in contrast to the negative behavioral reactions seen in the personal rejection paradigms.

Another paradigm that has yielded positive and prosocial behaviors is the ball toss paradigm. Williams and colleagues have shown rejected participants are more likely to conform to their groups incorrect responses (Williams et al., 2000) and come up with more responses for use of a common household item when working with a group (female participants) (Williams & Sommer, 1997). This is incongruent with the results of studies using personality factors in a

rejection paradigm. The caveat to the ball toss paradigms is that the rejection is causally unclear. In one study (Williams et al.), during the cyber ball toss paradigm, participants were told what happened after each throw (i.e. participant “A” threw the ball to participant “B”), as well as whether the throws and the catches were “good” or “bad” (p.751). Unfortunately, in this particular study the researchers did not assess whether these judgments had any impact on subsequent participant behavior. In fact, few studies that have used the cyberball paradigm have included value judgments of performance. Also, in the study conducted by Williams and Sommer involving an in-person ball toss paradigm, participants were given an open-ended prompt to explain the reason for their exclusion. Researchers coded the responses and developed a list of eight mutually exclusive attribution categories. The categories were; “don’t know why they stopped”, “they stopped because it was part of the experiment”, “self-choice”, “layout of the room”, “dissimilarity”, “others’ poor character”, “self’s poor character”, and “self task specific behavior (e.g. I didn’t bounce the ball well enough)” (Williams & Sommer, p. 701). The fact that eight different, mutually exclusive attributional categories were elicited from a single experimental paradigm suggests there is causal ambiguity involved in the ball toss paradigm. If the paradigm was not causally ambiguous, it is expected that participants’ self-reported attributions would have been less varied. Unfortunately, Williams and Sommer did not directly assess how these attributions impacted subsequent behavior. However, prior research indicates that participants who attribute rejection to personal factors react to rejection in ways that are negative and antisocial, whereas research that employs a more causally unclear rejection paradigm, such as the ball toss paradigm, elicits more prosocial behavior. This is further supported by Molden, Lucas, Gardner, Dean, and Knowles (2009), who found that individuals who received explicit negative rejection were more likely to respond to this rejection with

behaviors the authors characterized as antisocial, while persons who failed to be included were more likely to respond in prosocial ways, attempting to regain the lost connectedness. This leads to the proposition that rejection that is causally unclear will be more likely to lead to prosocial behaviors, and this is supported by the findings of Williams and colleagues (1997; 2001) and Sommer and Baumeister (2002).

These studies suggest participants react to rejection in various ways based on the possible attribution assigned to the rejection. This leads researchers to believe that there is a need for studies that attempt to look at the implications for rejection attribution on subsequent behavior.

There are two ways in which rejection attributions can be assessed. The first is to ask the participant to describe why he or she was rejected. There are, however, a few caveats to this procedure. The most pressing issue, particularly in rejection research, is that it brings to the forefront the fact that the study is examining responses to rejection in some way. If the participant is aware that rejection is being studied, it increases the likelihood that the rejection manipulation will not be successful. In addition, there is the possibility of attaining a wide variety of rejection attributions, making analysis of the impact of rejection attribution difficult, and causing an inability to control for variations in participants' descriptions. The attributions would need to be carefully coded by multiple coders.

The second option is to tailor the rejection paradigm so that it induces a certain attribution. For instance, having a participant divulge information about his or her personality, and as a result the rejecter refuses to meet or work with the participant, the participant would likely attribute the rejection to his or her own personality factors. This methodology is used in the current study. Without directly asking the participant about his or her attributions for rejection, researchers increase the believability that the rejection was spontaneous. This also potentially allows specific

rejection attributions to be assessed, as opposed to teasing apart the numerous rejection attributions that might be elicited by an open-ended question.

Present Study

Based on the analysis of the research above, it is proposed that the variations in rejection effects are due to rejection attribution differences. In order to assess whether rejection attribution impacts behavioral responses to rejection, two rejection attribution models are juxtaposed, personally attributed rejection (personal rejection) and performance attributed rejection (performance rejection). For the purposes of this study, rejection is defined as a physical, verbal, or written indication that an individual is not wanted or valued in a group or relationship (Williams et al., 2005). In keeping with this definition, personal rejection is identified as rejection that takes place because of the personality traits or personal attributes of the rejected individual (as seen in the future prediction paradigm and the personal information exchange paradigm). This is also in congruence with the findings of Molden et al. (2009) in that the rejection is explicit and negative. Performance rejection is identified as rejection due to the perceived abilities or observed performance of the rejected individual. This rejection is not directly related to dispositional or personality factors (as seen in the ball toss paradigm). These two paradigms are chosen because based on the previous literature it appears that rejection that is related to personality factors will yield antisocial behaviors, whereas rejection paradigms using a performance task (e.g. the ball toss paradigm) have yielded prosocial behaviors. Juxtaposing personal rejection, performance rejection, and a control or no rejection against the same behavior should lead to a better understanding of the impact that rejection attribution (as elicited by the current paradigms) can have on subsequent behavior.

It is also important, based on the findings of Baumeister, Twenge, and Nuss (2002), that the dependent behavior be somewhat cognitively complex. Baumeister et al. found that rejection seems to impede processes that take cognitive attention as opposed to those that are relatively rote. Therefore, a cognitively complex task is more likely to indicate differences in the impact of rejection attribution, and is more congruent with real life scenarios. Also in line with increasing the applicability to real life, the subsequent task should have a prosocial component. According to the need to belong theory (Baumeister & Leary, 1995), when rejected, participants will respond in prosocial ways to regain connectedness. Therefore, prosocial behaviors will be defined as behaviors that will likely illicit increases in social connectedness. For these reasons it was decided that participants would complete a uses task, previously used by Williams and Sommer (1997). This task involves participants generating creative uses for a common household item, not including its intended uses. This task has been shown to assess cognitive creativity (Friedman & Forster, 2001; Friedman & Forster, 2002) and will therefore require more cognitive attention than a routine task. In addition, participants are led to believe that they are working as a team with a novel partner (not the partner who rejected them), competing with other teams. The inclusion of this information taps into prosocial behavior, as participants who generate a large number of uses will be doing so on behalf of their team (Williams & Sommer), which would likely increase feelings of connectedness, and is thereby believed to be prosocial. This research paradigm should yield a better understanding of when rejection will yield prosocial or positive behaviors and when it will yield antisocial or negative behaviors.

Based on aforementioned research findings, it is hypothesized that a) participants who experience personally attributed rejection will yield poorer performance on a subsequent task than those that have not been rejected and b) participants believing they were rejected due to

personal factors will yield poorer subsequent performance than those rejected based on their performance on a previous task (performance attributed rejection). Further, it is hypothesized that c) participants who experience performance rejection, which is more causally unclear and not directed at personality factors, will perform better on subsequent tasks than those who have not received any rejection. This is in congruence with the finding that these individuals will be working harder due to the failure to gain acceptance and inclusion (Molden et al., 2009).

CHAPTER 2

METHOD

Participants

A power analysis was completed in order to ascertain the number of participants needed to yield results with adequate power. Based on previous research that used experimental manipulations to reject participants in the lab, and assessed for performance on a subsequent task (Maner, 2007; Williams & Sommer, 1997; Williams et al., 2000), an effect size of $f = .370$ was derived (Cohen, 1988). Using GPower (Faul & Erdfelder, 1992), the researcher conducted an a priori power analysis for an F-test (ANOVA) with the following input; $f = .370$, $\alpha = .05$, power = .80, and three conditions (performance rejection, personal rejection, and a control or nonrejection). The results yielded a critical $F(2, 72) = 3.1239$ and a sample size of 75. This indicates that there should be a minimum of 25 participants in each condition.

