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Mood and Experience: Effects of Ostracism on Diathesis Activation

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MOOD AND EXPERIENCE:
EFFECTS OF OSTRACISM ON DIATHESIS ACTIVATION

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Honors College Graduate Distinction at Western Kentucky University

By

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ABSTRACT

The stress-diathesis model is a well-known but little-tested theory which states that people can possess diatheses, or vulnerabilities, to certain mental disorders such as depression or anxiety. These diatheses are activated when a person is under stress. This study examined how ostracism as a temporary stressor can trigger existing diatheses and cause increases in depression symptoms among at-risk people. Theory suggests that ostracism is likely to trigger symptoms of depression in at-risk people. This study is an extension of a study conducted by Luxton, Ingram, and Wenzlaff (2006) in which people with naturally varying levels of diathesis factors were exposed to a psychological threat, after which diathesis activation and depressive symptoms were assessed. Like Luxton et al., 2006, I exposed participants to a stressor (ostracism) and measured depression symptoms and diathesis activation with different measures. It was expected that for people who possessed diatheses that the ostracism threat would activate symptoms of depression. My sample consisted of 177 WKU students, 112 female and 65 male. Effects were found on state anxiety and positive and negative affect scales.

Keywords: stress, diathesis, depression, ostracism, stress-diathesis model, emotional affect

Dedicated to Sadie

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I have many people to thank for their help in making this study a success, but none so much as Dr. Aaron Wichman, my first reader and greatest mentor throughout this entire experience. He has been with me on every single step along the way to completing this project, and there is no way I could have done it without him. I began work on my thesis with very little knowledge about how to design and carry out a psychological study. I am putting the finishing touches on it as a much more experienced, well-rounded person, and I have him to thank for much of that knowledge.

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CHAPTER 1

INTRODUCTION

As a mental illness, depression has a long history of misinterpretation, misconception, and stigmatization. People who suffer from depression are also likely to feel the effects of a lack of understanding about the illness among the general public. Despite being one of the most stigmatized and misunderstood mental illnesses, depression is one of the most prevalent. According to the APA, it is "the most common mental disorder" (American Psychological Association, 2014, Depression, para. 2).

The APA defines depression in part by stating that "people with depression may experience a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide" (2014, Depression, para. 1). Of course, not everyone who suffers from depression will experience each of these symptoms. A definitive summary of depression would perhaps identify negative thoughts as the main symptom, but the disorder includes much more.

Depression has often been found to be preceded by severe stress (Mazure, 1995). People vary in their vulnerability to mental illness after stress exposure. The stress-diathesis model, developed by Meehl in 1962, states that individuals, due to either genetic or environmental causes, may develop vulnerabilities, or diatheses, for certain mental disorders over the course of their lifetimes. As stated by Ingram and Luxton, "a diathesis,

or vulnerability, is typically conceptualized as a predispositional factor, or set of factors, that makes possible a disordered state" (2005, p. 34). Both diatheses and their effects can be conceptualized in many different ways, including biological, interpersonal, and cognitive perspectives (Ingram, Miranda, & Segal, 1998). According to Ingram et al., the cognitive paradigm for examining diatheses is the most important, but delving into all possible ways of understanding them is beneficial as well (1998).

In terms of the stress-diathesis model, the high prevalence of depression indicates that a large percent of the population possesses a diathesis for depression. Inference thus points to the existence of a lot of vulnerable people. The stress-diathesis model suggests that by identifying individuals with diatheses, interventions might be possible to avoid the development of full-blown depression. More research into the development and activation of diatheses would open the door for preventative care for those who are vulnerable to mental illnesses like depression.

People may possess diatheses throughout their lives and yet not suffer from any symptoms of a mental disorder. The key component of the stress-diathesis model comes into play here. Diatheses are not active without stress. Stress can activate diatheses, and thus increase an individual's likelihood of developing the mental disorder to which a particular diathesis predisposes him or her. For example, imagine that an individual possesses a diathesis for depression. When that individual is under stress, that diathesis makes him or her more likely to develop depression than an individual who did not possess a similar diathesis.

However, stress is not the only known precursor of depression. According to Ingram and Luxton, a combination of stress and other factors may be necessary to

activate a diathesis (2005). This implies that the stress-diathesis model is perhaps more complicated than an initial foray into its theory would reveal. A single episode of stress may not be enough of a stimulus to activate a diathesis on its own. The nature of the stress, such as its frequency, may alter the extent to which a diathesis is activated, or even the particular diathesis being activated (i.e., depression vs anxiety). Other theories cite genetic origins and causes of vulnerability as further weakening areas of vulnerability, and an interpersonal and cognitive model as a way of conceptualizing the interaction between stress and diatheses (Ingram et al., 1998).

