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Does Social Exclusion Influence Consumers' Pseudodiagnosticity Biases towards Distribution Brands?*

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Abstract

Purpose: This study explores how cognitive impairment caused by social exclusion experience can be explained through cognitive narrowing and how it influences consumer's judgment and reasoning and results pseudodiagnosticity bias towards distribution brands. This study examines the characteristics of cognitive narrowing, which is one of the strategies for overcoming the negative emotions resulting from social exclusion, and how cognitive errors called pseudodiagnosticity bias occur due to cognitive narrowing in the evaluation of distribution brands. **Research design, data and methodology:** Present study was performed with 77 college students in Seoul. Participants were randomly assigned to the group who experienced social exclusion and the group who did not experience social exclusion. The analysis has been made of how the degree of bias of pseudodiagnosticity differs according to the experience of social exclusion by t-test. **Results:** The group who experienced social exclusion had a higher level of pseudodiagnosticity bias towards distribution brands than the group who did not experience social exclusion. **Conclusions:** This study confirmed what characteristics of cognitive narrowing, which is one of the strategies for overcoming the negative emotions resulting from social exclusion, and how cognitive errors called pseudodiagnosticity bias occur due to cognitive narrowing. Implications and future research directions were discussed and suggested.

Keywords : Social Exclusion, Escape Model, Distribution, Pseudodiagnosticity Bias

JEL Classification Code : D11, D12, M31

1. Introduction

The Social cooperation and support is essential for an individual to survive. In order to secure the skills and resources necessary for survival, people want to belong to groups and adapt their actions and ideas in the way society wants them to. Everyone has a basic desire to belong to a certain group, which is a fundamental and necessary human needs. Therefore, if an individual is excluded or rejected from the group he wishes to belong to, the individual will be greatly shocked. In addition to being psychologically frustrated and stressed, cognitive thinking ability can be impaired.

In recent years, as the complexity and diversity of society increases, it is often found that the exclusion and discrimination of other members' increase and become more common, rather than acknowledging and respecting the existence and value of each member. This means that the number of people who have experienced exclusion, discrimination and rejection is increasing, and as a result, more people are also suffering from negative emotions and cognitive impairment.

This study examines the characteristics of cognitive narrowing, which is one of the strategies for overcoming the negative emotions resulting from social exclusion, and how cognitive errors called pseudodiagnosticity bias occur due to cognitive narrowing. Previous studies have focused only on the fact that the negative emotions of consumers can cause cognitive narrowing, and this cognitive narrowing brings about various cognitive errors or cognitive distortions. This study was intended to anticipate and identify the mechanism by which error or bias would be in the operation of System 1. In other words, this study explores how cognitive impairment caused by social exclusion experience can be explained through cognitive narrowing and how it affects consumer's judgment and reasoning and results pseudodiagnosticity bias. This study

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is expected to be useful for the study of social exclusion and the resulting consumer behavior, in particular, the error of consumer decision making and the company's marketing strategy. In addition, present study intends to examine how such consumer bias affects the evaluation of distribution brands.

2. Literature Review

2.1. Social Exclusion

Social Exclusion refers to the process by which individuals are blocked (or denied full access) to the various rights, opportunities and resources that are generally available to members of other groups and are essential for social integration and human rights compliance within certain groups (Filia, Jackson, Cotton, Gardner & Killackey, 2018; Silver, 1994). Social exclusion, also called social marginalisation, in the sense of being degraded to the periphery of society and experiencing social disadvantage, is a term that has been generally used in Europe since it was first used in France. Social exclusion is used in many fields, including pedagogy, sociology, psychology, politics and economics (Peace, 2001).

Since maintaining a stable social relationship is so important for human survival and safety, the desire to belong is one of the most basic and fundamental motivations (Smith, Murphy & Coats, 1999). Thus, studies have shown that what is accepted and rejected by social groups has a wide range of effects on individuals. Health, happiness and well-being are closely related to whether people are accepted or denied, and those who are deprived of close social ties have more negative physical and psychological consequences than those with strong social networks (Cacioppo, Hawkley & Berntson, 2003). Social exclusion can also cause physiological side effects, such as elevated blood pressure, pain-related brain areas being activated (Eisenberger, Lieberman & Williams, 2003), and negative effects on psychological well-being.