One hundred twenty-six participants were recruited from introductory psychology courses at a medium sized public university in the Southeast through the use of an online experiment sign up system (SONA). All participants received research credit for participating in the study. Seventeen participants discontinued participation in the study due to their responses on the prescreening measure (the Beck Depression Inventory-II [Beck, Steer, & Brown, 1996]), leaving 109 participants. Participants had a mean age of 21.08 ($SD = 5.44$) and consisted of 65 females and 44 males. The sample consisted of 87% Caucasian, 5% African American, 5% Asian, and 3% other or missing.

Materials

Participants used a Macintosh computer to complete all questionnaires and tasks, excluding the informed consent, which was completed via pen and paper (Appendix A).

Subsequent to reading and signing the informed consent, participants completed a standard demographics questionnaire (Appendix B) and the Beck Depression Inventory – II (BDI-II) (Beck et al., 1996) (Appendix C). This 21-item questionnaire is commonly used to assess an individual's level of depressive symptoms. Each item consists of four statements, subscribing to four different levels of a given symptom. Participants are asked to indicate the statement that best describes themselves over the past 2 weeks, including today. Statements are given a numerical value between 0 and 3 (0 being the least severe and 3 being most severe). The participant's responses are summed and a total score is derived. The BDI-II is self administered and takes approximately 5 to 10 minutes to complete. The BDI-II has been normed on inpatient and outpatient individuals suffering from mental disorders and yielded a high internal consistency and test-retest reliability (Beck et al.). In addition, the BDI-II was normed on 160 college students and was found to have a reliable internal consistency ($\alpha = .89$) and a high convergent reliability ($r = .35$) when compared with other assessments purporting to assess depressive symptomology (Steer & Clark, 1997). In this particular study it was used as a tool to gauge a participant's ability to endure the rejection manipulation safely and without long-term, detrimental, effects¹.

Participants also completed a questionnaire that addressed current mood state (Appendix D). The mood state questionnaire, which was adapted from Buckley et al. (2004), and is often used in rejection research, uses a seven-point Likert – type scale (1 being not at all and 7 being extremely) and asks participants to rate the way they feel right now on 24 mood words (e.g., delighted, nervous, depressed, wounded, down, angry, anxious, pleased, sad, irritated, happy). The mood state questionnaire was used as a manipulation check in order to ensure that participants involved in the rejection manipulations felt rejected. This was accomplished by

assessing directly for feelings of acceptance through four items (*accepted, rejected, excluded, and valued*). Participants in the two rejection conditions should indicate more feelings of rejection and exclusion and fewer feelings of acceptance and value than their nonrejected counterparts. In addition, if variations in performance existed between the performance rejected individuals and the personally rejected individuals, the mood state questionnaire would allow for the assessment of mood as a mediating factor.

Prior to completion of the study, participants were asked to complete a standard manipulation check form (Appendix E). Due to the use of deception in the study, the researcher needed to ensure that the experimental manipulation was in fact successful and that participants were unaware that the rejection they experienced was part of the study. Once the manipulation check was completed, the participants were given a debriefing (Appendix F), which included the true purpose of the study in addition to an item that allowed them the option of removing their data from the analysis (this item was included at the request of the ETSU IRB due to the use of deception in the study).

Procedure

Participants were recruited from undergraduate psychology courses at a medium sized public university in the Southeast through an online experiment sign-up system (SONA). The description of the study indicated that researchers were interested in communication and teamwork via the Internet. Each experiment was run by one of eight laboratory assistants who were randomly assigned to available time slots throughout the study duration (laboratory assistants were given a minimum of three training sessions to ensure the procedure was uniform).

Participants arrived at the laboratory and were given the informed consent to read. Upon signing the consent form participants filled out a demographics questionnaire and the BDI-II

(Beck et al., 1996). Upon completion of the BDI-II, participants' responses were scored in accordance with the recommendations of the Beck Depression Inventory-II Manual (Beck et al.). Per the ETSU IRB, if a participant's score was higher than 29 (which is the cut-off score for "severe" depression according to the BDI-II manual [Beck et al.]), or if he or she had subscribed to any of the statements indicating suicidality on the BDI-II, he or she was referred to the ETSU Counseling Center and discontinued participation in the study. In addition, if a participant had subscribed to any level of suicidality, the researcher called the Community Mental Health Crisis Response Hotline and had the participant speak with a crisis intervention specialist who completed a suicide risk assessment and directed the participant on what steps, if any, he or she needed to take. If participants scored below a 29 on the BDI-II and did not subscribe to any suicidal ideation, they were then randomly assigned to one of three conditions; a performance rejection condition ($n = 31$), a personal rejection condition ($n = 40$), or the control condition ($n = 36$).

Participants were told that "All communication will take place online, but in order to create a controlled environment all participants were required to report to the lab." Participants who were assigned to the performance rejection and personal rejection conditions were told that they would be working with a partner online on two tasks. They first would be asked to write a short essay and exchange it with their partner, who would rate the essay and return it to the participant with feedback. Participants were given 10 minutes to write a brief essay. Those in the performance rejection condition were instructed to write an essay on whether or not standardized tests (e.g., ACTs, SATs, or GREs) should be used in college and graduate school admissions. The exact instructions were as follows;

“For the following task you will be asked to write a brief essay on the use of standardized tests in college and graduate school admissions. This includes, for example, SATs, ACTs, and GREs. Please take a position either against their use in admissions or for their use in admissions and write an essay in support of your position. You will be given 10 minutes to complete this essay, and you must use the entire 10 minutes. After 10 minutes, I will come back in the room and help you submit the essay to your partner. Once you submit the essay to your partner and your partner has submitted their essay to you, I will assist you in retrieving your partner’s essay in order for you to offer feedback. Once both of you have completed your feedback we will exchange comments and move onto the next section.”

Those in the personal rejection condition were instructed to write an essay on what best described their personality and themselves. The exact instructions were;

“For the following task you will be asked to write a brief essay describing yourself. This essay is intended to describe your personality and what you feel defines you as a person. You will be given 10 minutes to complete this essay, and you must use the entire 10 minutes. After 10 minutes, I will come back in the room and help you submit the essay to your partner. Once you submit the essay to your partner and your partner has submitted their essay to you, I will assist you in retrieving your partner’s essay in order for you to offer feedback. Once both of you have completed your feedback we will exchange comments and move onto the next section.”

