

Title : Experiential avoidance as a moderator for coping with a brief episode of ostracism: A pilot study

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Abstract

The present paper examined whether experiential avoidance (EA) was a potential moderator of recovery from the short-term effects of ostracism. Forty University students completed a measure of EA and were either included or excluded in an online-ball tossing game (Cyberball). Participants then reported need-satisfaction immediately following the game and after a filler task. The results show that being ostracized affected both groups at the immediate (reflexive) stage of the Temporal Needs Threat Model, and that those low in EA recovered their psychological needs of belonging, self-esteem, and meaningful existence (but not control) faster (i.e., after a delay) than those high in EA. Overall, this study provides tentative preliminary experimental evidence that demonstrates that EA may moderate the short-term effects of ostracism. Implications of the present study suggest that decreasing levels of EA may help individuals cope with events of ostracism, but further research is needed to replicate this effect.

Keywords: ostracism, social rejection, coping, moderation, experiential avoidance

Introduction

Ostracism is a social exclusion experience primarily characterized by being ignored by others (Williams, 2009; Riva & Eck, 2016). Ostracism can occur within any social context such as the family, the workplace, or within friendship groups. Such events are ubiquitous and can be experienced as frequently as three times a day (Nezlek, Wesselmann, Wheeler, & Williams, 2012). Indeed, people do not even have to be in proximity of others to experience the negative effects of ostracism, as these events can occur virtually by text message (Smith & Williams, 2004) and over the internet (Donate et al., 2017). Such events are often so distressing that they can linger in one's memory for up to an hour (Buelow, Okdie, Brunell, & Trost, 2015), or in some cases even for several years (Williams, 2009).

According to the Temporal Needs Threat Model (TNTM; Williams, 2009), individuals experience immediate psychological distress (i.e., reflexive psychological pain) when they perceive ostracism as it threatens their fundamental psychological needs (Williams, Cheung, & Choi, 2000; Zadro, Williams, & Richardson, 2004). Indeed, experimental research has consistently demonstrated that ostracism leads to reduced levels of these self-reported core needs of self-esteem, meaningful existence, belonging, and control (Williams et al., 2000; Zadro et al., 2004). Moreover, brief encounters with ostracism have also been shown to activate pain-detection regions within the brain (Eisenberger, Lieberman, & Williams, 2003), although such evidence has been challenged (e.g., Iannetti, Salomons, Moayedi, Mouraux, & Davis, 2013).

Williams (2009) purports that during the immediate (i.e., reflexive) stage of ostracism there is no moderation by individual or situational differences, as rapid responses to such events are hardwired into the human brain as an evolutionary adaptation to avoid

permanent rejection. Following the immediate reaction to ostracism, Williams (2009) argues that recovery (in the short term) will occur depending upon how a person appraises the event and exerts effort to recover thwarted needs (i.e., the reflective stage). For example, several studies have demonstrated that recovery time following the initial distress of ostracism can be prolonged by a number of factors including: high levels of social anxiety (Zadro, Boland, & Richardson, 2006), interdependent self-construal (Ren, Wesselmann, & Williams, 2013), a tendency to ruminate (Wesselmann, Ren, Swim, & Williams, 2013), and an insecure attachment style (Hermann, Skulborstad, & Wirth, 2014; Yaakobi & Williams, 2016). In most cases, people typically recover their thwarted needs rather quickly from such events (Baumeister, Heatherton, & Tice, 1994), for example, by making oneself more socially attractive to regain status with a group (Carter-Sowell, Chen, & Williams, 2008).

Experiential Avoidance

One potential moderator of the short-term effects of ostracism could be that of experiential avoidance (EA). EA forms part of the broader construct of *psychological inflexibility* within the Acceptance and Commitment Therapy model of behavior change (ACT; Hayes, Stroschal, & Wilson, 2012). EA is defined as behavior that attempts to “alter the frequency or form of unwanted private events, including thoughts, memories and bodily sensations, even when doing so causes personal harm” (Hayes, Pistorello, & Levin, 2012, p. 981). The tendency to use EA to avoid staying in contact with painful psychological events (e.g., attempting to suppress memories of recent ostracism), is purported to exacerbate psychological distress (Hayes et al., 2012). Indeed, high levels of EA are significantly associated with acute levels of depression, anxiety, and stress (e.g., Hayes et al., 2004; Kirk, Meyer, Whisman, Deacon, & Arch, 2019; Mellick et al., 2019). Such findings are not surprising, as research has demonstrated that attempts to suppress unwanted thoughts can lead to contradictory effects, such that the frequency and intensity of the thought