Although the stress-diathesis approach would seem to suggest that exposure to experimentally induced stress might provide a way to study depression, this kind of research is not common. However, one example that did use this approach was a study by Luxton, Ingram, and Wenzlaff (2006). As stated by the authors, "the purpose of [this] study was to examine whether individuals at risk for depression would be more uncertain of their future event predictions, and if doubts about self-worth, might be associated with this uncertainty" (Luxton et al., 2006, p. 840). In this study people with naturally varying levels of diathesis factors were exposed to a self-esteem and future event expectancy threat, after which diathesis activation and depressive symptoms were assessed. 'Future event expectancy threat' refers to a stimulus which causes individuals to become "[uncertain] about the perceived likelihood of future event predictions" (Luxton et al., 2006). The researchers used the self-administered Self-Esteem Scale (Rosenburg, 1965) to determine participants' ratings of their own self-esteem and asked participants how sure they were of their answers, which served as a future event expectancy threat. Naturally occurring variation in participants' situationally salient certainty/uncertainty

responses constituted the threat in this study. Participants then completed the White Bear Suppression Inventory (Wegner & Zanakos, 1994) and the Future Event Likelihood Measure (Andersen, 1990) to assess the degree to which they were repressing thoughts and the either positive or negative tone of participants' future event expectancies, respectively. Finally, participants completed the Beck Depression Inventory short form (Beck, & Beck 1972) and the Inventory to Diagnosis Depression – Lifetime version (Zimmerman & Coryell, 1987). Researchers used this information to determine the effects of depression and self-worth on participants' certainty of their future event expectancies (Luxton et al., 2006).

We extended the Luxton et al. (2006) study by exposing people to a different type of stressor, and by looking at the extent to which their initial reports of depression symptoms might change after exposure to this stressor. We hypothesized that the higher the depression levels of the participants, the more reactive they would be to stress. We used an ostracism induction as a stressor.

Ostracism occurs when people feel ignored or excluded (Williams, 2007). According to Williams "belonging is a fundamental requirement for security, reproductive success, and mental health" (Baumeister & Leary 1995, Smith et al.. 1999, qtd. from Williams, 2007, p. 425). It follows that ostracism is likely to be a potent social threat. Despite its apparent importance, little research had been done until recently on the subject of ostracism (Williams, 2009). Ostracism is also shown to be an important topic of study due to its prevalence across a variety of social strata. Within human social groups, ostracism is believed to be universal. Aydin, Fischer, and Frey (2010) state that "forms of social exclusion such as ignoring or outright rejection [i.e., ostracism] appear to

be highly pervasive acts of human behavior" (p.742). They go on to say that ostracism occurs across all types of social groups as well, from close-knit groups of 2 or 3 people to intercultural and broad societal relations (2010). It is visible in directly observed social interactions as well as in various representations of human life. Williams provides a few literary examples in his article "Ostracism: A Temporal Need-Threat Model," including The Invisible Man by Ralph Ellison and an excerpt from William James' essay on the social self which states that "a man's Social Self is the recognition which he gets from his mates" (2009, p. 277). The fact that ostracism can be referred to as 'social death' without running the risk of sounding overly poetic is rather telling as well (Williams, 2007).

The experimental condition in this study involved producing an ostracism effect in participants. Williams, Cheung, and Choi developed a mental visualization game analogous to a real-life game of catch in order to harmlessly inspire temporary sensations of ostracism in players for experimental reasons (2000). The game was aptly termed Cyberball. Cyberball is a virtual game that simulates online interaction with other players in the form of a traditional game of catch. In this study, the game featured 3 virtual players including the participant, but it can be played with up to 4. Cyberball "can be used for research on ostracism, social exclusion, or rejection" (Williams, 2012, History of Cyberball and Previous Versions section, para. 1), and was used as an ostracism trigger in this study. In the game, participants are led to believe that they are connecting with other players through the internet for a virtual game of catch. Depending on the condition in which they were randomly placed, participants were either included in the game or excluded by the other "players." The latter condition produces an ostracism effect (Williams, 2012).

I hypothesized that the higher the participants' scores on the Beck Depression Inventory, the more reactive they would be to the ostracism stressor as measured by a battery of affect scales (see Materials and Procedure). My hypothesis is suggested by the stress-diathesis model, as increased emotional reactivity can indicate the presence of a diathesis (Luxton, Ingram, & Wenzlaff, 2006). The goal of introducing an ostracism stressor was to provide opportunity to detect diatheses that otherwise would not be apparent.

