

Narcissism and Anger: The Moderating Role of Social Exclusion and the Mediating Role of Hostile Attribution Bias Mechanism

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Abstract

The present research ($N = 169$) examined the relationship between narcissism and anger responses considering the moderating role of social exclusion and the mediating role of hostile attribution bias. For this, social exclusion scenario and inclusion scenarios were utilized, and a total 183 participants were recruited from the UK using the online platform Qualtrics. Fourteen responders were excluded for failing the attention check question and the remaining 169 participants were randomly assigned to either the social inclusion condition ($n = 87$) or the social exclusion condition ($n = 82$). The results demonstrated that participants with high narcissism reported a greater level of anger when socially excluded, yet not when they were socially accepted. Furthermore, we observed indirect (mediation) effects in which greater levels of anger were affected by higher narcissism via higher levels of hostile attribution bias in both social exclusion and inclusion conditions, but the indirect effect was stronger in the condition of social exclusion than in the condition of social inclusion. Thus, the strong direct and indirect relationship between narcissism and anger can be found in the social exclusion condition, while the weaker but significant indirect relationship between narcissism and anger via hostile attribution can be also observed in the social inclusion condition. We discuss the implications of these findings and future research directions.

Keywords: *Narcissism, Social Exclusion, Anger, Hostile Attribution Bias*

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자기애와 분노: 사회적 배제의 조절효과와 적대적 귀인 편향의 매개효과

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국문요약

본 연구는 자기애와 분노의 관계가 사회적 배제 처치 여부에 따라 달라지는지(조절효과)와 적대적 귀인 편향을 통해 설명되는지(매개효과)를 검증하였다. 이를 위해, 사회적 배제 시나리오를 활용하여 사회적 배제 조건과 이에 대비되는 사회적 수용 조건을 설정하였다. 그리고 '사회적 상황에서의 반응과 개인차에 대한 연구'라고 공지하여 온라인 플랫폼을 활용해(Qualtrics)을 참가자를 모집하였다. 이에 따라, 18세에서 25세 사이의 영국인 183명이 참가신청을 하였으나, 불성실하게 응답한 14명을 제외하여 사회적 배제 조건과 사회적 수용 조건에 각각 82명과 87명씩 무선할당하였다($N = 169$). 모든 실험 절차는 온라인 상에서 진행되었고, 두 조건의 참가자들은 절차에 따라 먼저 자기애 척도를 작성한 후, 각각 사회적 배제 시나리오와 수용 시나리오를 읽은 후, 적대적 귀인 편향과 분노 수준을 측정하는 척도에 응답하였다. 그 결과, 사회적 배제 조건에 할당된 참가자들의 경우, 자기애가 강할수록 더 강한 분노를 보고하였다. 또한 사회적 배제 조건과 사회적 수용 조건 모두에서 강한 적대적 귀인 편향이 자기애와 분노 사이를 매개하는 것으로 확인되었지만(간접효과). 이 간접효과는 사회적 수용 조건보다 사회적 배제 조건에서 더 강하게 나타났다. 따라서 사회적 수용 조건에서도 적대적 귀인 편향이 자기애와 분노 사이를 매개하는 것이 유의하더라도 사회적 배제 조건에서 매개효과가 더 강한 것으로 볼 수 있다. 이와 관련하여, 본 연구의 의의와 추후 연구 방향은 본문에서 구체적으로 제시하였다.

주제어: 자기애, 사회적 거절, 분노, 적대적 귀인 편향

I. Introduction

In recent years, modern individualistic Western societies have seen an increase in narcissism (Cheng 2004; Twenge and Foster 2010). Moreover, interest in narcissism has recently emerged as a major concern in East Asian countries, which are becoming similar to Western lifestyles. Narcissism is a different concept from self-love, which values itself in a healthy way. Narcissism in this study is defined as "pathological narcissism"; a personality trait that makes everyday life difficult, including interpersonal relationships. Narcissism consists of heterogeneous attributes mixed with anti-social aspects such as privilege, exploitative behavior, lack of empathy, and neurological aspects such as helplessness, emptiness, and shame (Campbell and Foster 2007). Despite the complexity of the concept, researchers agree that the core characteristics of narcissism are exaggeratedly aware of its importance and constantly demand approval and admiration from others. This core characteristic is a very unrealistic expectation and demand because it is very difficult to meet in practice. Narcissism, therefore, can be considered a psychological condition that makes you experience anger easily.

Recently, research on narcissism has been activated in various ways. For example, a meta-analysis¹ found that American college students' mean levels of narcissism were positively correlated with the chronological year of data collection over 30 years, showing an increase in narcissism over time (Twenge, et al. 2008). Narcissism as a personality trait is characterized by overly positive self-concepts, a pervasive sense of grandiosity and self-importance, with the need to obtain continuous self-validation from others (Lamarche and Seery 2019; Miller and Campbell 2008 ; Morf and Rhodewalt 2001; Thomaes and Brummelman 2016). According to the literature On narcissism, narcissists are self-focused at the expense of others, view themselves as superior to others, feel entitled to privileges, and tend to be hostile or aggressive, especially when they believe their self-views are threatened (Barry and Malkin 2010; Rasmussen 2016; Thomaes, et al. 2008).