paradoxically increase (e.g., Wenzlaff & Wegner, 2000). Several studies have demonstrated the critical importance of EA in coping with psychological distress, both from moderator (e.g., Bardeen, 2015; Bardeen, Fergus, & Orcutt, 2014; Kashdan & Kane, 2011; Minami, Bloom, Reed, Hayes, & Brown, 2015) and mediator (e.g., Eustis, Hayes-Skelton, Roemer, & Orsillo, 2016; Fledderus, Bohlmeijer, & Pieterse, 2010; Szkody & McKinney, 2019) perspectives.

Some researchers have examined whether psychological inflexibility (Waldeck, Tyndall, Riva, & Chmiel, 2017), and in particular EA, is a potential moderator of the distress associated with ostracism in the longer term (Tyndall, Waldeck, Riva, Wesselmann, & Pancani, 2018). Adopting a cross-sectional correlation design, Tyndall et al. (2018) reported that EA was a significant moderator of the relationship between perceived ostracism and psychological distress. More specifically, low levels of EA were associated with less distress following ostracism, whereas high levels of EA were associated with significant distress. Thus, EA appears to be an important factor to consider in explaining how people cope with ostracism, as low levels of EA (which can be facilitated through ACT-based processes; Hayes et al., 2012) may lead to recovery from associated distress. However, to our knowledge, no research has yet been conducted to examine whether EA is also a moderator of the *short-term* distress associated with ostracism. This is somewhat surprising considering that brief interventions to increase acceptance of unwanted thoughts (i.e., reduce EA) have been shown to help individuals recover their depleted psychological needs following short-term exclusion (Molet, Macquet, Lefebvre, & Williams, 2013).

Current study

In this study, we sought to test EA as a moderator of the short-term effects of ostracism on four primary psychological needs. We used Cyberball (Williams & Jarvis,

2006), the most utilized paradigm in the ostracism literature (see Williams, 2018), in order to induce a minimal level of temporary social stress. Researchers have demonstrated that Cyberball is a reliable and valid experimental method to induce feelings of ostracism (e.g., Zhang et al., 2017). In accordance with the TNTM (Williams, 2009), we hypothesized that EA moderates the effect of being ostracized on delayed, but not immediate responses. Indeed, as ostracism causes a reflex of reduced need satisfaction, it would not be expected that this initial impact depends on one's levels of EA.

Method

Participants and design

Forty students enrolled on a Psychology course at X University (32 females; $M_{\text{age}}=29.50$, $SD=9.51$) participated in this experiment. The sample identified as Caucasian (52.5%), Asian (27.5%), or Black (20%). Participants were randomly assigned to an inclusion ($n = 20$) or exclusion ($n = 20$) condition. Before data collection began, the study gained approval by Institutional Research Ethics committee.

Measures

The Brief Experiential Avoidance Scale (BEAQ; Gámez et al. 2014). The BEAQ is a 15-item measure of experiential avoidance. Participants responded to items (e.g., "I work hard to keep out upsetting feelings") using a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree), ($\alpha = .92$ in the present study). High scores on the BEAQ reflect higher levels of experiential avoidance.

Need Satisfaction Scale (12-items; Williams, 2009). This scale assesses a participant's feelings of belonging (e.g., "I felt rejected"), self-esteem ("I felt good about myself"),

meaningful existence (“I felt non-existent”) and control (“I felt powerful”; $\alpha_s > .86$).

Participants rated each item based on how they felt *during* the game (i.e., reflexive measures) and then at a later time, how they feel *right now* (i.e., reflective measures; $\alpha_s > .82$) on a 5-point Likert scale (1 = not at all; 5 = very much). Higher scores reflect high levels of need satisfaction.

Procedure

Participants arrived at the laboratory and were seated in front of a Dell computer and were asked to read the participant information sheet and sign the consent form. They were told that the study examined the effect of mental visualization on subsequent behavior. Participants then answered demographic questions (e.g., age, gender) and completed the BEAQ (Gámez et al. 2014).