Participants were then left alone for 10 minutes to complete this task. The laboratory assistant then reentered the room and assisted participants in submitting their essays to their partners. Once they had submitted their essay to the ostensible partner, they received the partners' essay in order to give feedback (in actuality this essay was prewritten by the experimenter). All participants in the performance rejection condition received one of two essays on standardized testing (Appendix G & H). In order to decrease variation in rejection attribution the essay that a participant received was congruent with the position he or she took on standardized testing. All participants in the personal rejection condition received the same personal essay from their ostensible partners (Appendix I). The laboratory assistant then gave the following instruction; "Now that you have your partners essay I will give you 5 minutes to read over it and give some feedback. As in the past you must take the entire 5 minutes to read and give feedback, and I will reenter the room once this time has elapsed." After 5 minutes (in order to give the participant the impression that his or her ostensible partner was reading and evaluating the essay and providing feedback, and to give the participant time to read and make comments on the prewritten essay), the laboratory assistant reentered the room and assisted the participant in submitting his or her feedback for the ostensible partner as well as retrieved the feedback from the ostensible partner on the participant's essay. Participants in the performance rejection condition received the following feedback: "The person who wrote this essay does not seem to have a very good reason for why they believe (do not believe) that standardized tests should be used in admissions. Their arguments are weak and unrelated to the topic. Also, overall they do not seem to have good writing skills." Participants in the personal rejection condition received the following feedback "The person who wrote this essay does not seem to be a very good person. It appears they are trying to fake a perfect personality. Based on this essay they are probably shallow, two-faced,

and somewhat superficial.” The laboratory assistant then excused himself or herself from the room in order to “talk with the other participant.” After 1 to 2 minutes the researcher returned to the room and told the participant the following;

“Your partner no longer wants to participate in the study. This causes a problem because without participating in an entire experiment you are not eligible for the total credit. If you don’t mind waiting a few minutes I am going to try and find a way that you may complete the task so that you can get your full credit.”

The laboratory assistant then exited the room for 1 to 2 minutes in order to increase the believability of the manipulation. The laboratory assistant reentered the room and informed the participant that; “There are multiple studies being conducted concurrently in the lab, and another participant's partner did not show up. I checked with my advisor and she said that you may complete the second half of the study with this new partner in order to receive full credit for your participation,” (adapted from rejection manipulations employed by Bushman & Baumeister, 1998, and Maner et al., 2007). Prior to completing the second task participants filled out the current mood state questionnaire (Buckley et al., 2004).

As in the performance rejection condition, participants in the control group were asked to write an essay on whether or not standardized testing should be used in college and graduate school admissions. They then exchanged essays with their partner and received the same performance essay from the ostensible partner as participants in the performance rejection condition. The control group did not have an opportunity to provide feedback, nor did they receive any feedback. Following completion of the essay exchanges, and once they were given the opportunity to read their ostensible partners’ essay, participants completed the current mood state questionnaire (Buckley et al., 2004) and then proceeded to the second task.

For the second task, all participants were asked to generate as many creative uses for a common household item as they could, and were told that their new partner would be completing the same task (Williams & Sommer, 1997). Participants were told that their “team” was competing with past groups to come up with as many responses as they could. They would not, however, be able to see their partner’s answers during the task. Prior to leaving the room the laboratory assistant gave the following instructions;

“You will now be given 10 minutes to come up with as many creative uses as you can for a common household item, you must take the entire 10 minutes. You may not list its intended uses or uses that are virtually impossible. While you are completing this task your partner will be completing the same task and, though you will not be able to see their answers, once the 10 minutes is completed the two lists will be combined. Any uses that are listed by both individuals will only count once. At the end of the entire study each member of the team with the most uses listed will win a 20 dollar gift card to the campus book store. I will now state the item, start the timer, and leave the room. The item is a knife.”

Participants were then given 10 minutes to generate as many responses as possible. A knife was chosen as the common household item because it is believed that most college aged individuals would have at some point come into contact with a kitchen or other knife. In addition to this, the item used in the original methodology this task is based on was a knife (Williams & Sommer), and it is believed that a knife is a commonly used multitask instrument. Participants entered these uses into the computer online. It should be noted that each individual was entered into a drawing at the end of the study to win a 20 dollar gift card to the campus book store and that chances of winning were not actually impacted by the number of uses generated. Participants were informed

of this during the debriefing. The number of responses, or number of uses participants generated, is the dependent variable. Following this task, participants completed the manipulation check form, and were fully debriefed and thanked for their time and participation.

CHAPTER 3

RESULTS

Prior to completing any analyses on the data collected, it was important to ensure that the data were normally distributed so that it could be appropriately analyzed. The first step taken was to address issues of missing data, skewness, kurtosis, and outliers. Two participants requested that their data not be used in the analysis (in response to the option to “have your data removed from the analysis” on the debriefing) and were therefore dropped from all analyses. All other participants, not including those who discontinued participation due to their responses on the BDI-II ($n = 17$), completed all items and tasks involved in the study and were included in all subsequent analyses².

Following this initial step, the data were assessed for normality. Assessments were completed in three ways; a visual analysis of the data through the use of a histogram, computing the z skewness and z kurtosis statistic, and through the use of the Kolmogorov-Smirnov test (Aron, Aron, & Coups, 2006; Field, 2005). The number of uses generated (the dependent variable) was positively skewed based on a visual analysis of the histogram, a significant z skewness statistic ($z = 2.5, p < .05$), and a significant Kolmogorov-Smirnov statistic ($D(107) = .11, p < .001$). The number of uses variable was transformed using a square root transformation (Field). The square root transformation resulted in a normal distribution of the data. Therefore, when referring to the number of uses variable, it will be understood that this is referencing the square root number of uses variable unless otherwise stated. However, means and standard deviations are reported based on the original *number of uses* variable.

Outliers were defined as any value that is greater than three standard deviations away from the mean (Field, 2005). The current study is examining the between groups variance based

upon the mean in order to establish any statistically significant differences, and a value that is greater than three standard deviations from the mean would likely alter the value of the mean. Therefore, after completing the needed transformation due to skewness, the data were assessed for outliers. There was a single outlier in the number of uses variable, greater than three standard deviations below the mean, ($x = 0$) with a z -score of -3.68 . This variable was assigned a z -score of 3 and converted back to a raw score ($x = .73$), allowing the value to add weight to the mean without skewing the mean (Field).

Mood and Acceptance

Responses to the mood state questionnaire (Buckley et al., 2004) were used as a manipulation check to ensure that the research paradigm was effective. Two variables were derived from this questionnaire to assess average feelings of acceptance and average mood. Average mood was attained by inverse scoring all negative mood items in the questionnaire (*nervous, depressed, wounded, down, angry, anxious, sad, irritated, excluded, tense, uneasy, hurt, dejected, annoyed, rejected, injured, mad, and pained*) (Buckley et al.), then summing all item responses and dividing by 24. This yielded an average mood based on a seven-point Likert type scale (1 = negative mood & 7 = positive mood). In addition to this, an average feeling of acceptance was calculated based on the mean response to four specific items that assessed levels of acceptance (*accepted, valued, the inverse score of rejected, and the inverse score of excluded*). A one-way analysis of variance (ANOVA) was conducted in order to assess differences in mood and acceptance between the three conditions. Both the ANOVA on average acceptance and average mood resulted in a significant Levene test statistic, indicating a lack of homogeneity of variance. As a result, both omnibus test statistics are reported based on the Welch F -test, as suggested by Field (2005).

An ANOVA assessing average feelings of acceptance by condition resulted in a significant test statistic ($F(2,64.05) = 17.50, p < .001, r^2 = .35$) suggesting that there was a difference in reported feelings of acceptance across the three conditions. A follow up Games-Howell post hoc analysis (used due to the lack of homogeneity of variance) was conducted in order to assess where these differences lie. This analysis revealed a significant difference between participants in the control group and participants in the performance rejection condition ($d = -.77$) in addition to a significant difference between participants in the control group and participants in the personal rejection condition ($d = -1.31$). Results indicate that participants in the two rejection conditions reported lower feelings of acceptance than did participants in the control condition. There was no difference in feelings of acceptance between participants in the performance rejection condition and the personal rejection condition (see Table 1).