In addition to the increased recognition of narcissism, there has been growing interest regarding narcissism's relationship with aggression (Bettencourt, et al. 2006; Bushman, et al. 2009; Lambe, et al. 2018; Reidy, et al. 2010). According to the theory of threatened-egotism (Baumeister et al. 1996), narcissists are prone to be susceptible to provocation (e.g., verbal insults, physical attack) because their self-esteem can be threatened. Empirical evidence showed that those high in narcissism were more likely to act with severe and aggressive responses than those lower in narcissism when participants were provoked via criticism and insult (Bettencourt, et al. 2006; Bushman and Baumeister 1998; Bushman, et al. 2009; John Paulhus 2010).

In the present research, we focus on social exclusion as a form of provocation in social interaction because social exclusion is a pervasive experience in daily life. People often experience incidents of being excluded or rejected in their social interactions (Baumeister, et al. 2005; Bozkurt and Gilgor 2019; Williams 2007). Social interactions can include face-to-face or remote online interactions, as the negative effects of social exclusion do not differ significantly between the situations (Filipkowski and Smyth 2012). Baumeister and Leary

¹ Meta-analysis is a quantitative, formal, epidemiological study design used to systematically assess the results of previous research to derive conclusions about that body of research. Typically, but not necessarily, the study is based on randomized, controlled clinical trials.

(1995) suggested that human behaviors are motivated by the innate need to belong. Scholars have proposed that the need is arguably rooted in the evolutionary history of humanity. Individuals who were alienated from the group were more likely to be threatened with survival due to the lack of food sharing, the difficulty of hunting alone and the lower level of security (e.g., Buss 1990; Kerr and Levine 2008). Literature regarding social exclusion suggests that the experience of social exclusion can damage basic psychological needs (i.e., belonging, self-esteem, control, and meaningful existence; Williams 2007) and cause increased negative emotions (e.g., anger and sadness; Gerber and Wheeler 2009; Williams 2009; Williams and Nida 2011). Within a computerized game, social exclusion significantly increased negative mood and anger ratings (Seidel, et al. 2013). Furthermore, if people are chronically exposed to social exclusion, they are likely to experience feelings of alienation, depression, helplessness, and meaninglessness (Williams and Nida 2011). Importantly, people who are socially excluded are likely to react aggressively (Twenge, et al. 2001).

However, other evidence suggests that individuals can be aggressive in the absence of provocation due to the influence of certain dispositional factors such as psychopathy and hostility (Reidy, et al. 2008, 2011; Zillmann and Weaver 2007). Importantly, this was also found with narcissism; individuals who were high in narcissistic traits were more likely to be aggressive without provocation compared with those who were low in narcissism (Reidy, et al. 2010). Therefore, the present study aims to clarify the ambiguity of provocation in the relationship between narcissistic traits and aggression.

Some people may tend to interpret the other's behaviors in ambiguous situations as hostile intentions, which is known as hostile attribution bias (Dillon, et al. 2016; Dodge 2006; Orobio de Castro, et al. 2002). Hostile attribution bias is a maladaptive cognitive pattern that is displayed through the tendency to frequently misinterpret benign or ambiguous behavior and situations as hostile or threatening. Past research suggests that hostile attribution bias is a powerful predictor of anger and aggression (Epstein and Taylor 1967). Furthermore, Bushman and Baumeister (1998) suggest hostile attribution bias may play a key part in the relationship between narcissism and aggression as narcissism is related to ego threats. Thus, hostile attribution bias can be suggested to be a possible mediator within the relationship between narcissism and anger because narcissists frequently display a maladaptive emotional and behavioral response during social interaction, often acting aggressively in non-threatening or ambiguous situations (Miller and Maples 2011).

II. Present Research

To recap, narcissism is associated with anger and hostility. When there is a perceived ego threat, highly narcissistic individuals may be more likely to express aggression according to the theory of threatened-egotism (Baumeister, et al. 1996). In line with this, past research on narcissism and anger has shown that individuals with high narcissism displayed a greater level of arousal of anger (McCann and Biaggio 1989), as well as being particularly sensitive to experiencing provocations such as insults and accusations from others (Levin 1993). Moreover, narcissistic people may experience interpersonal frustration in the situation where their beliefs and expectations are rejected by others (Hart and Joubert 1996). Thus, narcissism can predict feelings of anger in the context of social rejection (Twenge and Campbell 2003). Even temporarily increased narcissism scores using a guided-imagery exercise are also related to greater levels of anger, perceived hostility, and aggressive behaviors after a provocation (i.e.,

negative feedback; Li, et al. 2016). Additionally, biological evidence supports that narcissistic individuals are likely to react aggressively to a provocation (i.e., interpersonal insult) because the gap between their grandiose self-image and threatened self-image was increased (Chester and DeWall 2016).