CHAPTER 2

METHOD

Participants

A total of 177 participants completed this study, with 112 participants being female, and 65 being male. Participants received partial course credit for their participation. Participants were required to speak English as a first language. All participants were at least 18 years old, with the average age being 19.5 (SD = 3.1).

Materials and Procedure

Participants came into the lab in groups of up to six and initially completed the Beck Depression Inventory (Beck, 1967). The Beck Depression Inventory, or BDI, is an often-used 21-item measure of depression levels. Each item consists of 4 statements describing potential ways the participants has felt in the last 2 weeks. Some sample items include: "I am not sad . . . I am so sad and unhappy that I can't stand it," and "I don't feel I am any worse than anybody else . . . I blame myself for everything bad that happens" (Beck, 1960). The BDI is widely recognized as a reliable, valid measure of depression (Bouman et al., 1985).

Immediately after completing this measure, participants were asked to engage in a mental visualization game called Cyberball (Williams, Cheung, & Choi, 2000). Cyberball is a virtual game that simulates online interaction with other players. In this study, the game had 3 virtual players including the participant, but it can be played with

up to 4. Cyberball "can be used for research on ostracism, social exclusion, or rejection" (Williams, 2012, History of Cyberball and Previous Versions section, para. 1), and was used as an ostracism trigger in this study. In the game, participants are led to believe that they are connecting with other players through the internet for a virtual game of catch. The game begins with instructions to pass the ball to another player after the participant receives it. Depending on the condition in which they were randomly placed, participants were either included in the game or excluded by the other "players." The latter condition produces an ostracism effect. Participants then completed the following affect scales: the Positive and Negative Affect Scale-Extended Version (PANAS-X) (Watson & Clark, 1994) and the State Anxiety Inventory Scale (Spielberger, Gorsuch & Lushene, 1970). The State Anxiety Inventory Scale is part of a broader test, the State-Trait Anxiety Inventory (STAI), that covers both state and trait anxiety. The STAI includes 20 items measuring state anxiety, and another 20 measuring trait anxiety. At this point in testing, participants were only answering state anxiety items. As stated in the APA's Public Interest Directorate, "state anxiety items include: "I am tense; I am worried" and "I feel calm; I feel secure" (Spielberger, Gorsuch & Lushene, 1970). The items, like the BDI, are "rated on a 4-point scale" (American Psychological Association, 2014, The State-Trait Anxiety Inventory, para. 2). The state anxiety inventory has been found to have "[internal] consistency coefficients . . . [ranging] from .86 to .95" (The State-Trait Anxiety Inventory, para. 3) and .65 to .75 test-retest reliability coefficients over a two month interval (American Psychological Association, 2014, The State-Trait Anxiety Inventory). The STAI was also found to have construct and concurrent validity (American Psychological Association, 2014, The State-Trait Anxiety Inventory). At this

point participants also indicated how ostracized they felt—as a check to determine how they perceived the condition in which they were placed, but also as a measure that might predict responses above and beyond the ostracism manipulation.

CHAPTER 3

RESULTS

BDI scores (M = 7.7; SD = 7.4), state anxiety scores (M = 30.4; SD 10.0), positive event expectancy scores (M = 8.5; SD 1.7), negative affect (M = 1.5, SD = .61) and positive affect (M = 2.5, SD = 0.85) all were standardized before analysis.

All analyses were conducted using regression. Post-ostracism measures of affect and depression symptoms were regressed on standardized scores on the Beck Depression Inventory, the dummy-coded ostracism manipulation, the standardized degree to which participants felt that they were ostracized, and the interaction between these scores. BDI marginally interacted with perceived ostracism level to predict State Anxiety Scale scores (B= .14, SE = .08, t(168) = 1.74, p = .084; see Figure 1.1). These findings support my hypothesis, but are not significant. Ostracism also interacted with BDI and perceived ostracism level to predict positive event expectancies (B= -.33, SE = .10, t(168) = -3.4, p = .001). These findings do support my hypothesis, with the exception of the high perceived ostracism participants who had low BDI – their outlook on the future was very positive. Graphs of these effects can be found in Figures 1.2 and 1.3.

Ostracism interacted with BDI and perceived ostracism level to predict negative affect (B= -.30, SE= .09, t(168) = -3.3, p = .001; see Figures 1.4 and 1.5). These findings support my hypothesis. Ostracism and BDI marginally interacted to predict positive

affect (B= -.34, SE= .19, t(168) = -1.82, p = .071; see Figure 1.6). These findings are directionally consistent with my hypothesis.

For the full output of these analyses, please see the appendix.