Results from the ANOVA assessing average mood by condition were statistically significant as well ($F(2,54.96) = 23.01, p < .001, r^2 = .45$). A follow up Games-Howell post hoc analysis was once again used to assess differences between the three conditions. Results revealed a significant difference between participants in the control group and participants in the performance rejection condition ($d = -1.12$), and a significant difference between participants in the control group and the personal rejection condition ($d = -1.27$) (see Table 1). These findings suggest that participants in both rejection conditions reported a less positive mood than participants not experiencing rejection. There was no difference in average mood between participants in the performance rejection condition and the personal rejection condition. Results from these analyses suggest that the paradigm was effective in manipulating feelings of acceptance and mood.

Table 1

Descriptive Statistics for Average Mood and Average Acceptance

Average Mood	n	<i>M</i>	<i>SD</i>	95% <i>CI</i>
Performance rejection	31	4.99**	.94	4.64-5.34
Personal rejection	40	4.68**	1.18	4.30-5.06
Control	36	5.80	.38	5.67-5.93
Total	107	5.15	1.02	4.95-5.34

Average Acceptance	n	<i>M</i>	<i>SD</i>	95% <i>CI</i>
Performance rejection	31	4.97*	1.15	4.54-5.39
Personal rejection	40	4.41**	1.20	4.03-4.80
Control	36	5.72	.75	5.47-5.98
Total	107	5.01	1.19	4.79-5.24

Note. Means and confidence intervals are reported on a 7-point Likert-type scale with higher means equaling more positive mood or acceptance. * Indicates significant difference from control condition at $p < .01$. ** Indicates significant difference from control condition at $p < .001$.

Number of Uses Generated

In order to test the hypothesis that rejection attribution would impact subsequent performance, an ANOVA was conducted. This was used as an omnibus test in order to assess for statistically significant differences between the three group means that is greater than chance, using an alpha of .05. A Levene test revealed that the assumption of homogeneity of variance had been violated; therefore, the *F*-statistic is reported based on the Welch *F*-test (Field, 2005). Results from the analysis revealed no significant differences in number of uses generated across

the three conditions ($F(2,66.69) = .529, p = .592$). Descriptive statistics for the number of uses generated can be seen in Table 2. This suggests that though feelings of acceptance and mood were manipulated based on the current paradigms rejection condition did not significantly impact performance on the number of uses task.

Table 2

Descriptive Statistics for Number of Uses Generated by Condition

Condition	n	<i>M</i>	<i>SD</i>	95% <i>CI</i>
Performance rejection	31	15.74	7.83	12.87-18.61
Personal rejection	40	16.70	7.80	14.21-19.19
Control	36	17.92	9.51	14.70-21.14
Total	107	16.83	8.39	15.22-18.44

Creative Uses Generated

Upon completion of the intended analyses, it was noticed that some of the uses participants generated did not fall under the category of creative or novel. For example, some participants included uses like “peeling an apple” or “whittling a piece of wood” which are intended uses for a knife, while also generating creative uses, such as using a knife “in place of the bottle to play spin the bottle” or sticking “two knives in a wall to hold up a shelf”. For this reason it was decided that the dependent variable needed to be recoded to only include uses that followed the directions given to participants. Two laboratory assistants, blind to participants’ condition assignment, coded participants’ uses and only included creative uses. A creative use was defined as a novel use, not including a knife’s intended uses. The two laboratory assistants had a high interrater reliability ($r = .90$); however, to ensure that level of creativity was not a factor in determining inclusion, if either laboratory assistant found the use to be creative or

novel, it was included in the analysis. Following exclusion of intended uses, the mean number of creative uses across all conditions dropped to 9.16 ($SD = 5.83$).

Prior to analyzing the creative uses variable, it was first assessed for normality. The creative uses generated was positively skewed based on a visual analysis of the histogram, a significant z -skewness statistic ($z = 2.66, p < .01$), and a significant Kolmogorov-Smirnov statistic ($D(107) = .098, p < .01$). The number of uses variable was transformed using a square root transformation (Field, 2005). The square root transformation resulted in a normal distribution of the data. Therefore, when referring to the creative uses variable, it will be understood that this is referencing the square root creative uses variable unless otherwise stated. However, means and standard deviations are reported based on the original *creative uses variable*.

A one-way ANOVA was conducted on the creative uses variable, and results imply that there still existed no difference between the three groups and number of creative uses generated ($F(2,104) = 1.573, p = .212$). In order to ensure that knowledge of the rejection manipulation did not impact the aforementioned null finding, participants who indicated on the manipulation check that they were aware of the true purpose of the study or believed that their partner did not exist were removed from the final analyses ($n = 30$)³. This altered the sample size; however, based on the previously mentioned power analysis there were still enough participants to maintain an adequate power (see Table 3). A one-way ANOVA was conducted to assess for a significant difference between the three conditions after removing these participants, followed by a Bonferroni post hoc analysis. One-way ANOVA results suggested a significant difference between the three conditions ($F(2,74) = 4.576, p < .05, r^2 = .11$) on the number of creative uses generated. A post hoc analysis revealed that there was in fact a significant difference between participants in the control condition and participants in the personal rejection condition ($d = -$

.62), and a marginally significant difference between participants in the control condition and the performance rejection condition ($d = -.87$), in the number of creative uses generated.

Participants in both rejection conditions generated fewer creative uses than participants in the control condition. No difference was found between participants in the two rejection conditions (see Table 3).

Table 3

Descriptive Statistics for Number of Creative Uses Generated by Condition, Not Including Participants that Indicated Knowledge of the Study Purpose

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>95% CI</i>
Performance rejection	26	7.58 [†]	3.85	6.02-9.13
Personal rejection	25	7.96*	6.72	5.19-10.73
Control	26	11.88	5.78	9.55-14.22
Total	77	9.16	5.83	7.83-10.48

Note. * Indicates significant difference from control condition at $p < .05$. [†] Indicates marginally significant difference from control condition at $p = .06$.

Williams and Sommer (1997) used this same dependent variable and found that gender impacted number of uses generated. Williams and Sommer suggested that this was due to females blaming the rejection on themselves more than male participants. For this reason a 3 (condition) x 2 (gender) ANOVA was conducted to assess for any gender differences in number of creative uses generated by condition in the current findings. Results indicated no main effect for gender ($F(1,71) = 1.128, p = .31$), nor an interaction effect for condition and gender ($F(2,71) = 1.833, p = .167$) on creative uses generated.

CHAPTER 4

DISCUSSION

The goal of the current study was to assess the difference in behavioral responses to variations in rejection attribution. It was hypothesized that subsequent to a personal rejection experience, participants would perform more poorly on the uses task than their performance rejected or control counterparts. It was also hypothesized that participants who experienced a performance based rejection would perform better on the subsequent task than their control counterparts. However, results from the analyses failed to establish a significant difference between the rejection conditions or an increase in performance as a result of performance rejection when compared to the control group. There was a significant difference between participants in the two rejection conditions and the control condition when only creative uses were assessed (i.e., when participants followed the directions for the task). In addition, mood and feelings of acceptance differed significantly, such that participants in both rejection conditions reported less positive mood and less feelings of acceptance following the rejection manipulation than those in the control group. Though the results of the current study do not support the proposition that rejection attribution impacts subsequent mood, feelings of acceptance, or behavior, they do not explicitly refute it either. Methodological possibilities, as well as theoretical suggestions from past research, are discussed as explanations for the current findings. In addition to this, suggestions for future research are proposed.