However, the relationship between narcissism and aggression can be also observed in the absence of provocation (Reidy, et al. 2010). This can be explained by the role of hostile attribution bias since hostile attribution is related to narcissism as well as anger and aggressive responses (Godleski and Ostrov, 2010; Tuente, et al. 2019; Wilkowski and Robinson 2008, 2010). For example, people with strong narcissism tend to perceive social exclusion as an immediate threat because they have a strong sense of privilege toward themselves. Also, experiences of social exclusion trigger anger and aggression by activating hostile attribution that judges opponents as enemies. However, there is evidence showing that individuals are less likely to express anger and aggression when they are socially accepted, which suggests that the relationship between narcissism and anger can vary depending on the presence or absence of experience of social exclusion (Bushman and Baumeister 1998; Spector, 2011). Thus, the present study sought to examine whether social exclusion would affect the relationship between narcissism and anger response, considering the mediating role of hostile attribution bias.

In the present research, we examine the level of anger caused by social exclusion as a primary emotional outcome because it provides a great indicator of how people experienced being socially excluded. Past research has shown that social exclusion causes negative emotions such as anger (Buckley, et al. 2004). It is also worth noting that anger is conceptually distinguished from hostility and aggression because aggression refers only to behavior and not to cognition (i.e., hostile attribution) or emotion (i.e., anger) (Warburton and Anderson 2015). In the context of social exclusion, people's aggressive responses may also be affected by anger (e.g., Chow, et al. 2008). Thus, by examining anger as a primary emotional outcome, the present research can provide further evidence in the area of literature in narcissism, social exclusion and aggression.

The current study presents the following conceptual study framework to examine the relationship among variables (see Figure 1). We examined the relationship between narcissism and anger response considering the moderating role² of social exclusion and the mediating role³ of hostile attribution bias. Specifically, we expected that individuals with high narcissism would report greater levels of anger when they are socially excluded, yet not when they are socially accepted. We also expected that the greater levels of anger would be affected by higher narcissism via higher levels of hostile attribution bias, but the indirect (mediation) effect would be stronger in the condition of social exclusion compared with the condition of social inclusion. In other words, the key point of this current work is to explore the pathway in which narcissism influences aggression through hostile attribution under the social exclusion condition. However, we expected that this path would not be significant in the condition of social inclusion. Therefore, we include the condition of social inclusion as opposed to social

² A moderator (moderating role) is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and strength of the relation between an independent or predictor variable and a dependent or criterion variable.

³ A mediator (mediating role) is the variable that causes mediation in the dependent and the independent variables. In other words, it explains the relationship between the dependent variable and the independent variable.

exclusion in the experiment.

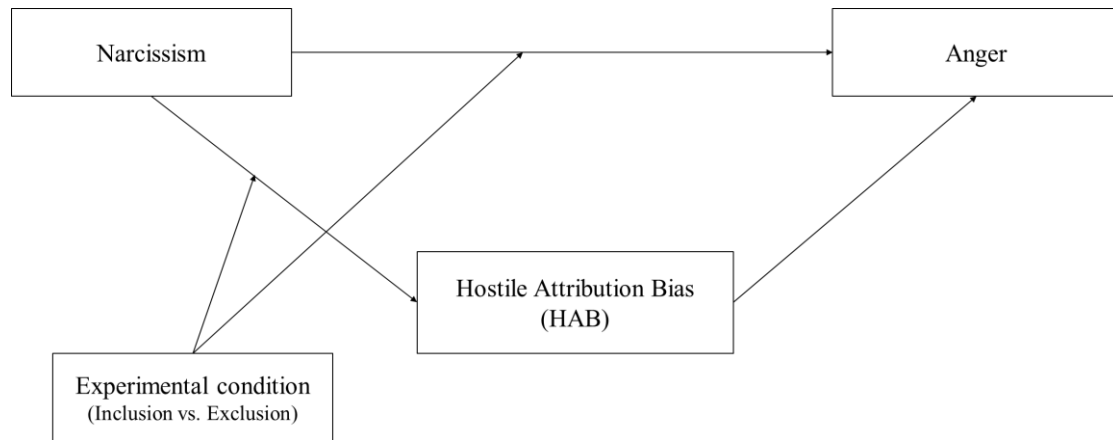


Figure 1. Conceptual model depicting the moderator role of experimental condition (inclusion vs. exclusion) and the mediating role of HAB in the relationship between narcissism and anger.

III. Methods

1. Participants and Design

A total of 183 participants were recruited from the United Kingdom using an online platform (Qualtrics). Fourteen respondents were excluded for failing the attention check question⁴ and the remaining sample of 169 participants was included in the analysis reported below ($M_{\text{age}} = 20.75$, $SD_{\text{age}} = 1.89$; 139 women). In the present study, participants were required to be aged 18-25 and competent with written English. A between-subjects design was used to manipulate social exclusionary (vs. inclusionary) situations; all participants were randomly assigned to either the social inclusion condition ($n = 87$) or the social exclusion condition ($n = 82$).