Relationship between BDI score and State Anxiety as a function of Perceived Ostracism Level

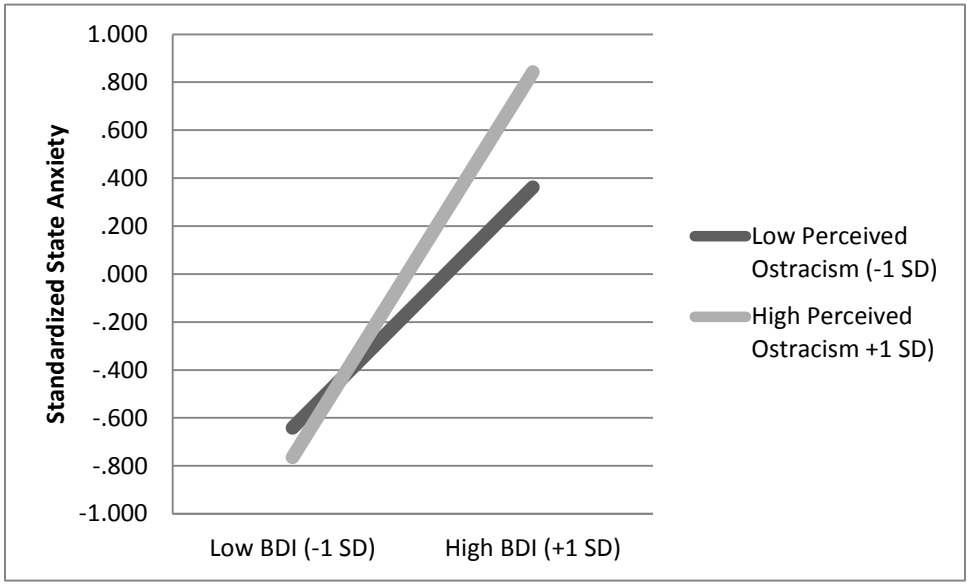

Figure 1.1: Relationship between BDI score and State Anxiety as a function of Perceived Ostracism Level.

Relationship between BDI score and Positive Expectancies as a function of Ostracism condition for those relatively low (-1 SD) in perceived ostracism.

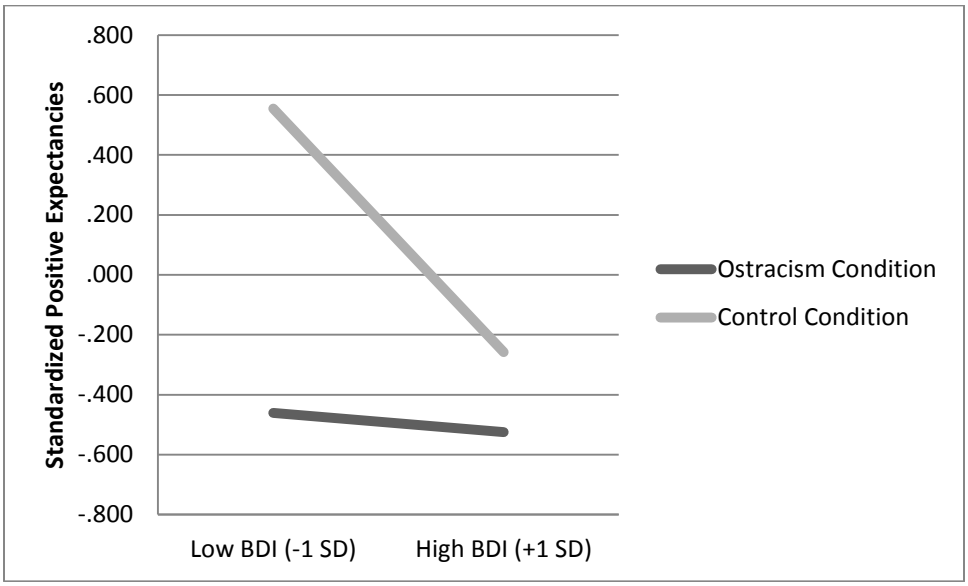

Figure 1.2. Relationship between BDI score and Positive Expectancies as a function of Ostracism condition for those relatively low (-1 SD) in perceived ostracism.