There are conflicting studies on how people who have experienced social exclusion react. According to the theory of the social monitoring system, social exclusion also makes it difficult for individuals to belong to a group and therefore motivate individuals to find social clues that can be included in the group again (Pickett & Gardner 2005). Thus, they are interested in creating new sources of social relations and social ties (Maner, Dewall, Baumeister & Schaller, 2007), or are very sensitive to social acceptance (DeWall, Maner & Rouby, 2009), and consume more products symbolizing group membership (Mead, Baumester, Stilman, Raw & Vaugh, 2011).

On the other hand, social exclusion can increase antisocial behavior, which is the opposite of pursuing compliance. Those who have experienced social exclusion are more aggressive (Buckley, Winkel & Labductivey, 2004), and are less likely to contribute and cooperate less with others (Twenge, Baumeister, Dewall, Ciarocco & Bartels, 2007). It has also been shown to reduce prosocial behavior and lead to an increase in self-defeating behavior (Layous, Davis, Garcia, Purdie-Vaughns, Cook & Cohen, 2017; Twenge, Catanese & Baumeister, 2002). Those who experience rejection show more antisocial behavior and less willingness to perform altruistic and self-sacrificing behaviors, such as helping others, all of which involve self-regulation failure.

Exclusion from social groups has been shown to impair cognitive function. Those who experience social exclusion have been shown to distort time perception, to emphasize the present rather than the future, to show lethargic passivity, and to avoid self-awareness (Twenge, Catanese & Baumeister, 2003). Exclusion from social groups can lead to anxiety or other forms of emotional distress that can lead to short-term impairments of cognitive function, resulting in various cognitive deficits such as logical reasoning disorders (Baumeister, Twenge & Nuss, 2002).

When people discover the possibility of social exclusion, they may be able to suppress their emotional responses, which will preempt human self-regulatory systems. If the resources of the self are all used to suppress emotions, they will not be enough to control the cognitive process. Thus, more automatic cognitive processes can be operated relatively intact, but controlled processes can be difficult to operate. In other words, social exclusion monopolizes some of the resources of the self-execution function, in particular undermining the controlled process. Eventually, they will have less impact on relatively automatic (less efficient and less controlled) tasks, but damage can be found in tasks that require active thinking, such as reasoning and logic.

2.2. Escape Model

The Escape Model is based on the theory of comparing the ideal self with the realistic self and has been applied to explain self-destructive behaviors such as binge eating and suicide (Heatherton & Baumeister, 1991; Mandel, Rucker, Levav & Galinsky, 2017). Self-awareness can sometimes be burdensome for people, especially when their standards are very high or when they are characterized by perfectionism and when they fail to meet their goals or ideals (Duval & Wicklund, 1972). In other words, the escape model is a theoretical framework that looks at how people can escape from their hateful and negative emotional states. One way to reduce negative emotions is to

reduce self-awareness, making the discrepancy between self and related criteria no longer pronounced (Duval & Wicklund, 1972). This reduction of self-awareness, in other words, cognitive narrowing, is one of the important types of escapes considered in escape models.

In the case of cognitive narrowing, the focus of attention is narrowed by focusing only on current ideas at hand, specific and low-level ideas, and refusing to think broadly and meaningfully (Baumeister, 1990a). In this state, meaningful interpretations such as attribution, comparison with standards, and the effect of behavior will no longer be difficult and negative emotions will be alleviated accordingly. It is possible to reduce or avoid the disgusting and negative emotions of an individual, which is felt due to heightened self-awareness, through cognitive narrowing. In other words, evidence of cognitive narrowing or cognitive dissolution may include concrete thoughts, immediate goals, and cognitive rigidity. In particular, there are many black and white logics that are characteristic of cognitive rigidity. But escape from these negative emotions also triggers a number of self-destructive behaviors, such as binge eating, and efforts to escape unpleasant emotions through cognitive narrowing can result in disrupting the usual restraint associated with food and committing irrational thinking. The more people try to avoid meaningful thinking, the less likely they are to be rational and less critical, and the more likely they are not to find any doubts of beliefs or conclusions.