It was suggested that the uses task would be an appropriate barometer for the impact of rejection on subsequent behavior because it has a level of cognitive creativity (Friedman & Forster, 2001; Friedman & Forster, 2002) that would require more cognitive ability than a routine task, and it allowed for the implementation of a prosocial component by having

participants work with a partner (Williams & Sommer, 1997). It is, however, possible that the dependent variable failed to meet one or both of these requirements. In regards to the cognitive effort needed for the uses task, it was understood that this task has been shown to assess cognitive creativity (Friedman & Forster, 2001; Friedman & Forster, 2002), but cognitive creativity does not necessarily equate to cognitive effort. In a review of the research on creativity, Simonton (2000) suggests that though creativity does require a certain level of cognitive ability, creativity and cognitive ability are weakly related beyond that level, and research on rejection suggests that only cognitively difficult tasks are impacted subsequent to rejection (Baumeister et al., 2002). Baumeister et al. found that participants who experienced future rejection threat performed more poorly on a difficult cognitive task but not on relatively easy tasks. The researchers found that when rejection threatened participants were asked complex questions, they performed much worse than participants who had not experienced social threat. However, when rejection threatened participants were asked simple recall questions, they performed as well as participants in the two control conditions (Baumeister et al.). These findings lead to the proposition that rejection only impacts subsequent behavior if that behavior requires a heightened level of cognitive functioning or attention.

The current research supports past research findings (Baumeister et al., 2002). When all generated uses were included, including intended uses such as “skinning an animal” or “spreading butter”, no difference was seen between participants in the two rejection conditions and participants in the control condition. However, when only novel uses were included, such as “using the knife as a mirror” or using a knife to “rewind a VHS tape”, a difference in performance emerged. These findings suggest that there was a difference in ability to develop creative uses but not general uses. These inferences must be taken with caution, however, as

participants seemed to be generating intended and unintended uses. It cannot be definitively concluded what results may have emerged if all participants' effort had been strictly directed at generating novel uses. The current findings suggest that future researchers be more explicit when giving directions for the uses task, as participants in this study seemed to have difficulty understanding that they were only supposed to generate creative uses.

In another study using the same dependent variable, Williams and Sommer (1997) asked participants to work together with two confederates to come up with as many uses as possible for a knife, thereby labeling more uses generated as a sign of prosocial behavior (i.e., working harder for the team). Williams and Sommer, however, had participants work with two experimental confederates on the task in a room together, whereas participants in the current study believed they were completing the task with another person via the Internet. Though this may seem like a relatively small difference, Maner and colleagues (2007) found that an anticipated in-person interaction could alter the subsequent behavior of a rejected individual. Results from their study suggest that when rejected participants anticipate a future face-to-face interaction with their partners, they will present subsequently with prosocial behaviors; however, if participants do not anticipate a future in-person interaction, they will present with more antisocial behaviors (Maner et al.). In the current study participants in all conditions were informed from the outset that the only interactions that would take place would be via the Internet. Participants in the Williams and Sommer study had an in-person interaction with their partners, which may explain why the same prosocial tendency seen in their findings was not observed in the current study. However, in contradiction to Maner et al.'s findings, Williams et al. (2000) found that participants were more likely to conform to an incorrect group response (a prosocial behavior) following rejection using the cyber ball toss paradigm, and in this case,

participants had no anticipation of a future in-person interaction. The conflicted findings mentioned above may point to a theoretical explanation for the discrepant results in the literature on rejection, which is examined in further detail later in the discussion.

Though there was a significant difference between control participants and rejected participants in the current study on state mood and feelings of acceptance, rejected participants did not indicate feelings of rejection or negative mood (as assessed by the mood state questionnaire). When examining the means for self-reported mood and feelings of acceptance, participants' mean scores on both mood and level of acceptance did not drop below a self-report of 4 (indicating neutrality), in addition to the confidence intervals not including any values below 4. These results may lead to the proposition that rejection was not significantly manipulated in the current research paradigm. However, these findings are congruent with past research, which suggests that experimental rejection paradigms typically do not lead to a negative mood or feelings of rejection but only a decrease in positive mood and feelings of acceptance (Blackhart, Knowles, Nelson, & Baumeister, 2009). Furthermore, research findings consistently suggest that when significant mood changes do occur following a rejection manipulation, they do not mediate the relationship between rejection and subsequent behavior (Baumeister et al. 2002; Twenge, Baumeister, et al., 2001; Twenge et al., 2002, 2003; Zadro et al., 2004). In other words, the fact that there was a difference in generation of creative uses based on condition assignment suggests that the rejection paradigms were effective, even though rejected participants only indicated decreases in feelings of acceptance and positive mood and not feelings of rejection and negative mood.

In the introduction it was suggested that there are two possible ways to assess rejection attribution, either by tailoring a rejection paradigm so that it induces a specific rejection

attribution by having the participant indicate his or her perceived rejection attribution. Because of the complexities, and a likely increase of uncontrolled variance in the latter methodology, the intention was to elicit different rejection attributions by employing two different rejection paradigms. Based on the lack of significant differences in number of uses generated, mood, and feelings of acceptance between participants in the personal rejection condition and the performance rejection condition, it is possible that these two rejection paradigms did not induce different rejection attributions. Mendes et al. (2008) successfully manipulated rejection attributions by having participants rejected by an in-group race other or by an out-group race other. Mendes et al. found variations in subsequent performance based on the race of the rejecter, but research on discrimination and interracial interactions are the only studies that have directly seen an impact of attribution on subsequent behavior. This leads to the possibility that the variation in the current rejection conditions was not drastic or pervasive enough. The difference between rejection based on personality factors and rejection based on performance, though differing in attribution per se, are both somewhat self-related. This could be especially true of individuals who believe that their behavior is directly related to their self-worth, or individuals that gain their self-worth from their abilities, as suggested by Crocker, Luhtanen, Cooper, and Bouvrette (2003). Discrimination on the other hand is completely external, in addition to being extremely antagonistic. In other words, the difference between possible rejection attributions elicited by Mendes et al. was much more extensive than the rejections used in the current study. Perhaps discrimination is such a pervasive construct that only alternative attributions equally as pervasive will alter rejection attribution and yield variations in subsequent behavioral responses.

Attribution Alternatives

Another possibility is that rejection is such a detrimental event that rejection attribution simply does not impact subsequent behavior. In support of this, Smith and Williams (2004) found that when confederates stopped responding to participants via cellular telephone text messaging, participants experienced significant decrements in feelings of belonging, mood, and self-esteem. These results are surprising given the number of possible alternative explanations for a lack of texts received other than rejection (e.g., technical problems, reception problems, no one sending a message). In another study using the cyber ball paradigm, excluded participants reported lower feelings of belongingness, self-esteem, and meaningful existence, even when they were informed that the two other participants in the cyber ball game were computer generated others (Zadro et al., 2004). These decrements were also seen when the participants were informed that the computer generated others' actions were scripted (Zadro et al.). It should also be noted that, though Mendes et al. (2008) did find differences in subsequent behavior based on the race of the rejecter, these differences were minimal and only reached marginal significance. The congruence of these findings, despite a plethora of alternative attributions, lend strong support to the possibility that rejection is so detrimental that subsequent responses are driven by this rejection regardless of attribution. Though this hypothesis is tempting, it does not explain why rejection has yielded both prosocial and antisocial behaviors.