Relationship between BDI score and Positive Expectancies as a function of Ostracism condition for those relatively high (+1 SD) in perceived ostracism

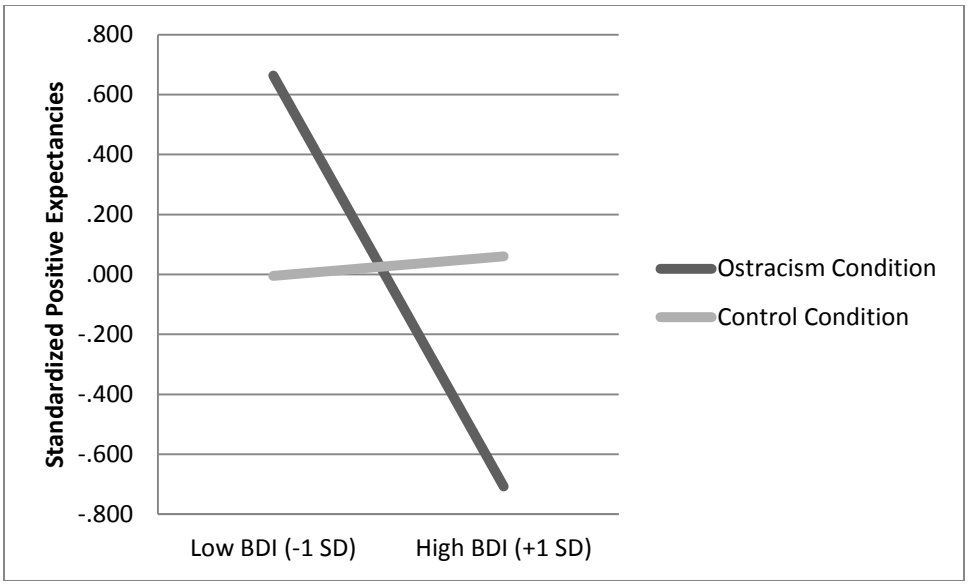

Figure 1.3. Relationship between BDI score and Positive Expectancies as a function of Ostracism condition for those relatively high (+1 SD) in perceived ostracism

Relationship between BDI score and Negative Affect as a function of Ostracism Condition for those relatively low (-1 SD) in perceived ostracism

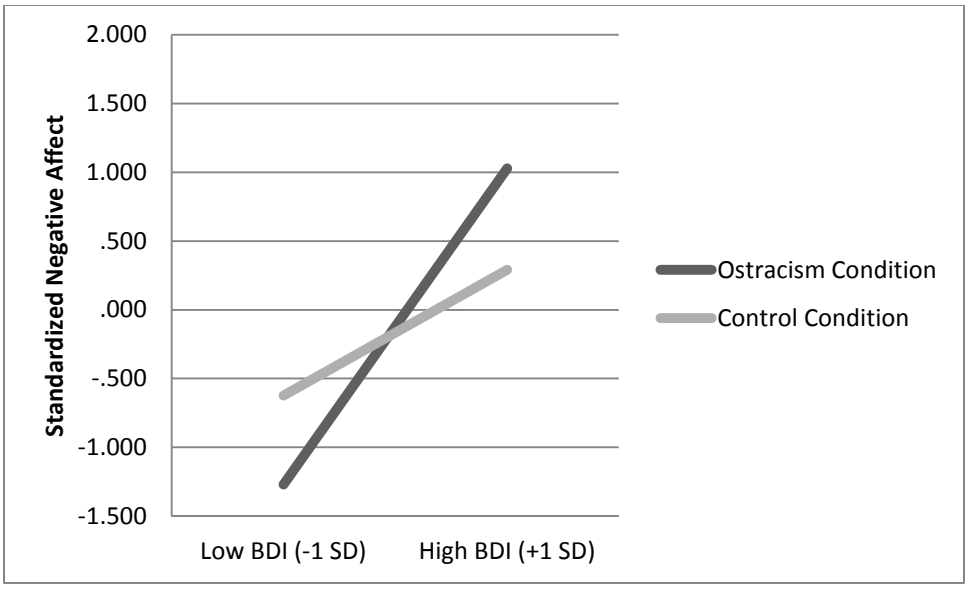

Figure 1.4. Relationship between BDI score and Negative Affect as a function of Ostracism Condition for those relatively low (-1 SD) in perceived ostracism.

Relationship between BDI score and Negative Affect as a function of Ostracism Condition for those relatively high (+1 SD) in perceived ostracism