Participants subsequently began an ostensible mental visualization exercise called Cyberball (Williams & Jarvis, 2006). They were randomly assigned to be either ostracized, receiving a virtual ball once from each of two computer agents at the beginning and then never again for the remainder of the game (i.e., Exclusion Condition), or included, receiving the ball in equal proportion (i.e., 33% of the time) with both other players throughout the entire game (i.e., Inclusion Condition). Participants were instructed to use the Cyberball game to practice visualizing the attributes of the other players. The game involved 30 throws with a duration of approximately 2 minutes.

Once the game was completed, participants completed the Need Satisfaction Scale (i.e., *reflexive* needs). Furthermore, as manipulation checks, participants were asked how often (0-100%) they received the ball and how accepted (1 = not at all to 9 = extremely) they felt during the game. Participants then completed a filler task (see Simons, Franconeri & Reimer, 2000) with the goal of noting any gradual changes observed (e.g., color) in a video

clip. This task lasted about four minutes. Such filler tasks are also necessary to provide participants some psychological separation between the measures (need satisfaction scales) to minimise the influence of social desirability or shared method effects (Podsakoff, MacKenzie, & Podsakoff, 2012). Indeed, such tasks are common when conducting Cyberball studies examining moderation effects of coping to avoid excessive rumination (e.g., Ren et al., 2013). Participants then completed the Need Satisfaction Scale, but rated each item based on how they felt *right now* (i.e., *reflective* needs). At the end of the experiment, participants were debriefed about the nature of the study.

Results

Manipulation Checks

Participants in the Exclusion Condition reported feeling less accepted, $t(38) = 12.79$, $p < .001$, and received the ball less frequently than the Inclusion Condition participants, $t(38) = 13.52$, $p < .001$. This suggested that the inclusionary status manipulation was effective in this study.

Analytic Strategy

Unless otherwise stated, the results (of all outcome variables) were examined using regression analyses where predictors were experiential avoidance (centered), inclusion status (Inclusion = 0, Exclusion = 1), and the interaction between the two. Regression assumptions were met for the analyses. See Table 1 for Need Satisfaction scores for both conditions and Table 2 for the regression statistics.

Reflexive outcomes

We conducted a series of regressions on each of the reflexive need-threat scales. Inclusion status significantly predicted all reflexive needs scores at Time 1. Specifically, ostracized participants had lower need scores following Cyberball than included participants. There were no other significant relationships observed.

Reflective outcomes

We then examined the effect of our manipulation and the potential interaction with EA on *recovery of* need satisfaction at Time 2. Given that both need satisfaction scales were highly correlated (r 's > .64), and to avoid potential bias in the models arising from this, we first residualized the outcome variables (e.g., Carroll, Mundy, & Cunningham, 2014)¹ to account for differences in need satisfaction at baseline. Thus, higher scores related to faster recovery (i.e., greater need satisfaction at Time 2). As seen in Table 2, inclusion status was not a significant predictor for need recovery score². However, the interaction between inclusion status and EA was significant in relation to recovery in belonging, self-esteem, and meaningful existence, but not for control. That is, for those who were included, there was no significant difference between the high and low EA participants on need recovery (belonging: $\beta = .25, p = .24$; self-esteem: $\beta = .10, p = .66$; meaningful existence: $\beta = .17, p = .46$). However, for those who were ostracized, there was a significant effect of EA (belonging: $\beta = -.82, p < .001$; self-esteem: $\beta = -.84, p < .001$; meaningful existence: $\beta = -.81, p < .001$).

Specifically, excluded participants reported significantly higher need satisfaction recovery

¹ The residualized outcome variables were obtained by computing simple linear regression models (e.g., Time 1 belonging predicting Time 2 belonging) and saving the residuals as new variables. It is important to note that there are alternative analytic strategies that could be employed in this study (e.g., creating a difference score between Time 1 and Time 2; e.g., Oaten, Williams, Jones, & Zadro, 2008; or holding Time 1 scores as constant; e.g., Zadro et al., 2006). However, due to concerns that the former may not adequately control for the effects of Time 1 need scores while the latter may lead to some artificially inflated parameter estimates, residualizing was preferred. We conducted additional analyses using the alternative strategies above and noticed no discernible differences in the results.