2. Procedure

Participants who agreed to take part in what was described as a study on ‘investigating relationships between individual differences and responses to social situations’ first completed a question about narcissism. Next, in order to manipulate the situation of social inclusion and social exclusion, participants were assigned randomly to read one of two imaginary scenarios. The scenarios were adopted from Chen et al. (2017). The scenario involved the participant imagining that they had requested to become friends with three people on “Friend Club” and provided information about themselves in detail for the people to read:

⁴ An attention check item, “Please select ‘Very much like me’ to indicate that you are reading the questions accurately”, was presented with 28 items of narcissism. Participants who did not select ‘Very much like me’ on the 5-point Likert scale were considered unreliable respondents and were excluded from the data analysis.

Friend Club is an online social network website. You are a member of Friend Club and make new friends on it. Recently, you browsed someone's personal pages and noticed three of them have the same hobbies as you. You wanted to make friends with the three guys, so you submitted the application to add them as friends. According to the requirements of Friend Club, you provided your information such as personality and hobbies carefully. You paid lots of attention to the application because you were so eager to become friends with them.

Then participants received the feedback message: in social inclusion condition, "*Congratulations! Based on your submitted personality and hobbies, the three members all agreed to add you as their friend. So you can browse their personal pages and chat with them online,*" and in social exclusion condition "*Sorry! Based on your submitted personality and hobbies, the three members rejected to add you as their friend. So you cannot browse their personal pages and cannot chat with them online.*" After reading the scenario, participants were asked to write their thoughts and feelings regarding the imaginary scenario that they had experienced. After this task, participants completed a series of measures which we describe below. At the end, participants were thanked and debriefed.

3. Measures

3.1. Narcissism. The Brief-Pathological Narcissism Inventory was used to identify participants' severity of narcissism (Schoenleber, et al. 2015). The scale consisted of 28 statements (e.g., "I can read people like a book") for which participants rated how much they believed each statement described themselves on a 5-point Likert scale (0 = *not at all like me*, 5 = *very much like me*). As in Schoenleber et al. (2015), participants' responses were averaged to obtain the average score of narcissism, therefore a high score indicated high narcissism functioning. The Cronbach's Alpha for this measure was .90, therefore the measure was considered as having high internal consistency.

Within this questionnaire, an attention check item ("please select 'very much like me' to indicate that you are reading the questions accurately") was embedded to ensure that participants were reading the questions carefully and not spontaneously pressing through the questionnaire.

3.2. Manipulation Check. Assessing the effectiveness of the manipulation of social situation (inclusion vs. exclusion), participants answered three items (i.e., "I felt ignored", "I felt rejected", "I felt like an outsider") on 7-point Likert scales from 1 (*not at all*) to 7 (*extremely*) (Cronbach's Alpha = .94).

3.3. Hostile Attribution Bias (HAB). In order to measure participants' HAB, and understand whether narcissism correlated with HAB, the validated Word Sentence Association Paradigm Hostility Scale (Dillon, et al. 2016) was used. The scale consisted of 32 statements, that could either be interpreted as hostile or neutral, that were followed by an adjective to describe these statements. The participants were required to determine how well each adjective was associated with the statement on a 5-point Likert scale (1 = *not at all related*, 5 = *very much related*). For example, sentences included "a friend laughs at you" combined with adjectives such as "amused" or "disrespectful". A high score indicated high HAB functioning on the Sentence Association Paradigm Hostility Scale. The scale has been evaluated as both reliable and valid (see Gonsalves, et al. 2019) and the Cronbach's Alpha score

($\alpha = .80$) for the present study showed the adequate level of internal consistency.

3.4. Anger. In order to measure participants' perceived level of anger following the experimental scenarios (social inclusion or social exclusion), we presented four items (i.e., "I felt angry", "I felt irritated", "I felt annoyed", "I felt mad") using 7-point Likert scales (1 = *not at all*, 7 = *extremely*; Cronbach's Alpha = .95).

IV. Results

In the present study, the data were analyzed using SPSS for windows version 26.0 and the SPSS PROCESS macro. Descriptive statistics including the correlations between variables, means and standard deviations are presented across experimental conditions in Table 1 and separately for each experimental condition (social exclusion vs. social inclusion) in Table 2.