The reason for irrational thinking or irrational cognition is that the normal pattern of reasoning was interrupted, resulting in a kind of mental void (Bauer & Anderson, 1989; Butterfield & Leclair, 1988). When a person is reluctant to think meaningfully, it becomes inefficient to critically evaluate new ideas as compared to everyday situations. Several cognitive distortions found in binge eaters, including faulty attributions, personalization, magnification, dichotomous thinking, filtering, overgeneralization, and magical thinking (Johnson, Connors & Tobin, 1987). Cognitive narrowing also prevents us from considering the long-term meaning of certain behaviors, for example causal thinking (Faver, 2004).

Among the various cognitive distortions caused by cognitive narrowing, the false attribution and the lack of causal thinking are particularly prominent, which is related to the error of pseudodiagnosticity bias. In other words, the false attribution caused by cognitive narrowing can be expected to lead to the cognitive error, such as error of pseudodiagnosticity.

2.3. Pseudodiagnosticity Bias

Pseudodiagnosticity is a misunderstanding of diagnosticity (Fischhoff & Beyth-Marom, 1983; Herr, Kardes & Kim, 1991), where diagnosticity refers to perceived relevance. Pseudodiagnosticity can be seen when people treat unrelated non-diagnostic information as relevant diagnostic information. The pseudodiagnosticity effect was first demonstrated in a study by Doherty et al. (1979), who interpreted this effect as a type of confirmatory bias. The discovery of pseudodiagnosticity was also confirmed in subsequent studies, in which a number of various variations of the task are used (Evans, Venn & Feeney, 2002; Mynatt, Doherty & Dragan, 1993).

Mynatt et al. (1993) developed the following pseudodiagnosticity task.

"Your brother has a car he bought a few years ago. You know the car is X or Y, but you don't remember exactly what it is. You remember that the car can go 25 miles on a gallon of fuel and know that no serious mechanical problems have been discovered in the last two years your brother owned the car. And you have the following information.

(A) 65% of brand X cars can go 25 miles on a gallon.

Three other additional information was given.

(B) the percentage (%) of Y-branded cars that can travel 25 miles on a gallon
(C) the percentage (%) of X-brand cars that will not find any serious mechanical problems when owning a car for two years
(D) the percentage (%) of Y-branded cars that will not find any serious mechanical problems when owning a car for two years

If you could choose only one of the above three information, what information would help you guess which brand of car your brother owns?"

According to the above findings, only 28% of respondents chose the correct answer B, 59% chose C and 13% chose D. Car X used in the study of Mynatt et al. (1993) is referred to as the pseudodiagnosticity task's the focal hypothesis, and people tend to focus on only one hypothesis and then only think about it afterwards by unconscious cues to its relevance to any hypothesis.

The following Bayes theorem has been regarded as a framework for evaluating observed data or evidence in relation to hypotheses.

$$\frac{P(H|D)}{P(\neg H|D)} = \frac{P(D|H)}{P(D|\neg H)} * \frac{P(H)}{P(\neg H)}$$

Where $P(H|D)/P(\neg H|D)$ is the posterior odds, $P(D|H)/P(D|\neg H)$ is the likelihood ratio, and $P(H)/P(\neg H)$

means prior odds, respectively. The above formula shows that the posterior probability for the focal hypothesis H after obtaining the new data D is the product of the likelihood ratio and prior odds for the focal hypothesis H. The larger the likelihood ratio, the more H can be diagnosed as evidence. People do not evaluate the relevance of the denominator P(D|¬H) well when evaluating the diagnosticity of the evidence (i.e., the likelihood). That is, people are not aware of the fact that the focal hypothesis H should evaluate the probability of data in cases where it is not true. Like this, 'not thinking of the opposite case' causes serious reasoning errors.