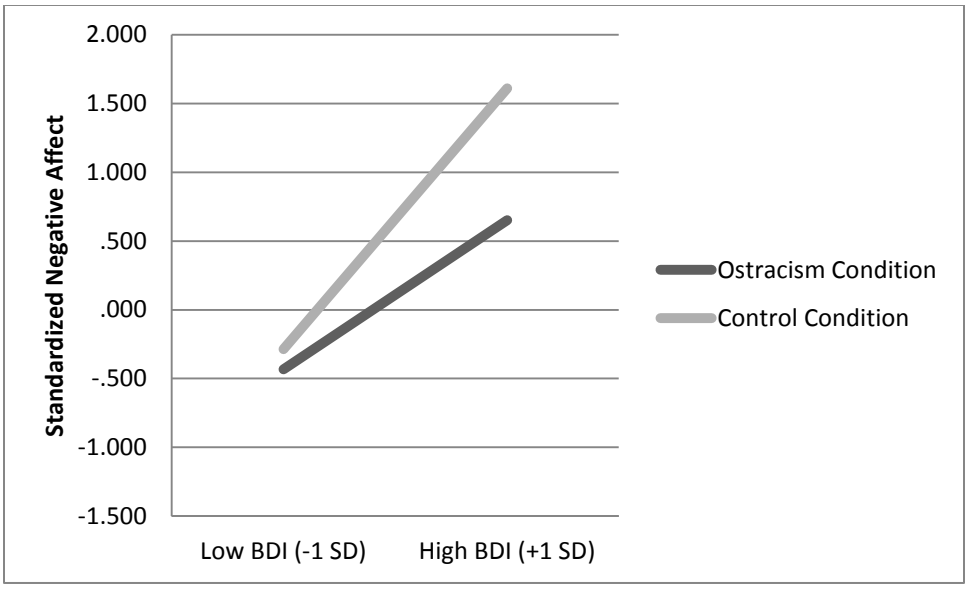

Figure 1.5. Relationship between BDI score and Negative Affect as a function of Ostracism Condition for those relatively high (+1 SD) in perceived ostracism.

Relationship between BDI score and Positive Affect as a Function of Ostracism Condition

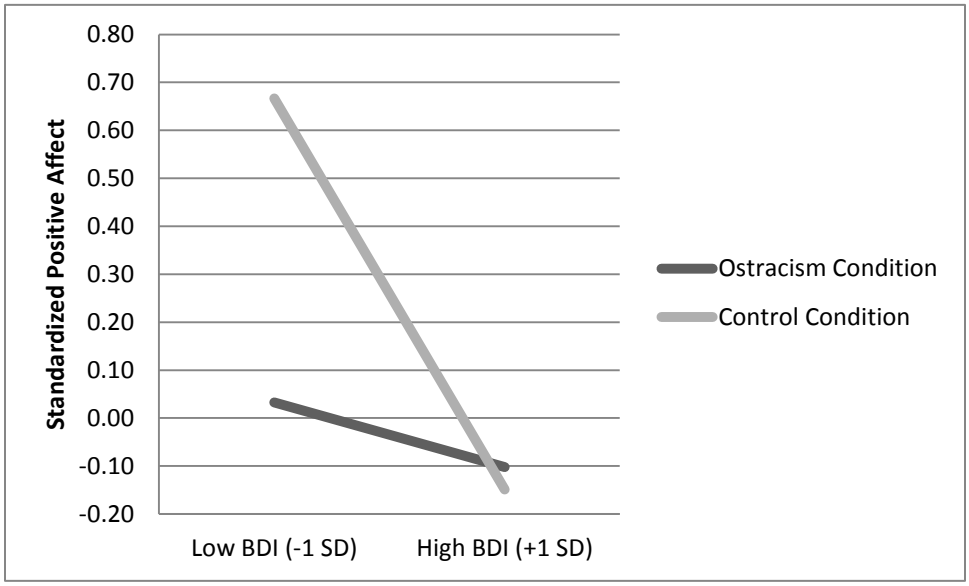

Figure 1.6. Relationship between BDI score and Positive Affect as a Function of Ostracism Condition.

CHAPTER 4

CONCLUSIONS

Research has shown that exposure to an environmental stressor such as ostracism can result in increased emotional reactivity in people who possess a pre-existing diathesis, or vulnerability, for depression or other mental disorders. I found six effects that fit with the current research. Higher levels of state anxiety produced a stronger relationship between depression and perceived ostracism (see Figure 1.1). A three-way interaction between depression, ostracism, and positive expectancies indicated that, for those who felt they were generally socially included, depression level had no effect on participants' degree of positive expectancies when they were ostracized. For those who felt they were generally socially excluded, the opposite occurred – depression had no effect when participants were not ostracized. I surmised that people who generally feel excluded may produce a flat affect (in terms of positive expectancies) as a coping mechanism to deal with their resulting negative thoughts. This coping mechanism might be overcome by the instance of ostracism within the study, causing the effect in the ostracism condition (see Figures 1.2 and 1.3). Another three-way interaction occurred between depression, ostracism, and negative affect. In this case, for those who generally felt that they were socially included, ostracism strengthened the positive relationship between depression and negative affect. For those who generally felt socially excluded, again, the opposite was true. Ostracism was shown to reduce the connection between

high levels of depression and high negative affect. I postulated that these effects could have been caused by an emotional numbness induced by the ostracism stressor that would theoretically dull the influences of both depression and negative affect (Baumeister, DeWall, & Vohs, 2009) (see Figures 1.4 and 1.5). Finally, I found that ostracism decreased the effects of depression on positive affect (see Figure 1.6).