² The finding that inclusion status is not a significant predictor at Time 2 has been previously observed in the ostracism literature (e.g., Zadro et al., 2006). Indeed, when examining for moderation, the interaction between predictor and moderator is considered to be most critical even in absence of other lower level effects (Hayes, 2017).

when low in EA compared to those high in EA³. Therefore, the hypothesis was partially supported.

Discussion

The present research investigated whether EA could be a potential moderator of recovery from need-threat experienced following an experimental manipulation of ostracism using Cyberball. Consistent with previous research (e.g., Ren et al., 2013; Zadro et al., 2006), excluded participants experienced adverse effects (i.e., depleted primary needs) in comparison to those who were included. Moreover, there were no individual differences observed (i.e., moderation) within the reflexive stage (immediately after Cyberball) which is consistent with the TNTM (Williams, 2009). What is new from this study is that our findings provided preliminary evidence that EA is a moderator of *short-term* recovery of need satisfaction (belonging, self-esteem, meaningful existence) from ostracism, but not the need of control. Therefore, individuals low in EA appeared to cope faster following being ostracized than those who were high in EA. Such findings support evidence from cross-sectional correlation studies that EA is generally a moderator of psychological distress (e.g., Bardeen et al., 2014; Fitzpatrick et al., 2019), and of particular relevance to the present study, distress that is associated with perceived ostracism (Tyndall et al., 2018). Moreover, these findings are consistent with other studies demonstrating that individual differences emerge in the reflection stage (i.e., delayed) following ostracism when experimentally inducing an ostracism experience (e.g., Perry et al., 2011; Zadro et al., 2006).

³ Due to the lack of space for this brief empirical report we report additional analyses here. We also collected data using the AAQ-II (Bond et al. 2011) as a measure of psychological inflexibility for this study (see Waldeck et al., 2017). There were no discernible differences in the results using the AAQ-II instead of the BEAQ.

Limitations and Future Directions

The current study has several limitations. First, the sample size obtained is somewhat small (see Hartgerink, Van Beest, Wicherts, & Williams, 2015), although is comparable to other published Cyberball studies in the literature (e.g., Ambrosini, Blomberg, Mandrigin, & Costantini, 2014; Coyne, Gundersen, Nelson, & Stockdale, 2011; Peterson, Gravens, & Harmon-Jones, 2010). However, the present study provides preliminary proof of concept, as such there will need to be further confirmatory studies conducted with larger sample sizes.

Second, despite being the most utilized outcome measure in Cyberball research (Hartgerink et al. 2015), the Need Satisfaction Scales used in this study have been questioned by researchers in regards to validity (e.g., Garczynski & Brown, 2014; Gerber, Chang, & Reimel, 2017). Moreover, as the outcomes were measured via self-report scales and the same scale administered twice (albeit with temporal frame adjusted) there is the risk of biased or inaccurate responding (Podsakoff et al., 2012); although this could conceivably be levelled at most other studies adopting this paradigm. Future researchers may consider adopting a range of alternative outcome measures to examine the aversive short-term effects of ostracism and reduce potential biased responding. For example, the assessment of emotional reactions (e.g., inner tension) and behavioral intentions (Seidl et al., 2020) or the capture of objective data such as physiological arousal (Kelly, McDonald, & Rushby, 2012), might prove fruitful.

Third, the duration was rather short between the assessments of need satisfaction. Therefore, it is difficult to ascertain how long the effects from the ostracism manipulation may have persisted. However, such time intervals are common within the ostracism literature (e.g., Ren et al., 2013). It would be beneficial for future researchers to extend the time intervals if replicating this design as this may provide more relevance for clinical work and treatment outcomes.