Perhaps there is a theoretical explanation other than attribution that could account for the variance in behavioral responses to rejection. In studies conducted by Williams and colleagues (1997, 2000) and Sommer and Baumeister (2002), rejection manipulations yielded positive and prosocial behaviors; however, these manipulations were fairly indirect (in contrast to the current rejection manipulations). Williams and colleagues (1997, 2000) rejected participants suddenly

and without explanation. Instead of a direct rejection (e.g. explicitly being told they would not be included), participants were simply ignored. In another study using an indirect rejection, Sommer and Baumeister used a word jumble that primed feelings of rejection. In this study it is highly unlikely that participants had a clear understanding of why, or even if, they felt a decrease in belonging. The rejections used in the current study were not nearly as indirect as the paradigms used by Williams and colleagues (1997, 2000) or Sommer and Baumeister. In further support of this proposition, Molden et al. (2009) found that when participants were explicitly rejected (similar to the rejection manipulations used in the current study), participants responded in ways that were perceived as antisocial. However, when participants were ignored or excluded (similar to the ostracism manipulations often employed by Williams and colleagues), they responded in prosocial ways, attempting to regain connectedness. In other words, it could be that rejection attribution is not moderating the impact of rejection on subsequent behavior, but instead that it is moderated by whether the rejection is explicit or active versus implicit or passive (Molden et al.).

Conclusions

Though the current study did not reach the intended goal of establishing a possible relationship between rejection attribution and subsequent behavior, the results do not conclusively prove that such a relationship is not present. A careful analysis of the rejection manipulations used, in addition to the dependent measure chosen, suggest that the null findings could be a result of problems in a new research paradigm or alternative theoretical constructs moderating the behavioral responses to rejection. There still exists great discrepancy in the research on behavioral responses to rejection. This is disconcerting given the ubiquity of social rejection in society and its prevalence as a behavioral modification technique in a number of social domains (Williams & Zadro, 2005). Future research should continue to study the possible

relationship between social rejection attribution and subsequent responses as well as other avenues mentioned in order to lend clarity to past and current research findings. By gaining a better understanding of behavioral responses to rejection, researchers may begin to gain a better understanding of why, and when, rejection leads to prosocial and advantageous behavior or aggression and violence.

Future Research

The results of the current research suggest multiple avenues for research, the first of which would be to expand on Molden et al.'s (2009) directness theory. The discrepant results in the literature could be driven by variations in directness across the different rejection paradigms. It can be argued that rejection paradigms such as the personal information exchange paradigm and the future prediction paradigm (Twenge et al., 2001) are more explicit than the ball toss paradigms employed by Williams and Sommer (1997) and Williams et al. (2000), where participants are essentially ignored. Though it may be tempting to simply juxtapose two rejection paradigms that differ in directness on a single dependent behavior, this methodology would be fraught with the possibility of extraneous variance, as it could cause both variations in attribution and directness within each paradigm, leading to uninterpretable findings. For this reason it would be more appropriate to select a specific rejection paradigm, such as the personal information exchange, and manipulate the directness of the rejection. Participants in one condition could be receive explicit negative feedback from their partners (direct rejection), whereas participants in another condition would be all of the sudden and without explanation ignored (indirect rejection). Molden et al.'s findings, in congruence with the discrepant research, would lead to the hypothesis that participants in the indirect rejection condition would respond in ways to regain connectedness, whereas participants in the direct rejection condition would respond in more

protectionist ways, which are often seen as antisocial. This line of research could begin to shed light on the conflicted findings of past rejection studies.

Another avenue for future research could hinge on the hypothesis that rejection attribution does in fact impact behavioral responses to rejection. Based on the current findings, in combination with the findings of Smith and Williams (2004) and Zadro et al. (2004), it is believed that attempting to elicit variations in attributions based on a methodological paradigm will be highly unsuccessful. It is therefore suggested that future research have participants self-report rejection attribution. In the current study it was believed that this would likely cue participants to any rejection manipulation, thereby decreasing the effectiveness of the rejection and negating any possible impact on subsequent behavior. This could be avoided, however, if the rejection attribution was elicited after the behavioral measure. Another concern in the development of the current methodology was the amount of variation in rejection attributions. Williams and Sommer (1997) elicited attributions from participants in the manipulation check, following the behavioral dependent variable through the use of an open-ended question and developed eight mutually exclusive attribution categories. Future research could use these categories as a way of decreasing response variability in rejection attribution, though these may need to be adapted if researchers are not using the same rejection paradigm. It is believed that this more direct assessment of rejection attribution will lend clarity to whether rejection attribution is impacting subsequent behavioral responses to rejection.

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FOOTNOTES

¹ The BDI-II (Beck et al., 1996) was included as a prescreening measure at the direction of East Tennessee State University's Institutional Review Board. Members of the Board expressed concern that the combination of deception and rejection used in the current rejection paradigm may have higher risk levels for participants who are suffering from severe depression or suicidal ideation.

² Approximately 30 participants documented on the manipulation check form that deception had taken place in the course of the study in addition to suggesting that the deception dealt with a manipulation of mood, that their partner may not have existed, or that the purpose of the study was to gauge their reaction to their partners' feedback. An independent samples *t*-test was conducted in order to assess whether there was a significant difference in feelings of acceptance or mood between those who guessed around the true purpose of the study and those who did not. Analyses revealed that there was no significant difference in mood ($t(105) = .264, p = .792$) or feelings of acceptance ($t(105) = .105, p = .917$). In addition, a *t*-test was conducted to assess for a difference in number of uses generated based on whether participants indicated knowledge of the study purpose or that their partner did not exist. Results suggested no difference between naïve and knowledgeable participants ($t(105) = -1.89, p = .06$). Based on these findings, it was concluded that participants who guessed around the purpose of the study could remain in the initial analyses.

³ A *t*-test was conducted to assess for any difference in number of creative uses generated based on whether the participant indicated knowledge of the study purpose or that his or her partner did not exist. Results suggested a significant difference between these two groups of participants ($t(105) = 2.25, p < .05$). Participants who indicated knowledge of the study purpose

had a higher square root mean of creative uses ($M = 3.33$, $SD = .89$) than participants who did not know the true purpose of the study ($M = 2.82$, $SD = 1.11$). Because knowledge of the study purpose or belief that their partner did not exist had an impact on number of creative uses, participants who reported this were removed from the analysis of creative uses.

APPENDIXES

Appendix A

Consent Form

Consent Form

This form will explain more about being a participant in this research study. It is important that you read this material carefully and then decide whether you wish to be a volunteer in this study.

PURPOSE: The purpose of this study is to test the abilities of individuals to communicate and work as a team online.

DURATION: The experiment will last no longer than one hour, and you will receive 3 research credits for participation.

PROCEDURES: Students currently enrolled in undergraduate psychology courses at ETSU will be recruited for participation in this study. Participants will be asked to complete some questionnaires and a series of tasks with a partner on a computer via the Internet. You will not have any physical contact with this person; all interactions will take place online. The experiment will last no longer than one hour.

ALTERNATIVE PROCEDURES/TREATMENTS: None

POSSIBLE RISKS/DISCOMFORTS: There are minimal risks and discomforts associated with this study. If any discomfort arises, however, please alert the experimenter immediately and someone will be made available to speak with you.

POSSIBLE BENEFITS: You understand that involvement in this experiment is not likely to produce any direct, immediate benefit to you other than course/experimental credit for your time spent in the experiment. You will receive research 3 credits for participation in this study.