Cognitive narrowing to overcome negative emotions resulting from social exclusion can lead to failure to pay attention to alternative hypothesis, which can be expected to lead to cognitive errors called pseudodiagnosticity bias. In this study, the following hypotheses are set up to explore.

Hypothesis: Groups that have experienced social exclusion will have a higher degree of pseudodiagnosticity bias than those who do not.

3. Methods and Results

This study was conducted with 77 college students in Seoul. Participants were randomly assigned to the group who experienced social exclusion and the group who did not experience social exclusion. We analyzed how the degree of bias of pseudodiagnosticity differs according to the experience of social exclusion.

The manipulation of social exclusion experiences has utilized scenario manipulation methods for applying for membership (Wan, Xu & Ding, 2014). Participants were given a story and asked to read it carefully. and emphasized the importance of getting into the character's role and emotions while reading the story as if in the same event in real life. The scenario shows that the main character preparing for employment is eager to join SUCCESS, a job preparation club that provides solid information and effective learning strategies and boasts high employment success rates. It contains that the main character has submitted a membership application to the job preparation club 'SUCCESS'. Under social exclusion, the main character was contacted by the club a few days later that his application was denied. And under social inclusion, the main character was informed that the application was approved. Participants were asked to describe in detail their feelings after reading the story (Rucker, Dubois & Galinsky, 2011). Next, participants were asked to respond to manipulation check question about feelings of exclusion or neglect while describing the experience (1=strongly disagree, 7=strongly agree). The participants were then presented with a task related to pseudodiagnosticity and asked to resolve.

pseudodiagnosticity task was measured by the following procedure used in the study of Mynatt et al. (1993). First, participants were asked to read the following materials.

"You are going to buy a laptop through an online shopping store. You've already decided which brand of notebook to buy, now you are conducting an evaluation of A brand shopping store and B brand shopping store. The results of the Consumer Protection Agency's evaluation of Brand A and Brand B conducted last year were not disclosed, but randomly selecting the highest rated brand among the two brands showed that delivery time is within two days and the brand's customer satisfaction is more than 7 out of 10.

About 70% of the goods sold at brand A shopping store are delivered within two days."

Then, respondents performed the following requirements after being presented with the above data.

"Choose information that will help you determine which shopping store brand is rated the highest by the Consumer Protection Agency.
① Percentage (%) of the goods sold at brand B shopping store delivered within two days
② Percentage (%) of brand A's customers whose satisfaction is more than 7 out of 10.
③ Percentage (%) of brand B's customers whose satisfaction is more than 7 out of 10."

As revealed by the study of Mynatt et al. (1993), the highly diagnostic information in this case is ①. In other words, if ① is selected, pseudodiagnosticity bias is not shown. If ② and ③ are selected, pseudodiagnosticity bias is shown.

Participants' responses to the manipulation check question for social exclusion were averaged to form a manipulation check score (Wan et al., 2014). As expected, participants who were rejected (vs. accepted) by the job preparation club felt more excluded (M=5.02 vs. M=2.58; $t(75)=-11.417$, $p<.001$), confirming the success of the manipulation of social exclusion.

The results of analyzing the pseudodiagnosticity biases of the group who experienced social exclusion and the group who did not experience are as follows. As shown in the <Figure 1>, a group that has not experienced social exclusion has a ratio of 63.89% with 23 out of 36 members having chosen high-diagnostic information, whereas a group that has experienced social exclusion has a ratio of 39.02% with only 16 out of 41 members having experienced high-diagnostic information. The ratio

difference between the two groups was shown to be statistically significant ($\chi^2(1) = 4.741$, $p < .05$).

Since pseudodiagnosticity bias did not occur when high diagnostic information was selected, the occurrence of pseudodiagnosticity bias was more likely in the group who experienced social exclusion than in the group who did not experience social exclusion. These results support the hypothesis that the more social exclusion experiences, the more cognitive narrowing will occur and consequently more pseudodiagnosticity bias will occur.

