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The Influence Of Resource Scarcity And Childhood Socioeconomic Status On In-Group Inclusiveness

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THE INFLUENCE OF RESOURCE SCARCITY AND CHILDHOOD SOCIOECONOMIC
STATUS ON IN-GROUP INCLUSIVENESS

by

SPENCER T. DOBBS

(Under the Direction of Daniel Webster)

ABSTRACT

Millions of individuals worldwide are malnourished and without clean drinking water due to a lack of environmental resources. Resource scarcity is a ubiquitous ecological threat that significantly influences social cognition and behavior. For example, research on resource scarcity has shown that it significantly reduces in-group inclusiveness. In fact, when individuals are primed with resource scarcity, they are significantly less likely to categorize racially ambiguous others as belonging to their racial in-group. The current study aimed to extend this research by examining the impact of resource scarcity on in-group inclusiveness while also accounting for variations of early life environmental hardship (i.e., childhood socioeconomic status). Utilizing a life history theory framework, it was predicted that early life exposure to scarcity would moderate its influence on in-group inclusiveness. However, contrary to prior research findings, no significant effect of resource scarcity on in-group inclusiveness was observed. Additionally, there was no interaction between scarcity and childhood socioeconomic status on in-group inclusiveness. Implications and future directions are discussed.

INDEX WORDS: Resource scarcity, In-group inclusiveness, Life history theory, Childhood SES

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B.A., Auburn University, 2015

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MASTER OF SCIENCE

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TABLE OF CONTENTS

ACKNOWLEDGMENTS	2
LIST OF FIGURES AND TABLES.....	4
CHAPTER	
1 INTRODUCTION	5
Resource Scarcity.....	7
Life History Theory	11
Life History Theory and Resource Scarcity.....	14
Resource Scarcity, Life History Theory, and In-Group Inclusiveness	16
Current Research.....	18
2 METHOD	19
Participants.....	19
Materials	19
Procedure	21
3 RESULTS	24
4 DISCUSSION	27
Limitations and Future Directions	30
Conclusion	32
REFERENCES	34
APPENDICES	48

LIST OF FIGURES AND TABLES

Figure 1: In-Group Inclusiveness as a Function of Prime Condition	25
Figure 2: In-group Inclusiveness as a Function of Scarcity and Childhood SES	48
Table 1: Pattern Matrix for Childhood and Current SES Measures	34
Table 2: Frequency Table Showing Gender	48
Table 3: Frequency Table Showing Age	45
Table 4: Frequency Table Showing Education Level.....	46
Table 5: Frequency Table Showing Political Orientation.....	47

CHAPTER 1

INTRODUCTION

Humans naturally categorize themselves and others into groups. The tendency to partition and categorize oneself and others into distinguishable groups is an automatic, simplifying response to an otherwise nuanced and convoluted social world (Macrae & Bodenhausen, 2000; Wilder, 1986). That is, social categorization appears to be an adaptation that greatly reduces the cognitive effort required to process information about others (Macrae & Bodenhausen, 2000). Individuals often view social groups dichotomously, either as in-groups to which they belong or as out-groups to which they do not. The innate, dichotomizing process of partitioning the world into “us” versus “them” captures the evolutionary necessity of living and working with similar others (Baumeister & Leery, 1995). Given that for a large part of human evolutionary history networks of individuals mostly consisted of kin, it was likely advantageous to treat in-group members, or those categorized as “us”, more favorably than out-group members (Burnham & Johnson, 2005).

The categorization of others into in-groups and out-groups significantly influences and predicts the subsequent treatment of those individuals (Stangor & Leary, 2006; Tajfel, Billig, Bundy, & Flament, 1971). Individuals view in-group members more positively, attribute those positive characteristics to dispositional rather than situational factors, and trust in-group members more than out-group members (Hewstone, 1990; Yuki, Maddux, Brewer, & Takemura, 2005). Additionally, across multiple cultures children begin to show favoritism toward in-group members as opposed to out-group members at a young age (Bennett et al., 2004). Even when artificial groups are randomly created in a laboratory setting, such as in experiments utilizing the minimal group paradigm, individuals still preferentially treat in-group members more favorably,

such as by allocating more resources to in-group members than to out-group members (Tajfel et al., 1971). In-group bias has even been observed in non-human primates (Mahajan et al., 2011).