COMPENSATION IN THE FORM OF PAYMENTS TO RESEARCH PARTICIPANTS: Participants will also be eligible to win a twenty dollar gift card to the campus book store.

VOLUNTARY PARTICIPATION: Participation in this research is voluntary, and you are free to withdraw consent and discontinue participation at any time without prejudice, penalty, or loss of benefits you might otherwise be entitled. If you choose to withdraw consent at any time, you will receive credit for the time spent in the experiment.

CONTACT FOR QUESTIONS: If you have any questions about the experiment, research-related problems, or would like to discuss any aspect of the experiment at any time, you may contact Brian Nelson (Principle Investigator) at 423-439-5623 or at zbcn2@goldmail.etsu.edu; or Dr. Blackhart (Co-Investigator) at 423-439-4613 or at blackhar@etsu.edu. You may call the Chairman of the Institutional Review Board at 423-439-6054 for any questions you may have about your rights as a research subject. If you have any questions or concerns about the

research and want to speak with someone independent of the research team or you cannot reach the study staff, you may call an IRB Coordinator at 423-439-6055 or 423-439-6002.

CONFIDENTIALITY: Every attempt will be made to see that your study results are kept confidential. A copy of the records from this study will be stored on ETSU's campus in the Department of Psychology for at least 5 years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a subject. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, ETSU IRB, and personnel particular to this research have access to the study records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

By signing below, you confirm that you have read or had this document read to you. You will be given a signed copy of this informed consent document. You have been given the chance to ask questions and to discuss your participation with the investigator, and these questions, if any, have been answered to your satisfaction. You freely and voluntarily choose to be in this research project.

SIGNATURE OF PARTICIPANT

DATE

PRINTED NAME OF PARTICIPANT

DATE

SIGNATURE OF INVESTIGATOR

DATE

Appendix B

Demographics Questionnaire

Demographic Information

Participant Number: _____

Gender: M F

Age: _____

Race (please circle):

White / Caucasian

Black or African-American

Native American or Alaska Native

Asian

Native Hawaiian or Pacific Islander

Other _____

Ethnicity (please circle):

Hispanic / Latino

Not Hispanic / Latino

Primary language spoken in home? _____

Comments:

Appendix C

Beck Depression Inventory

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. If several statements in the group seem to apply equally well, choose the highest number for that group. Be sure that you do not choose more than one statement for any group, including item 16 (changes in sleep pattern) and item 18 (changes in appetite). When you are finished with this page do not continue or select "next", simply use the noise maker to alert the experimenter you have finished

<p>1 Sadness <i>Choose only one of the following</i> 00 I do not feel sad. 01 I feel sad much of the time. 02 I am sad all the time. 03 I am so sad or unhappy I cannot stand it.</p> <p>2 Pessimism <i>Choose only one of the following</i> 00 I am not discouraged about my future. 01 I feel more discouraged about my future than I used to be. 02 I do not expect things to work out for me. 03 I feel my future is hopeless and will only get worse.</p> <p>3 Past Failure <i>Choose only one of the following</i> 00 I do not feel like a failure. 01 I have failed more than I should have. 02 As I look back, I see a lot of failures. 03 I feel I am a total failure as a person.</p> <p>4 Loss of Pleasure <i>Choose only one of the following</i> 00 I get as much pleasure as I ever did from the things I enjoy. 01 I don't enjoy things as much as I used to. 02 I get very little pleasure from the things I used to enjoy. 03 I can't get any pleasure from the things I used to enjoy.</p> <p>5 Guilty Feelings <i>Choose only one of the following</i> 00 I don't feel particularly guilty. 01 I feel guilty over many things I have done or should have done. 02 I feel quite guilty most of the time. 03 I feel guilty all of the time.</p>	<p>6 Punishment Feelings <i>Choose only one of the following</i> 00 I don't feel I am being punished. 01 I feel I may be punished. 02 I expect to be punished. 03 I feel I am being punished.</p> <p>7 Self-Dislike <i>Choose only one of the following</i> 00 I feel the same about myself as ever. 01 I have lost confidence in myself. 02 I am disappointed in myself. 03 I dislike myself.</p> <p>8 Self-Criticalness <i>Choose only one of the following</i> 00 I don't criticize or blame myself more than usual. 01 I am more critical of myself than I used to be. 02 I criticize myself for all my faults. 03 I blame myself for everything bad that happens.</p> <p>9 Suicidal Thoughts or Wishes <i>Choose only one of the following</i> 00 I don't have any thoughts of killing myself. 01 I have thoughts of killing myself, but I would not carry them out. 02 I would like to kill myself. 03 I would kill myself if I had the chance.</p> <p>10 Crying <i>Choose only one of the following</i> 00 I don't cry any more than I used to. 01 I cry more than I used to. 02 I cry over every little thing. 03 I feel like crying, but I can't.</p>
---	---

11 Agitation

Choose only one of the following

- 00 I am no more restless or wound up than usual.
- 01 I feel more restless or wound up than usual.
- 02 I am so restless or agitated that it is hard to stay still.
- 03 I am so restless or agitated that I have to keep moving or doing something.

12 Loss of Interest

Choose only one of the following

- 00 I have not lost interest in other people or activities.
- 01 I am less interested in other people or things than before.
- 02 I have lost most of my interest in other people or things.
- 03 It's hard to get interested in anything.

13 Indecisiveness

Choose only one of the following

- 00 I make decisions about as well as ever.
- 01 I find it more difficult to make decisions than usual.
- 02 I have much greater difficulty in making decisions than I used to.
- 03 I have trouble making any decision.

14 Worthlessness

Choose only one of the following

- 00 I do not feel I am worthless.
- 01 I don't consider myself as worthwhile and useful as I used to.
- 02 I feel more worthless as compared to other people.
- 03 I feel utterly worthless.

15 Loss of Energy

Choose only one of the following

- 00 I have as much energy as ever.
- 01 I have less energy than I used to have.
- 02 I don't have enough energy to do very much.
- 03 I don't have enough energy to do anything.

16 Changes in Sleep Pattern

Choose only one of the following

- 00 I have not experienced any change in my sleeping pattern.
- 01a I sleep somewhat more than usual.
- 01b I sleep somewhat less than usual.
- 02a I sleep a lot more than usual.
- 02b I sleep a lot less than usual.
- 03a I sleep most of the day.
- 03b I wake up 1-2 hours early and can't get back to sleep.

17 Irritability

Choose only one of the following

- 00 I am no more irritable than usual.
- 01 I am more irritable than usual.
- 02 I am much more irritable than usual.
- 03 I am irritable all the time.

18 Changes in Appetite

Choose only one of the following

- 00 I have not experienced any change in my appetite.
- 01a My appetite is somewhat less than usual
- 01b My appetite is somewhat more than usual
- 02a My appetite is much less than before.
- 02b My appetite is much more than before.
- 03a I have no appetite at all.
- 03b I crave food all the time.

19 Concentration Difficulty

Choose only one of the following

- 00 I can concentrate as well as ever.
- 01 I can't concentrate as well as usual.
- 02 It's hard to keep my mind on anything for very long.
- 03 I find I can't concentrate on anything.

20 Tiredness or Fatigue

Choose only one of the following

- 00 I am no more tired or fatigued than usual.
- 01 I get more tired or fatigued more easily than usual.
- 02 I am to tired or fatigued to do a lot of the things I used to do.
- 03 I am to tired or fatigued to do most of the things I used to do.