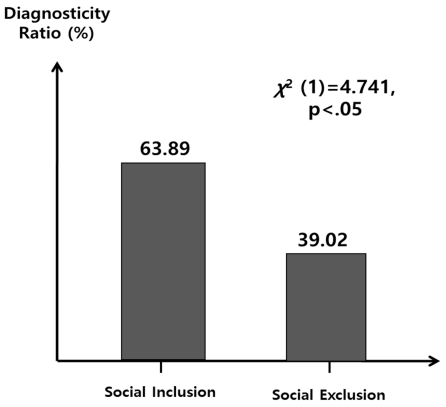

Figure 1: Social Exclusion and Pseudodiagnosticity

4. Conclusions

This study found that the incidence of pseudodiagnosticity bias in the group that experienced social exclusion was higher than that in the group that did not experience social exclusion.

Consumers try to pursue rationality in the decision-making process, but for many reasons they often fail to make rational decisions and make irrational decisions and judgments. Many studies focusing on these irrational aspects of consumers have various opinions on the causes and characteristics of consumers making irrational decisions and judgments. While there are views that the irrational aspect of consumers appears to be due to the inherent limitations of human cognitive ability (Kahneman & Tversky, 1982), There are also views that the appearance of irrational human beings actually has its own rationality (Gigerenzer, 2008). The former view explains that human efforts to make rational judgments and decision-making are often biased due to human cognitive limitations (Stanovich & West, 2000). Here, one of the theories explaining why humans fall into cognitive error despite human deliberate effort is the dual process model. According to this model, if system 1 of the two virtual brains or minds of human beings is activated, humans are more likely to fall into cognitive error. This model is known to form the basis on which system 1 can operate depending on the nature of the task to be processed, and the motivation of the person handling the task.

In this study, it was expected that cognitive error will occur when system 1 operates when cognitive narrowing occurs to overcome consumers' social exclusion experiences and negative emotions. In other words, this study focused on the experience of exclusion or rejection of consumers as well as the cognitive response strategy as a condition under which System 1 can operate. Previous studies have focused only on the fact that the negative emotions of consumers can cause cognitive narrowing, and this cognitive narrowing brings about various cognitive errors or cognitive distortions. This study was intended to anticipate and identify the mechanism by which error or bias would be in the operation of System 1. As shown in the results of this study, if the social exclusion experience causes cognitive narrowing and this causes cognitive errors through the operation of System 1, the occurrence of various cognitive biases in addition to the error of inferencing reasoning, social exclusion and cognitive biases. It seems to be explained by cognitive narrowing. In other words, this study explores how cognitive impairment caused by social exclusion experience can be explained through cognitive narrowing and how it affects consumer's judgment and reasoning and results pseudodiagnosticity bias. Therefore, this study can find theoretical implication in that it extends the concepts of evasive self-awareness, escape theory and cognitive narrowing used to explain addiction behavior such as obsessive buying to consumer's cognitive bias. In addition, the another theoretical implication is to identify the processes and mechanisms of individuals experiencing social exclusion through cognitive narrowing and dual process models.

In practice, this study can provide implications of marketing communication strategy. Consumers who are expected to experience a lot of social exclusion due to weak social ties and connections may be unable to evaluate information correctly due to pseudodiagnosticity bias. Pseudodiagnosticity bias can also occur when one cares about only one possible hypothesis, interprets ambiguous evidence in one sense, or classifies a new object into one category, excluding other possibilities. This bias leads consumers to conclude that their preferred product or advertisement is desirable. Consumers tend to pay attention to and collect only positive information about their favorite products, and they want to avoid negative information. Therefore, marketers of distribution brands need to understand the preferences and attitudes of the brands and products they have and then send messages that match their

existing attitudes towards distribution brands. And when sending conflicting messages, marketers need a gradual approach in timing and intensity.

In addition, a strong social tolerance means that an individual has the ability to control himself in a way that preserves himself and promotes his or her own interests in the long run, including performing a smooth cognitive activity in a positive emotional state. Social inclusion is also an important issue related to the health and welfare of individuals as well as the entire society. Therefore, various efforts will be needed to reduce social exclusion, discrimination and rejection to maintain a healthy social community as well as rational and sound consumer activities.