Table 1. Intercorrelations, means, and standard deviations for study variables

Measure	1	2	3	4
1. Narcissism	—			
2. HAB	0.41***	—		
3. Anger	0.16*	0.20*	—	
4. Manipulation	0.05	0.08	0.76***	—
M_{tot}	2.97	3.26	2.19	3.06
SD	0.61	0.42	1.59	2.13

*** $p < .001$, * $p < .05$

Table 2. Correlations, Means and standard deviations between study variables separately for each experimental condition

Measure	1	2	3	4
1. Narcissism	—	0.24*	0.01	-0.04
2. HAB	0.52***	—	-0.12	-0.18
3. Anger	0.36***	0.50***	—	0.30**
4. Manipulation	0.23*	0.44***	0.53***	—
$M_{Exclusion}$	2.94	3.21	3.29	4.84

(SD)	(0.66)	(0.48)	(1.63)	(1.66)
$M_{Inclusion}$	3.00	3.30	1.16	1.37
(SD)	(0.57)	(0.34)	(0.49)	(0.63)

Note. Correlations between variables for the social exclusion condition ($N = 82$) are presented below the diagonal, and correlations for the social inclusion condition ($N = 87$) are presented above the diagonal. For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed. *** $p \leq .001$, * $p < .05$

1. Manipulation Check

A t-test conducted with experimental condition (social exclusion vs. social inclusion) as the independent variable and the composite perceived emotional measure (e.g., ignored, rejected) as the outcome variable revealed that participants in the social exclusion condition reported that they felt significantly more excluded ($M = 4.84$, $SD = 1.66$) than participants did in the social inclusion condition ($M = 1.37$, $SD = 0.63$), $t(167) = -18.18$, $p < .001$, $d = 2.76$, $CI_{95\%} = -3.85$ to -3.09 . Thus, the manipulation of social exclusion worked as expected.

2. Moderated Mediation Analysis

In the present study, we expected both the conditional direct and indirect effect of narcissism on anger: (a) the relationship between narcissism and anger would be moderated by social exclusionary situation (social exclusion vs. inclusion)[conditional direct effect] and (b) narcissism would predict anger mediated by hostile attribution bias (HAB), and this relationship to be moderated by social exclusion (vs. inclusion)[conditional indirect effect]. In order to test our posited model, we performed a moderated mediation analysis following the procedure outlined in Hayes (2018, Model 8) using the SPSS PROCESS macro. In this model, narcissism served as a predictor variable (IV), anger served as outcome variable (DV), hostile attribution bias was treated as a mediator and experimental condition (coded 0 = social inclusion, 1 = social exclusion) was served as a moderator. We generated 95% percentile bootstrap confidence intervals using 10000 bootstrap samples.

In the first regression model (HAB as an outcome variable; $R^2 = .21$, $F(3,165) = 14.38$, $p < .001$), we found a significant main effect of social exclusion, $b = -.78$, $SE = .29$, $t = -2.68$, $p = .008$, $CI_{95\%} [-1.34, -.20]$, which was qualified by a significant interaction between narcissism and social exclusion, $b = .24$, $SE = .10$, $t = 2.48$, $p = .014$, $CI_{95\%} [.05, .42]$, indicating that the effect of narcissism on HAB was significant in the condition of social exclusion, $b = .38$, $SE = .06$, $t = 6.05$, $p < .001$, $CI_{95\%} [.26, .51]$, as well as in the condition of inclusion, $b = .15$, $SE = .07$, $t = 2.03$, $p = .044$, $CI_{95\%} [.004, .29]$. However, the effect size of the social exclusion condition was much stronger ($d = 1.35$) than the social inclusion condition ($d = .44$) (see Figure 2a).

In the second regression model (anger as an outcome variable; $R^2 = .54$, $F(4,164) = 49.08$, $p < .001$), results revealed a significant interaction effect between narcissism and social exclusion, $b = .70$, $SE = .28$, $t = 2.48$, $p = .014$, $CI_{95\%} [.14, 1.26]$; controlling for the mediator (HAB), the effect of narcissism on anger was significant in the condition of social exclusion, $b = .60$, $SE = .20$, $t = 2.95$, $p = .004$, $CI_{95\%} [.20, 1.00]$, but not in the condition of inclusion, $b = -.10$, $SE = .21$, $t = -.48$, $p = .632$, $CI_{95\%} [-.52, .31]$ (see Figure 2b). Anger was also significantly

predicted by HAB, $b = .78$, $SE = .23$, $t = 3.44$, $p < .001$, $CI_{95\%} [.33, 1.23]$.

In addition, the index of moderated mediation provides an omnibus test of the conditional indirect effect (Hayes, 2018; Preacher et al., 2007). The significant result of the index of moderated mediation indicated that the indirect effect of narcissism on anger via HAB was significantly moderated by experimental condition, $b = .18$, $SE = .10$, $CI_{95\%} [.02, .41]$. Although narcissism had indirect effects on anger via HAB in both experimental conditions (Social inclusion: $b = .11$, $SE = .06$, $CI_{95\%} [.01, .24]$ vs. Social exclusion: $b = .30$, $SE = .11$, $CI_{95\%} [.11, .52]$), the indirect effect in the social exclusion condition was stronger than in the social inclusion condition (see Figure 3).