According to social identity theory, establishing in-groups, or clearly defined groups to which oneself belongs, forms the foundation of one's social identity, or self-concept, and is greatly intertwined with self-esteem and a sense of belonging (Everett, Faber, & Crockett, 2015; Tajfel & Turner, 1979; Turner, 1975). The intimate connectedness between self and group identification motivates individuals to maintain the positive integrity of their in-group, thus engendering vigilance toward potential contaminants to the group identity. In order to protect their social identity, individuals display an in-group overexclusion effect, or proclivity to categorize ambiguous targets as belonging to the out-group rather than the in-group (Castano, Yzerbyt, Bourguignon, & Seron, 2002; Leyens & Yzerbyt, 1992; Yzerbyt, Leyens, & Bellour, 1995). For example, when White participants are presented with 50/50 Black-White composite faces, they are significantly more likely to categorize those biracial individuals as belonging to their racial out-group rather than their racial in-group (Knowles & Peng, 2005).

The in-group overexclusion effect is a pertinent concern given the growing multiracial population in the United States. In fact, according to the 2010 U.S. Census, the multiracial population is growing significantly faster than the monoracial population, and that trend is expected to continue, and even double, through the year 2050 (Humes, Jones, & Ramirez, 2011; Jones & Bullock, 2012). Additionally, the largest percentage of multiracial individuals in the U.S. identify as being Black/White (Jones & Bullock, 2012). Therefore, understanding how multiracial individuals are perceived and categorized is of vast importance.

Rigorous research on in-group/out-group processes is laying the groundwork for more thoroughly understanding what precipitates and ultimately causes stereotyping, prejudice, and

discrimination. Nevertheless, relatively little is known about the dispositional and ecological factors underlying in-group inclusiveness and racial categorization of multiracial individuals. Given the growing multiracial population in the U.S., the tendency to exclude those of ambiguous status, and the propensity to differentially perceive and treat those assigned to an out-group, an investigation of the factors influencing biracial categorization specifically is necessary. One particularly important moderating variable that has been identified in the literature, as a factor in racial categorization, is resource availability (Rodeheffer, Hill, & Lord, 2012). However, there is currently a gap in the literature concerning the relationship between early-life environmental influence, resource availability, and in-group inclusiveness. Examining this relationship will provide a more detailed and nuanced understanding of in-group inclusiveness and multiracial person perception.

Resource Scarcity

Darwin (1859) noted that organisms are constrained by limited resources and environmental pressures that constantly shape their physical and cognitive architecture. Current evolutionary accounts of human behavior emphasize the importance of the environmental pressures faced by ancestral humans in establishing adaptive behavioral responses to recurring evolutionary problems (Buss, 2005). Early humans consistently faced food and water shortages throughout the environment of evolutionary adaptiveness, thus creating a recurring problem upon which survival and reproduction were contingent (Chakravarthy & Booth, 2004). Evolution would have favored individuals capable of operating effectively under such resource limited environmental conditions.

Although modern humans are not faced with ecological hardships identical to those endured by ancestral humans, resource scarcity is still a ubiquitous, cross-cultural component of

modern human existence. In 2014, it was estimated that 805 million individuals worldwide were malnourished due to food shortages and 750 million individuals were without sources of clean drinking water (Food and Agriculture Organization, International Fund for Agricultural Development, & World Food Programme, 2014; United Nations International Children's Emergency Fund & World Health Organization, 2014). Even developed nations such as the United States are not immune to resource concerns, as evidenced by the clean drinking water crisis in Flint, Michigan (Masten & McElmurry, 2016). In fact, just in the United States alone, there have been 33 documented recessions in the past 165 years (National Bureau of Economic Research, 2010). Even individuals who are relatively wealthy are constantly faced with indicators of resource scarcity in the marketplace (Lynn, 1991).

Given the evolutionary and contemporary ubiquity of resource scarcity, humans should have cognitive mechanisms in place to effectively navigate scarcity related concerns. Indeed, a plethora of research exists that examines and elucidates the effects of scarcity on human cognition and behavior (Mullainathan & Shafir, 2013; Shah, Mullainathan, & Shafir, 2012). For example, individuals experiencing poverty often show diminished cognitive capacity across a number of real-world and experimental situations (Mani, Mullainathan, Shafir, & Zhao, 2013). Resource scarcity influences cognitive capacity and decision making by focusing attentional resources on scarcity related cues (Shah, Mullainathan, & Shafir, 2012). In times when resources are scarce, automatically directing attention toward life sustaining resources is likely an adaptive attentional mechanism.