Fourth, it could be suggested that the filler task introduces an uncontrolled variable (e.g., a potential additional moderator) as participants are directed to a coping method (i.e., focussed attention). However, as rumination is known to prolong the negative effects of ostracism (Wesselmann et al., 2013), it was important to limit the opportunity for participants to dwell on their cyberball experience. Moreover, as ostracized individuals who are high in EA could conceivably find some difficulty in controlling their negative thoughts (see Schut & Boelen, 2017, p. 11), such a filler task may provide additional sensitivity in detecting the proposed moderation effect. Fifth, we did not control for factors that may sensitize people to rejection. For example, Riva, Wesselmann, Wirth, Carter-Sowell, and Williams (2014) theorized that neuroticism and insecure attachment styles may increase vulnerability to catastrophizing one's ostracism experience. Moreover, such factors have been observed to reduce the the incremental validity of EA in predicting distress (e.g., Vaughan-Johnson, Quickert, & MacDonald, 2017). Therefore, future researchers should control for such individual differences.

Future research should investigate the mechanism of EA to elucidate why it may moderate social pain. It is possible that those who are low in EA have more psychological resources to refortify their temporary depletion in primary needs following ostracism. Indeed, being psychologically flexible (and accepting) is related to a greater capacity for self-control (Kashdan & Rottenburg, 2010). In contrast, those high in EA may attempt to suppress and avoid unwanted thoughts and feelings that result from being ostracized, and as a consequence, this may paradoxically maintain their pain for longer. Such rebound effects have been evidenced in the literature (e.g., Wenzlaff & Wegner, 2000); however, recent evidence suggests that EA may operate instead by amplifying negative thoughts (Quickert, Vaughan-Johnston, & MacDonald, 2020). Researchers may also consider combining different

approaches for study of ostracism and EA. For example, psychological flexibility (of which EA is a key component) has been recently found to mediate the negative effects of ostracism alongside other factors such as social support (Szkody & McKinney, 2019). Therefore, researchers may consider exploring potential moderated mediation effects, such that EA may be both moderator and mediator within the same model.

Conclusion

The current study extended previous literature by finding that EA moderates the persistence of the short-term effects of experimentally-induced ostracism. A tentative implication is that by learning acceptance-based techniques to decrease experiential avoidance and psychological inflexibility (e.g., by engaging with process-based therapy, Hofmann & Hayes, 2019), individuals may cope faster with social pain. However, further research is required to replicate and extend this finding with larger sample sizes and in different paradigms and contexts.

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Table 1. Means and standard deviations (in parenthesis) for each need.

		Included (N=20)	Ostracized (N=20)
BEAQ	-	49.25 (12.77)	46.20 (17.73)
Manipulation Checks	Perceived Acceptance	7.50 (1.36)	2.50 (1.10)
	Perceived Ball Tosses	36.10 (8.38)	6.35 (3.23)
Reflexive Needs	Belonging	4.22 (.47)	2.02 (.67)
	Self-Esteem	4.06 (.45)	2.71 (.74)
	Meaningful Existence	4.24 (.54)	2.45 (.90)
	Control	3.42 (.73)	1.75 (.55)
Reflective Needs	Belonging	4.33 (.39)	2.47 (1.00)
	Self-Esteem	4.14 (.40)	3.42 (.95)
	Meaningful Existence	4.18 (.45)	3.37 (1.06)
	Control	3.34 (.59)	2.20 (.79)

Table 2. Regression Analyses

Outcome Variables		Inclusion Status			Experiential Avoidance (EA)			Inclusion Status x EA			Cohen's f^2
		β	t	p	β	t	p	β	t	p	
Reflexive	Belonging	-.91	-14.70	< .001	-.12	-1.13	.26	-.16	-1.56	.13	-
	Self-Esteem	-.76	-7.28	< .001	-.04	-.24	.81	-.19	-1.04	.30	-
	Meaningful Existence	-.79	-7.85	< .001	.04	.24	.81	-.24	-1.40	.17	-
	Control	-.79	-7.87	< .001	.04	.22	.82	-.05	-.31	.76	-
Reflective (Recovery)	Belonging	.06	.53	.59	.23	1.14	.26	-.88	-4.36	< .001	.52
	Self-Esteem	.13	1.13	.26	.09	.47	.64	-.78	-4.01	< .001	.45
	Meaningful Existence	.01	.09	.93	.11	.61	.55	-.84	-4.49	< .001	.54
	Control	-.02	-.16	.88	.18	.66	.51	-.40	-1.45	.15	.06

Note: The Cohen's f^2 effect sizes presented are of the interaction effects observed.