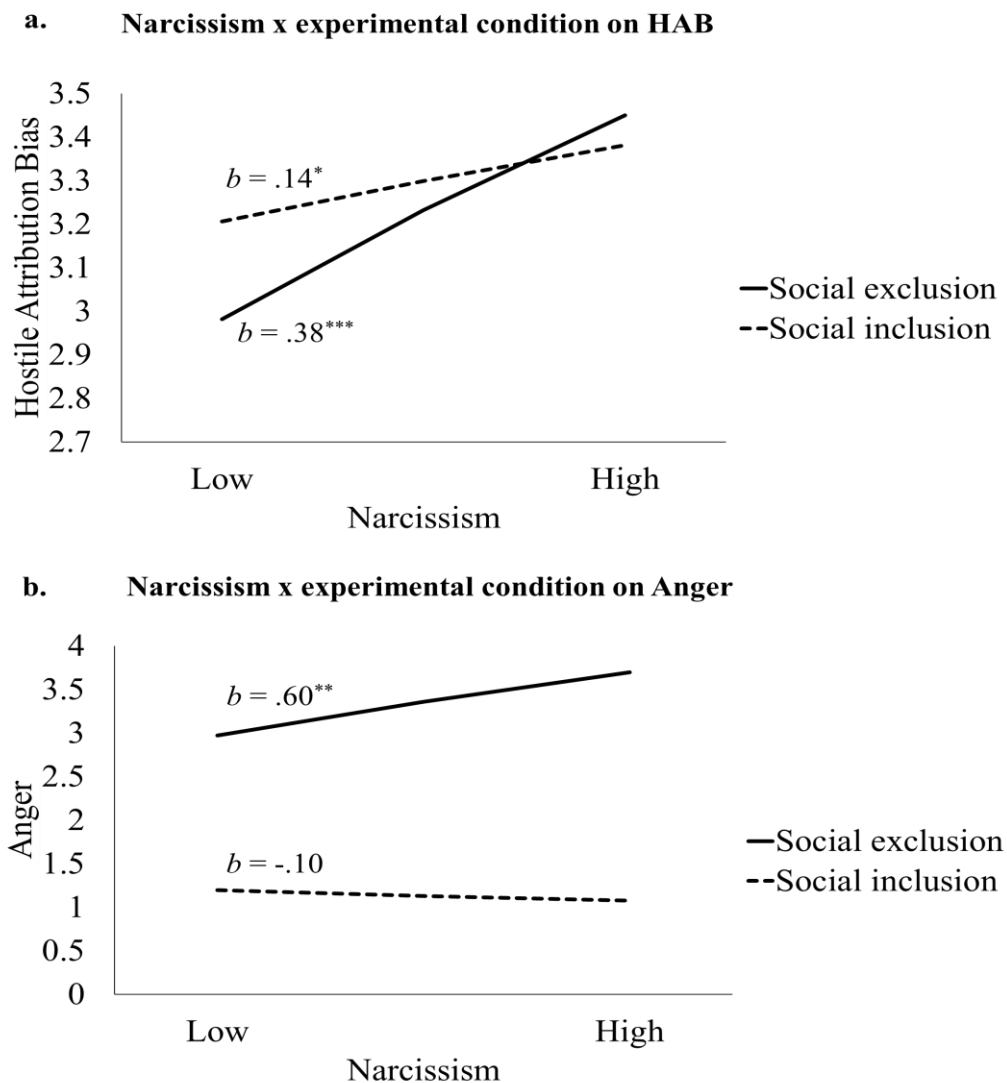


Figure 2. Narcissism x Experimental condition interaction for HAB (top row) and for Anger (bottom row). The presented regression coefficients are based on the results analyzed by the SPSS PROCESS macro. *** $p < .001$, ** $p < .01$, * $p < .05$.