According to realistic group conflict theory, procurement of resources was often dependent on competitive success, in which early humans were constantly competing against other humans for limited resources (Jackson, 1993). Within this framework, real or perceived

competition for resources promotes hostility, conflict, and aggression between groups (Sherif, Harvey, White, Hood, & Sherif, 1961). For example, group conflict significantly increases when water sources are shared or scarce (Toset, Gleditsch, & Hegre, 2000). Additionally, research suggests that there is a strong association between American unemployment rates and negative views of immigrant groups and immigration more generally (Espenshade & Hempstead, 1996). That is, as job availability decreases, attitudes toward immigrants become increasingly negative as a function of perceived competition threat. Further experimental investigation primed participants with scarcity by presenting a prompt delineating the lack of jobs in their area followed by a detailed description of a fabricated immigrant group that could be perceived as potential employment competitors (Esses, Jackson, & Armstrong, 1998). Participants that were primed with scarcity and competition, as opposed to the control group, rated the non-existent immigrant group as having significantly less favorable characteristics, were less supportive of their potential immigration, and were less likely to support immigration programs that would provide indirect assistance to the group (Esses, Jackson, & Armstrong, 1998).

In times of ecological distress, our ancestors had to make efficient, practical decisions in order to survive. Individuals that were pragmatic and self, or in-group, oriented were likely better able to survive, or provide for their in-group, when resources were scarce. For example, when individuals are low in glucose, they show reductions in their willingness to help strangers but not family members (DeWall, Baumeister, Gailliot, & Maner, 2008). Indeed, research suggests that resource scarcity engenders a competitive orientation, in which individuals employ self-promotional strategies designed to meet motivational goals (Roux, Goldsmith, & Bonezzi, 2015). Consistent with this premise and previous research on in-group favoritism, when individuals are faced with scarcity, they are more likely to withhold resources from others, allocate fewer

resources to out-group members, and delegitimize out-group member need for resources (Petersen, Bang, Aarøe, Jensen, & Curry, 2014; Ross & Ellard, 1986; Skitka & Tetlock, 1991).

In addition to engendering preferential resource allocation to in-group members, Krosch and Amodio (2014) demonstrated that resource scarcity primes cause participants to perceive biracial faces as having accentuated out-group member features. That is, when primed with scarcity, White participants perceived biracial faces as being “Blacker” than control participants not primed with scarcity. Subsequently, these variations in face perception resulted in reduced resource allocation to the accentuated out-group faces (Krosch & Amodio, 2014). These results closely align with research suggesting that when individuals are made to feel threatened, they are more likely to categorize ambiguous biracial targets as Black as opposed to White (Miller, Maner, & Becker, 2010). Resource scarcity is an ecological threat that appears to narrow in-group boundaries as to increase exclusion of ambiguous others. Evolutionarily, more stringent inclusion criteria and significantly amplified vigilance toward out-group threats during times of scarcity could have preserved and protected valuable resources needed for oneself and in-group members whose status was known. Additionally, broadening in-group criteria as to openly include new individuals into the in-group, thus expanding group size, could be counterproductive to survival during times of ecological hardship. Indeed, Rodenheffer, Hill, and Lord (2012) exposed White participants to a resource scarcity prime consisting of images depicting economic hardship, a resource abundance prime, or a series of neutral images followed by 20 ambiguous biracial faces consisting of one White and one Black face averaged together. The participants were tasked with categorizing each biracial image as either White or Black to gauge racial inclusiveness. As predicted, the researchers found that exposure to scarcity related cues did result in participants restricting their in-group boundaries and categorizing more ambiguous targets as

belonging to their racial out-group (Rodenheffer, Hill, & Lord, 2012). Although this research investigated in-group inclusiveness using race, additional research suggests that the effect that scarcity has on in-group inclusiveness is not restricted to racial groups. For example, a recent experiment found a similar in-group overexclusion effect for homosexual and heterosexual individuals when asked to categorize targets with ambiguous sexual orientation following exposure to scarcity primes (Vaughn, Cronan, & Beavers, 2015). Therefore, the constricting effect that resource scarcity has on in-group boundaries might reflect a more global, adaptive mechanism for limiting in-group access during times of ecological hardship.