We hypothesized that ostracism would produce these effects in individuals who scored high on the Beck Depression Inventory (Beck, 1967). The results of the study support my hypothesis. I found that the higher an individual's existing depression level (as measured by the BDI), the more anxious they were likely to become under stress. I also found that the higher an individual's depression level, the more negative affect they experienced and the less positive affect after experiencing stress. However, measures of state anxiety, positive, and negative affect were further moderated by perceived ostracism level. These findings indicate that the degree to which an individual perceives that they are ostracized in daily life affects several aspects of emotional affect (state anxiety, positive, and negative affect). The exact meaning of these effects' moderation by level of perceived ostracism should be further investigated. In sum, the higher participants scored on the Beck Depression Inventory, the more affected they tended to be by the ostracism effect created by the Cyberball game, as measured on a variety of scales. These findings also support the stress-diathesis model, clearly displaying a link between the effects of a temporary environmental stressor and emotional reactivity among those with pre-existing depression symptoms.

This study could have better practical implications if the data were more representative across sexes. As it is, the sample consists of almost twice as many female

as male participants (112 female, 65 male). As such, I cannot account for any potential confounding variables that are essential to differences between sexes. The mental visualization game I used, Cyberball, also has comparatively poor graphics when considering other virtual games to which participants are likely to have been exposed. It is possible that the poor graphics could have affected the degree to which participants felt invested in gameplay, though research supports the idea that if any such effects existed they may very well be negligible. An additional possible limitation is that compared to the effects of more significant real-life stressors, such as being ostracized by friends one depends on, or ostracized by family, the ostracism induction used in this study may not have been particularly impactful. Future research might consider other types of stressors, such as relationship threats (e.g. McGregor, Zanna, Holmes, & Spencer, 2001).

The stress-diathesis model has significant as-yet untapped potential for the field of psychology. Very little has been done up to this point to look into the model's possible predictive qualities. Could it be possible to observe an individual's reaction to a stressor and use that information to predict future depression levels based on whether or not he or she seems to possess a diathesis? At this point, it seems feasible. Other research on vulnerability-stress models and this study's findings support the idea that current reactions to stress could be used in a predictive fashion. For instance, using the methods employed in this study, researchers could theoretically use individuals' current scores on various affect scales after these people had experienced a mild stressor to predict future depression risk. This kind of predictive ability could bring about positive change in many people's lives. Applicants for high stress employment positions could be tested for diatheses as part of the application process in order to circumvent potential

development of mental disorders before they become problematic. People who are already employed in high stress environments could be tested to determine how well they are able to cope with the demands of their positions. The same could be done for incoming freshmen at the college or even high school level. The goal of testing like this would not be so much to benefit the potential employer or future school as the employee or student. Knowledge about how well people are likely to handle stressful situations and whether or not they are likely to develop a mental disorder as a result of how they react to that stress could be used preventatively. However, more research must be done on this topic to further investigate its possibilities.

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APPENDIX

Statistical Analyses for Tests of State Anxiety

Tests of Between-Subjects Effects

Dependent Variable: ZSAI_sum

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	95.345[a]	7	13.621	28.757	.000	.545
Intercept	.064	1	.064	.136	.713	.001
Ostracism0	.321	1	.321	.678	.411	.004
ZmanipCheckMean	.290	1	.290	.612	.435	.004
Ostracism0 * ZmanipCheckMean	.118	1	.118	.249	.619	.001
ZBDItotal	26.566	1	26.566	56.089	.000	.250
Ostracism0 * ZBDItotal	.002	1	.002	.004	.950	.000
ZmanipCheckMean * ZBDItotal	1.434	1	1.434	3.027	.084	.018
Ostracism0 * ZmanipCheckMean * ZBDItotal	.437	1	.437	.923	.338	.005
Error	79.572	168	.474			
Total	174.924	176				
Corrected Total	174.917	175				

a. R Squared = .545 (Adjusted R Squared = .526)

Table 1.1. Tests of Between-Subjects Effects on State Anxiety Scale

Parameter Estimates for Statistical Analyses for Tests of State Anxiety

Parameter Estimates

Dependent Variable: ZSAI_sum

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-.038	.103	-.369	.713	-.241	.165	.001
Ostracism0	.127	.154	.823	.411	-.177	.431	.004
ZmanipCheckMean	.078	.099	.782	.435	-.118	.273	.004
Ostracism0 * ZmanipCheckMean	.078	.157	.499	.619	-.232	.388	.001
ZBDItotal	.665	.089	7.489	.000	.490	.840	.250
Ostracism0 * ZBDItotal	.009	.137	.063	.950	-.261	.278	.000
ZmanipCheckMean * ZBDItotal	.138	.080	1.740	.084	-.019	.296	.018
Ostracism0 * ZmanipCheckMean * ZBDItotal	-.121	.126	-.961	.338	-.370	.128	.005

Table 1.2. Parameter Estimates for State Anxiety Scale.