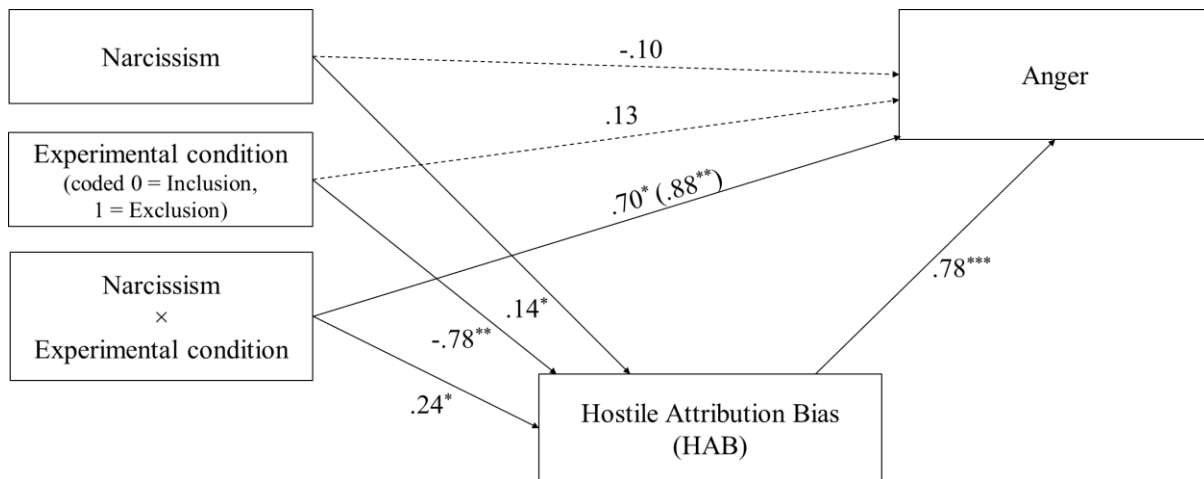


Figure 3. The moderating roles of experimental condition on the indirect effects of narcissism on anger via hostile attribution bias. Total direct effect shown in parentheses. The presented regression coefficients (except for the total direct effect of Narcissism x Experimental condition interaction effect on Anger, which is based on the outcomes of the multiple regression analysis) are based on the statistical results analyzed by the SPSS PROCESS macro. *** $p < .001$, ** $p < .01$, * $p < .05$.

V. Discussion

In this research, we examined whether there is a moderating effect of social exclusion on the relationship between narcissism and emotional reaction (i.e., anger). Findings from the current study showed that narcissistic individuals can be angry both with and without provocation (i.e., social exclusion), which contributes to the area of literature on narcissism, social exclusion and aggression in many important ways.

Using a moderated mediation analysis, we tested our expectations (conditional direct and indirect effects). First, we found that the relationship between narcissism and anger was moderated by social exclusion; narcissism predicted anger in the social exclusion condition and not the inclusion condition (conditional direct effect). This finding is in line with a previous research in which narcissists displayed increased anger in situations they perceived as threatening (Warburton et al., 2008). Warburton et al.'s (2008) finding could be extended to social exclusion which can be perceived as threatening. This result has also supported a similar research that identified that social rejection moderated the relationship between narcissism and anger (Twenge and Campbell, 2003). Thus, social exclusion as a form of provocation can affect narcissistic individuals' anger responses.

Second, we found significant indirect effect of narcissism on anger via hostile attribution bias in both social exclusion and social inclusion conditions. However, the indirect effect in the condition of social exclusion was significantly higher than the indirect effect in the condition of social inclusion. In other words, individuals with high narcissism are likely to feel angry due to their higher level of hostile attribution bias when they are socially excluded. However, it may also be true that highly narcissistic people can be angry without provocation when their level of hostile attribution bias is increased. This result can extend the previous work that showed that narcissism is positively correlated with aggression without

provocations (Reidy, et al., 2010). Thus, hostile attribution bias can be a good psychological mechanism to explain why narcissistic individuals display maladaptive social responses (Miller and Maples, 2011). Likewise, the present findings also support previous research that identified the relationship between hostile attribution bias and anger (Hubbard, et al., 2001); anger is accompanied by hostile thoughts (Wilkowski and Robinson, 2010) and HAB is central to the maintenance of anger (Dillon et al., 2016).

In sum, the present study observed that the relationship between narcissism and anger can be explained by hostile attribution bias in both social exclusion and social inclusion situations. However, the mediational effect of hostile attribution was much stronger in the condition of social exclusion, which suggests that the relationship between narcissism and hostile attribution bias is significantly associated with the presence or absence of provocation. Importantly, in our posited model, we demonstrated the moderating effect of social exclusion on the relationship between narcissism and anger when controlling for the mediator (hostile attribution bias), which supports provocation effect (Bettencourt, et al., 2006; Bushman and Baumeister 1998; Bushman et al., 2009; John and Paulhus 2010). Social exclusion is a form of provocation and threatens narcissists' positive self-image and threatens the need for belonging and control (Williams, 2007) which are more central to narcissistic individuals (Hartgerink et al., 2015). Because narcissists are dependent on other's evaluations, intolerant of criticism and their grandiosity encourages them to sustain a positive self-image (Baumeister, 1996; Bushman and Baumeister 1998; Morf and Rhodewalt 2001), they are more likely to be angry in response to social exclusion (vs. social inclusion). Also, narcissists may act aggressively towards those who have threatened their ego in order to regain status and control (Twenge and Campbell, 2003).

1. Real-Life Applications

The present results suggest that social exclusion should be considered a risk factor for anger. Bullying interventions have become increasingly important within key institutions, such as schools, universities and workplaces (Clarkson, et al. 2019; Murray, et al. 2019). Although people frequently experience social exclusion within relationships with family, friends, and colleagues (Baumeister, et al. 2005; Bozkurt and Gilgor 2019; Williams 2007), social exclusion may be difficult to detect compared with overt form of bullying; it is likely to occur even within institutions that have zero-tolerance bullying policies. Therefore, schools, universities and companies should pay more attention to the effect of social exclusion on individual's psychological well-being. The present research suggests that personality vulnerability of (pathological) narcissism can cause stronger aggression when associated with the condition of social exclusion (Robinson 2001). Therefore, introducing more vigilant anti-bullying schemes that aim to identify and tackle discrete social exclusion would be beneficial. Importantly, introducing more vigilant anti-bullying schemes to reduce social exclusion would be effective among individuals with high narcissism. However, it would also be beneficial for institutions to recognize social exclusion as a phenomenon that can negatively influence all people regardless of their individual differences in the severity of narcissism (Leary 1990) because the experience of social exclusion is related to negative psychological outcomes such as depression, helplessness and aggressive behavior (Twenge, et al. 2001; Williams and Nida 2011).