The evolutionary imperative of navigating resource limited environments crafted and preserved adaptive cognitive and behavioral proclivities. However, an adaptive response is only as successful as it is functionally suited to the specific environmental demands placed upon the individual. Aligned with this premise, research suggests that cognitions and behaviors are often shaped by previous experiences (Blair & Raver, 2012; Ein-Dor, Mikulincer, Doron, & Shaver, 2010; Ross & Hill, 2002). Responses to environmental cues of resource scarcity, therefore, should manifest as a function of their applicability to past as well as present environmental situations (Griskevicius et al., 2013). Similarly, the effects of resource scarcity on in-group inclusiveness are likely contingent upon the specific constellation of environmental demands and constraints endured by the individual throughout the lifespan.

Life History Theory

Organisms must effectively navigate their resource limited terrain with evolutionary success hinging on appropriate allocation of time, energy, and resources. Human and non-human animals would have had a survival or reproductive advantage due to their ability to efficiently manage and allocate valuable resources. Evolutionary biologists developed life history theory as

a framework to understand how organisms prioritize resource expenditure, such as energy and time, throughout the lifespan (Kaplan & Gangestad, 2005). Any developmental or behavioral expenditure is going to carry with it particular trade-offs that subsequently influence survival and reproductive success (Del Giudice, Gangestad, & Kaplan, 2015). Overall, the collective behaviors regarding resource trade-offs constitute the individual's life history strategy.

The developmental trajectory of growth, maturation, and reproduction have been pivotal considerations within this framework (Griskevicius, Delton, Robertson, & Tybur, 2011; Hill & Kaplan, 1999). For instance, in ecological conditions of pervasive threat, in which prolonged survival is uncertain, investing resources in early sexual maturation could greatly improve the likelihood of passing genes on to the next generation. Moreover, different ecologies can demand different cognitive, developmental, and behavioral approaches; thus, life history strategies vary as a function of the ecological demands placed on the organism. That is, experiences early in life calibrate appropriate responses in order to optimize success within those particular environmental circumstances (Ellis, Figueredo, Brumbach, & Schlomer, 2009). In this way, life history strategies are shaped by the prevailing environment in order to properly align behavior to environmental demand.

Life history strategies have been conceptualized as existing on a fast to slow continuum with faster or slower strategies being engendered by early-life experiences (Ellis et al., 2009; Griskevicius, Delton, et al., 2011; Kaplan & Gangestad, 2005; Promislow & Harvey, 1990). Humans are regarded as having relatively slow life-history strategies, characterized by slow development, long lifespan, prolonged juvenile dependence on parental care, and high investment in offspring (Griskevicius, Delton, et al., 2011; Kaplan, Hill, Lancaster, & Hurtado, 2000). However, certain environmental contingencies can speed up this strategy to better

acclimate the individual to their environmental demands. A faster life history strategy is forged in environments of ecological threat or unpredictability and employs strategies to correspondingly optimize life history trade-offs in such environmental conditions (Ellis et al., 2009). For instance, fast life history strategies are associated with faster rates of development, earlier onset of puberty, greater number of sexual partners, earlier age of reproduction, greater number of offspring, increased risk-taking behavior and impulsivity, and reduced parental investment (Del Giudice, Gangestad, & Kaplan, 2015; Ellis et al., 2009; Griskevicius et al., 2013). Fast and slow life history strategies should, therefore, not be considered universally adaptive or maladaptive without consideration of environmental context.

According to sensitization models of life history theory, early life environments are a critical period of development that sensitize individuals to develop life history strategies that specifically manifest within certain environmental conditions, such as when facing adversity (Griskevicius et al., 2013; Griskevicius, Tybur, Delton, & Robertson, 2011). Early-life experiences construct a preparatory framework to understand and predict the likelihood of encountering similar events later in life (Nettle, Frankenhuys, & Rickard, 2013). That is, childhood experiences shape individuals' schematic understanding of the world and modulate their behavioral repertoire accordingly (Ross & Hill, 2002). However, schemas need not always be utilized in every situation but instead are often only activated by specific environmental triggers. Sensitization models of life history theory suggest that early life experiences shape life history strategies, but that these different strategies often remain dormant until faced with adversity. Indeed, research suggests that differences in fast and slow life history strategies do not necessarily manifest in innocuous circumstances, rather the expression of these strategies is often contingent upon currently experiencing environmental stressors (Griskevicius, Tybur, et al.,