This study has limitations that the sample was collected only from college students, not consumers of various ages and occupations, and did not compare social exclusion and other measurement tools for cognitive narrowness. Finally, this study only examined the effects of social exclusion and cognitive narrowing on pseudodiagnosticity bias, however future studies need to explore various types of cognitive errors.

References

Baumeister, R. F. (1990a). Anxiety and deconstruction: On Escaping the Self, In J. M. Olson and M. P. Zanna (Eds), Ontario Symposium on Personality and Social Psychology. *Self-Inference Processes: The Ontario Symposium*, *6*(p. 259-291). Lawrence Erlbaum Associate, Inc.

Baumeister, R. F. (1990b). Suicide as Escape from Self, *Psychological Review*, *97*(1), 90-113.

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of Social Exclusion on Cognitive Processes: Anticipated Aloneness Reduces Intelligent Thought, *Journal of Personality and Social Psychology*, *83*(4), 817–827.

Bauer, B. G., & Anderson, W. P. (1989). Bulimic Beliefs: Food for Thought, *Journal of Counseling and Development*, *67*(7), 416-419.

Buckley, K., Winkel, R., & Leary, M. (2004). Reactions to Acceptance and Rejection: Effects of Level and Sequence of Relational Evaluation, *Journal of Experimental Social Psychology*, *40*(1), 14–28.

Butterfield, P. S., & Leclair, S. (1988). Cognitive Characteristics of Bulimic and Drug-abusing Women, *Addictive Behaviors*, *13*(2), 131-138.

Cacioppo, J. T., Hawkley, L. C., & Berntson, G. G. (2003). The Anatomy of Loneliness, *Current Directions in Psychological Science*, *12*(3), 71–74.

DeWall, N. C., Maner, J. K., & Rouby, A. D. (2009). Social Exclusion and Early-Stage Interpersonal Perception: Selective Attention to Signs of Acceptance, *Journal of Personality and Social Psychology*, *96*(4), 729–741.

Doherty, M. E., Mynatt, C. R., Tweney, R. D., & Schivao, M. D. (1979). Pseudodiagnosticity, *Acta Psychologica*, *43*(2), 11-21.

Duval, S., & Wicklund, R. A. (1972). *A Theory of Objective Self-Awareness*. San Diego, CA: Academic Press.

Eisenberger, N. I., Liberman, M. D., & Williams, K. D. (2003). Does Rejection Hurt? An fMRI Study of Social Exclusion, *Science*, *302*(5643), 290–292.

Evans, J. St. B. T., Venn, S., & Feeney, A. (2002). Implicit and Explicit Processes in A Hypothesis Testing Task, *British Journal of Psychology*, *93*(1), 31-46.

Faver, R. J. (2004). Self-control and Compulsive buying. In T. Kasser and A. D. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (p. 169-187). Washington: the American Psychological Association.

Filia, K. M., Jackson, H. J., Cotton, S. M., Gardner, A., & Killackey, E. J. (2018). What is Social Inclusion? A Thematic Analysis of Professional Opinion, *Psychiatric Rehabilitation Journal*, *41*(3), 183-195.

Fischhoff, B, & Beyth-Marom, R. (1983). Hypothesis Evaluation from a Bayesian Perspective, *Psychological Review*, *90*(3), 239-260.

Gigerenzer, G. (2008), *Rationality for Mortals: How People Cope with Uncertainty*. New York: Oxford Univ. Press.

Heatherton, T. F., & Baumeister, R. F. (1991). Binge Eating as Escape from Self-Awareness, *Psychological Bulletin*, *110*(1), 86-108.

Herr, P. M., Kardes, F. R., & Kim, J. (1991). Effects of Word-of-mouth and Product-attribute Information on Persuasion: An Accessibility - Diagnosticity Perspective, *Journal of Consumer Research*, *17*(4), 454-462.

Hoch, S. J. & Deighton, J. (1989). Managing What Consumers Learn from Experience, *Journal of Marketing*, *53*(2), 1-20.