21 Loss of Interest in Sex

Choose only one of the following

- 00 I have not noticed any recent change in my interest in sex.
- 01 I am less interested in sex than I used to be.
- 02 I am much less interested in sex now.
- 03 I have lost interest in sex completely.

Appendix D

Mood State Questionnaire

Please rate how you feel **RIGHT NOW** at this moment. Circle a NUMBER to indicate your response for each item.

1. Delighted:	not at all	1	2	3	4	5	6	7	extremely
2. Nervous:	not at all	1	2	3	4	5	6	7	extremely
3. Accepted:	not at all	1	2	3	4	5	6	7	extremely
4. Depressed:	not at all	1	2	3	4	5	6	7	extremely
5. Wounded:	not at all	1	2	3	4	5	6	7	extremely
6. Down:	not at all	1	2	3	4	5	6	7	extremely
7. Angry:	not at all	1	2	3	4	5	6	7	extremely
8. Anxious:	not at all	1	2	3	4	5	6	7	extremely
9. Pleased:	not at all	1	2	3	4	5	6	7	extremely
10. Sad:	not at all	1	2	3	4	5	6	7	extremely
11. Irritated:	not at all	1	2	3	4	5	6	7	extremely
12. Happy:	not at all	1	2	3	4	5	6	7	extremely
13. Excluded:	not at all	1	2	3	4	5	6	7	extremely
14. Tense:	not at all	1	2	3	4	5	6	7	extremely
15. Uneasy:	not at all	1	2	3	4	5	6	7	extremely
16. Hurt:	not at all	1	2	3	4	5	6	7	extremely
17. Dejected:	not at all	1	2	3	4	5	6	7	extremely
18. Annoyed:	not at all	1	2	3	4	5	6	7	extremely
19. Rejected:	not at all	1	2	3	4	5	6	7	extremely
20. Injured:	not at all	1	2	3	4	5	6	7	extremely
21. Valued:	not at all	1	2	3	4	5	6	7	extremely
22. Cheerful:	not at all	1	2	3	4	5	6	7	extremely
23. Mad:	not at all	1	2	3	4	5	6	7	extremely
24. Pained:	not at all	1	2	3	4	5	6	7	extremely

Appendix E

Manipulation Check Form

In your own words, what was the present study about?

Did you believe, at any time, that the experiment dealt with anything other than what the experimenter had described to you (circle one)?

Yes No

If yes, what?

Did this affect your behavior in any way (circle one)? Yes No

If yes, how?

Appendix F

Debriefing

Thank you very much for participating in the current study. I would first like to apologize because there was some deception involved in the study you just completed. You were originally told that this study dealt with communication and teamwork via the Internet. In actuality the current study is investigating the effects of performance-based social rejection and personally-based social rejection on subsequent performance ability. Each participant was randomly assigned to one of three conditions. In condition one, participants wrote an essay about standardized tests and received negative feedback from an ostensible partner, and in condition 2, participants wrote an essay about themselves and also received negative feedback from a supposed partner. Those assigned to conditions one and two, however, were not actually interacting with another person, and participants in those conditions (depending on the group assigned to) received the same negative feedback. Participants in condition three, the control condition, wrote an essay and simply proceeded to the final task without feedback. The study is examining whether individuals in these three conditions will differ in the number of uses they are able to generate for the common household item shown in the second task.

In addition to this participants completed a Contingencies of Self-Worth Scale. Researchers believe that those that have a high academic contingency of self-worth (those that gain most of their self-esteem from performing well academically) are more affected by performance-based rejection feedback than personal rejection feedback, whereas those who have a high acceptance contingency of self-worth (those that gain most of their self-esteem from being liked and accepted by others) are more affected by the personal rejection than by performance-based rejection. We are investigating these hypotheses further.

Prior to completing the uses task participants were told that they could win a twenty dollar gift card to the campus book store. Because of the use of deception and the fact that participants were not actually working with a partner, the gift card will be given based on a random drawing once the study is completed. This gives each participant an equal chance of receiving the gift card.

Once again we would like to apologize for deceiving you and giving you negative feedback on the essay you wrote. Remember that everyone who wrote an essay received negative feedback, and were not actually interacting with another individual. We would also like to stress that participants were randomly assigned to these conditions at that your assignment had nothing to do with you personally. If you have any questions or concerns please feel free to ask now or contact the principal investigator at any point in the future. In addition, if you would like further assistance after you have left the lab, please feel free to contact the ETSU Counseling Center. They can be reached via telephone at 423-439-4841, or through the ETSU Counseling Center website (<http://www.etsu.edu/students/counsel/counsel.htm>).

Also at this time, because of the use of deception in the study, you can choose to have your data removed from the study. Please indicate this below.

I wish to have my data removed from the study

I do not wish to have my data removed from the study

Appendix G

Performance Essay 1

Standardized test should not be used in the college admission process. Standardized test are widely known to mostly test how well a person can take a multiple choice exam. In order to get a high score on these tests most high school students must take a class teaching them how to take the test, which shows that just having knowledge of the subjects tested is not enough. These classes even tell you that it is not necessary to have that much knowledge of the material and that it is more important to understand how the test is put together and how to eliminate answers. These tests claim to give colleges a way to determine in a standardized, fair way how well a student is prepared for college and they are failing at this task. Many students who do poorly on these exams are well prepared for college end up doing well in classes, while there are others that score very high and do not end up doing well. Colleges need a more accurate way to predict a student's ability to perform in college and until they find one they should base their decisions on a student's high school grades, essays, activities and other aspects of their applications. For these reasons standardized tests should not be used in the college admission process.

Appendix H

Performance Essay 2

Standardized tests are a great tool for colleges to use when choosing students. Because of the large number of students that apply to college in this day and age it is an incredibly difficult task to narrow the population down to the number of students that can make it in college. Standardized tests are an objective tool that can weed out students quickly and effectively. There are a number of different grading scales in high schools around the country and because of this GPA's are often difficult to directly compare. A student that comes from a school with a ten point grading scale will have a much better GPA than a student that comes from a school with a seven point grading scale. If both of these students take a standardized test then it is easy to directly compare their results. Also it is difficult to take recommendations with very much weight. A student will not likely ask someone to write a recommendation unless they believe it is going to be a good one, so colleges have to take recommendations with that strong bias in mind. Once again standardized testing eliminates that bias, which is why they are a great tool in admissions.

Appendix I

Personal Essay

I think what defines me best as a person are my relationships with other people. I am a daughter, a sister, a friend, a sorority sister, a girlfriend, a student and a roommate. I am a very outgoing person and I love to spend time with the different people in my life. Most of my friends would describe me as fun, silly and sometimes smart. Most of the activities I enjoy the most are those that involve other people such as dancing, talking, going to parties, and going out to eat. I think it says something about me that I am friends with a lot of different kinds of people, which allows me to show and enjoy different sides of myself. One example of this is that I am a psychology major with minors in math and dance. I picked psychology because I enjoy learning about people and about myself. I like most main stream music, anything with a beat that you can dance to. I am very close with my family who I go home to see once every two or three months and of course for all holidays. There are a lot of different things that could I could have said but overall I think that my relationships define me best.

VITA

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Manuscript submitted for publication.
Nelson, B. C., Winter, A., Rockney, A., &
Blackhart, G. C. (2009, February). *Self-
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