Statistical Analyses for Tests of Negative Affect

Tests of Between-Subjects Effects

Dependent Variable: ZNegAffect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	71.935[a]	7	10.276	16.623	.000	.409
Intercept	.001	1	.001	.002	.962	.000
Ostracism0	.207	1	.207	.335	.563	.002
ZmanipCheckMean	.643	1	.643	1.041	.309	.006
Ostracism0 * ZmanipCheckMean	.415	1	.415	.671	.414	.004
ZBDItotal	42.912	1	42.912	69.416	.000	.292
Ostracism0 * ZBDItotal	2.190	1	2.190	3.543	.062	.021
ZmanipCheckMean * ZBDItotal	6.878	1	6.878	11.127	.001	.062
Ostracism0 * ZmanipCheckMean * ZBDItotal	4.684	1	4.684	7.576	.007	.043
Error	103.856	168	.618			
Total	175.792	176				
Corrected Total	175.791	175				

a. R Squared = .409 (Adjusted R Squared = .385)

Table 1.3. Tests of Between-Subjects Effects on Negative Affect Scale.

Parameter Estimates for Statistical Analyses for Tests of Negative Affect

Parameter Estimates

Dependent Variable: ZNegAffect

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-.006	.118	-.048	.962	-.238	.227	.000
Ostracism0	.102	.176	.579	.563	-.245	.449	.002
ZmanipCheckMean	.116	.113	1.020	.309	-.108	.339	.006
Ostracism0 * ZmanipCheckMean	.147	.179	.819	.414	-.207	.501	.004
ZBDItotal	.845	.101	8.332	.000	.645	1.045	.292
Ostracism0 * ZBDItotal	-.294	.156	-1.882	.062	-.602	.014	.021
ZmanipCheckMean * ZBDItotal	-.303	.091	-3.336	.001	-.483	-.124	.062
Ostracism0 * ZmanipCheckMean * ZBDItotal	.397	.144	2.753	.007	.112	.681	.043

Table 1.4. Parameter Estimates for Negative Affect Scale.

Statistical Analyses for Tests of Positive Affect

Tests of Between-Subjects Effects

Dependent Variable: ZposAffect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	23.907[a]	7	3.415	3.853	.001	.138
Intercept	.053	1	.053	.060	.807	.000
Ostracism0	1.718	1	1.718	1.938	.166	.011
ZmanipCheckMean	1.865	1	1.865	2.104	.149	.012
Ostracism0 * ZmanipCheckMean	2.493	1	2.493	2.813	.095	.016
ZBDItotal	.273	1	.273	.308	.579	.002
Ostracism0 * ZBDItotal	2.932	1	2.932	3.308	.071	.019
ZmanipCheckMean * ZBDItotal	.749	1	.749	.845	.359	.005
Ostracism0 * ZmanipCheckMean * ZBDItotal	.432	1	.432	.488	.486	.003
Error	148.922	168	.886			
Total	172.847	176				
Corrected Total	172.829	175				

a. R Squared = .138 (Adjusted R Squared = .102)

Table 1.5. Tests of Between-Subjects Effects on Positive Affect Scale.

Parameter Estimates for Statistical Analyses for Tests of Positive Affect

Parameter Estimates

Dependent Variable: ZposAffect

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-.034	.141	-.245	.807	-.313	.244	.000
Ostracism0	.293	.211	1.392	.166	-.123	.709	.011
ZmanipCheckMean	-.197	.136	-1.450	.149	-.465	.071	.012
Ostracism0 * ZmanipCheckMean	.360	.215	1.677	.095	-.064	.785	.016
ZBDItotal	-.067	.121	-.555	.579	-.307	.172	.002
Ostracism0 * ZBDItotal	-.340	.187	-1.819	.071	-.709	.029	.019
ZmanipCheckMean * ZBDItotal	-.100	.109	-.919	.359	-.315	.115	.005
Ostracism0 * ZmanipCheckMean * ZBDItotal	.121	.173	.698	.486	-.220	.461	.003

Table 1.6. Parameter Estimates for Positive Affect Scale.