Johnson, C., & Connors, M. E., & Tobin, D. L. (1987). Symptom Management of Bulimia, *Journal of Consulting and Clinical Psychology*, *55*(5), 668-676.

Kahnemann, D., & Tversky, A. (1982), *Judgment under Uncertainty: Heuristics and Biases*. New York: Cambridge Univ. Press.

Layous, K., Davis, E. M., Garcia, J., Purdie-Vaughns, V., Cook, J. E., & Cohen, G. L. (2017). Feeling Left out, But Affirmed: Protecting Against the Negative Effects of Low Belonging in College, *Journal of Experimental Social Psychology*, *69*(1), 227-231.

Mandel, N., Rucker, D. D., Levav, J., & Galinsky, A. D. (2017). The Compensatory Consumer Behavior Model: How Self-Discrepancies Drive Consumer Behavior, *Journal of Consumer Psychology*, *27*(1), 133-146.

Maner, J. K., DeWall, N. C., Baumeister, R. F., & Schaller, M. (2007). Does Social Exclusion Motivate Interpersonal Reconnection? Resolving the 'Porcupine Problem, *Journal of Personality and Social Psychology*, *92*(1), 42–55.

Mead, N. L., Baumeister, R. F., Stillman, T. F., Rawn, C. D., & Vohs, K. D. (2011). Social Exclusion Causes People to Spend and Consume Strategically in the Service of Affiliation, *Journal of Consumer Research*, *37*(5), 902–919.

Mynatt, C. R., Doherty, M. E., & Dragan, W. (1993). Information Relevance, Working Memory and the Consideration of Alternatives, *Quarterly Journal of Experimental Psychology*, *46*(4), 759-778.

Peace, R. (2001). Social Exclusion: A Concept in Need of

Definition?, *Social Policy Journal of New Zealand*, *16*(July), 17-36.

Pickett, C. L., & Gardner, W. L. (2005). The Social Monitoring System: Enhanced Sensitivity to Social Cues as an Adaptive Response to Social Exclusion, In Williams, K. D., Forgas, J. P., & Hippel, W. V. (Eds) Sydney Symposium of Social Psychology series. *The Social Outcast: Ostracism, Social Exclusion, Rejection, and Bullying*, (p.213-226). New York: Psychology Press.

Rucker, D. D., & Galinsky, A. D. (2011). Generous Paupers and Stingy Princes: Power Drives Consumer Spending on Self and Others, *Journal of Consumer Research, 37*(6), 1015-1029.

Silver, H. (1994). Social Exclusion and Social Solidarity: Three Paradigms, *International Labour Review*. *133*(5,6), 531–578.

Smith, E. R., Murphy, J., & Coats, S. (1999). Attachment to Groups: Theory and Management, *Journal of Personality and Social Psychology*, *77*(1), 94–110.

Stanovich, K. E., & West, R. F. (2000). Individual Differences in Reasoning: Implications for the Rationality Debate, *Behavioral and Brain Sciences*, *23*(5), 645-665.

Twenge, J. M., Baumeister, R. F., Dewall, N. C., Ciarocco, N. J., & Bartels, M. J. (2007). Social Exclusion Decreases Prosocial Behavior, *Journal of Personality and Social Psychology*, *92*(1), 55–66.

Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If You Can't Join Them, Beat Them: Effects of Social Exclusion on Aggressive Behavior, *Journal of Personality and Social Psychology*, *81*(6), 1058–1069.

Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2002). Social Exclusion Causes Self-Defeating Behavior, *Journal of Personality and Social Psychology*, *83*(3), 606–615.

Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2003). Social Exclusion and the Deconstructed State: Time Perception, Meaninglessness, Lethargy, Lack of Emotion, and Self-awareness, *Journal of Personality and Social Psychology*, *85*(3), 409 – 423.

Wan, E. C., Xu, J., & Ding, Y. (2014). To Be or Not to Be Unique? The Effect of Social Exclusion on Consumer Choice, *Journal of Consumer Research*, *40*(1), 1109-1122.