The present research can also provide a possible suggestion that intervention should be used to tackle hostile attribution bias which can be a fuel for narcissist's increased level of

anger. Reducing hostile attribution bias in individuals with high narcissism would result in a reduction in anger and aggression. Then how can we reduce hostile attribution bias? A recent study demonstrated the effect of self-persuasion on children's hostile attribution bias (van Dijk, et al. 2019). In addition, mindfulness (defined as moment-to-moment awareness or paying attention to the present moment intentionally) could be a great tool to mitigate anger and aggressive behaviors because it is associated with lower hostility (Heppner, et al. 2008). When individuals are mindful, they are less evaluative and defensive to the present moment.

2. Limitation and Future Works

The current research used an adequately sized, non-clinical sample and obtained insightful causal results which may aid new beneficial interventions. The negative effects of social exclusion do not significantly differ from face-to-face situations to remote communications (Filipkowski and Smyth 2012), suggesting that participants' experiences within the online scenario based social exclusion task would be similar to their real-life experiences to social exclusion. However, experiments in artificial settings may have low ecological validity, which limits generalizability. Therefore, participant's actual experience of social exclusion and social inclusion should be examined in the future work.

In the present study, we focus on what paths will lead to a maladaptive reaction such as anger when the pathological characteristics of narcissism are associated with the social conditions of social exclusion. However, narcissism is a mixture of antisocial aspects (e.g., privilege, exploitative behavior, lack of empathy) and internalized problems (e.g., helplessness, emptiness, and shame) (Campbell and Foster 2007). Therefore, if we verify which characteristics of narcissism's heterogeneity affect maladjustment a little more strongly, our understanding of narcissism will be broadened. It will also help to provide more focused therapeutic interventions for patients who show both narcissistic and aggressive aspects.

The present research focuses on anger as a main outcome variable. Future work should investigate how narcissists react to social exclusion by considering other emotions. For example, social exclusion may elicit other negative emotions such as sadness, shame and humiliation (Buckley, et al., 2004; Chow, et al., 2008; Dickerson 2011). Furthermore, in order to further understand the relationship between narcissism and aggression, we need to measure the level of behavioral reactions after social exclusion. For example, after social exclusion, some may feel angry and report antisocial behavioral intentions, which in turn results in aggressive behaviors. However, those who are socially excluded may also have a motive to avoid further exclusion accompanied by hurt feelings. This avoidant motivation could lead them to withdraw social contact and interaction with those who have ruled them out (Richman and Leary 2009).

People's immediate psychological reactions to social exclusion can be affected by their cultural value orientations. Past research has shown that individuals with higher endorsement of collectivistic values report lower negative affect, greater self-esteem, and lower intentions of aggressive behaviors vis-à-vis social exclusion compared to those with great endorsement of individualistic values (Gardner, et al., 2018). Furthermore, Pfundmair et al. (2015) found that participants with more individualistic orientation showed higher antisocial behavioral intentions in their response to social exclusion than social inclusion. In contrast, there was no difference in behavioral intentions between social exclusion and inclusion among those with high collectivistic orientation. Given the positive relationship between narcissism and independent (vs. interdependent) self-construal, we can expect that highly narcissistic

individuals' negative affect (anger) and behavioral intention (antisocial) to social exclusion would be elicited by a greater level of independent self-construal (mirroring the individualistic cultural expectation and value), but would be buffered by a greater level of interdependent self-construal (mirroring the collectivistic cultural expectation and value) (Robertson, et al., 2016). Thus, future research should consider the influence of cultural values in understanding the relationship between narcissism and anger along with social exclusion. Narcissism, as a personality characteristic, may not be absolutely different from culture, but the conditions in which narcissism is triggered can vary sufficiently depending on the culture. Although the current study demonstrated the paths of narcissism to anger among British participants by linking them with the condition of social exclusion, future study is required through samples from other countries including South Korea, as a result it will be possible to compare the conditions under which narcissism is more pathologically manifested.

VI. Conclusion

The present study has examined the relationship between narcissism and anger, taking into account the moderating role of social exclusion and the mediating role of hostile attribution. Individuals with high narcissism reported higher level of anger after they were socially excluded compared with after they were socially included. Furthermore, the relationship between narcissism and anger can be explained by cognitive mechanism (hostile attribution bias) in both social exclusion and inclusion conditions. However, the mediation effect was moderated by exclusionary manipulation; the indirect effect was stronger in social exclusion than in social inclusion. We believe that our findings can contribute to a more profound understanding of the relationship between narcissism and anger associated with social exclusion.

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