2011; White, Li, Griskevicius, Neuberg, & Kenrick, 2013). Responses to resource scarcity, therefore, should not be invariable. Thus, responses to scarcity should not be considered dichotomously as either rational or irrational. Rather, responses should vary considerably and be optimized for managing resources within the environment in which the person developed (Frankenhuis & de Weerth, 2013). Therefore, recurrently enduring economic hardship or uncertainty in childhood should propel individuals down different life history trajectories that manifest in differential responding primarily in current conditions of environmental uncertainty or hardship (Ellis et al., 2009).

To experimentally test this hypothesis, Griskevicius, Delton, et al. (2011) predicted that stressful early life environments cause individuals to develop fast life history strategies that specifically emerge in contexts of uncertainty. Early-life environmental stress was assessed by measuring the participants' perceived childhood socioeconomic status (SES). Participants were then exposed to mortality cues and later given a questionnaire gauging their preferences on reproductive timing. In the control condition, individuals showed no temporal differences in their reproductive preferences. However, and in congruence with life history theory, when participants were exposed to mortality cues, those who had experienced greater early-life environmental stress indicated a preference for having children more quickly, whereas those who had experienced relatively less childhood environmental stress expressed a preference for a greater temporal delay before having children. Therefore, it was concluded that mortality cues have a markedly different effect on individuals' reproductive preferences as a function of their childhood environments (Griskevicius, Delton, et al., 2011).

Life History Theory and Resource Scarcity. In follow-up studies, researchers have built upon the application of life history theory to test how different life history trajectories

influence behavior under resource scarce conditions. Early life unpredictability, for example, appears to improve rather than impair certain aspects of executive functioning under scarce conditions (Mittal, Griskevicius, Simpson, Sung, & Young, 2015). Additionally, a series of experimental studies demonstrated that priming individuals to think about resource scarcity causes divergent responses as a function of economic hardship endured during childhood (Griskevicius et al., 2013). Participants were exposed to a resource scarcity prime, such as an article describing economic uncertainty, and then given a series of tasks designed to measure risk-taking behavior and temporal discounting. To measure previous exposure to economic hardship and unpredictability, childhood SES was assessed for each participant with low childhood SES being predictive of a fast life history strategy. As expected, childhood SES mapped onto participants' respective fast or slow life history strategies, such that when under resource scarce conditions, participants from low childhood SES households took greater risks and engaged in greater temporal discounting. The observed increase in risk-taking behavior was related to an increase in oxidative stress resulting from the resource scarcity prime (Griskevicius et al., 2013). Indeed, this research is consistent with previous findings demonstrating that individuals of low childhood SES are more likely to display behaviors consistent with a fast life history strategy, such as increased preference for risk-taking and reduced delayed gratification, following mortality primes (Griskevicius, Tybur, et al., 2011). Although typically considered maladaptive behaviors, taking risks and preferring smaller immediate payouts, rather than larger future payouts that may never come, could prove beneficial in environments of pervasive hardship and uncertainty.

Additional research also suggests that sense of control during times of economic uncertainty is dependent on childhood environment (Mittal & Griskevicius, 2014). Individuals

from poorer backgrounds, relative to those from wealthier backgrounds, have significantly lower perceptions of personal control over environmental outcomes, but only after being primed with scarcity. Furthermore, differences in sense of control statistically mediated the observed differences in impulsivity and delayed gratification observed in individuals from poorer and wealthier backgrounds following resource scarcity primes (Mittal & Griskevicius, 2014). Fast or slow life history strategies in response to resource scarcity, therefore, are at least partially a product of an individual's perception of their ability to effectively control their environment in times of uncertainty.

Resource Scarcity, Life History Theory, and In-Group Inclusiveness

Although much research has investigated life history theory and resource scarcity, relatively little is known about its role regarding in-group inclusiveness. Previous research has demonstrated that resource scarcity significantly reduces willingness to grant in-group status to ambiguous targets (Rodenheffer, Hill, & Lord, 2012; Vaughn, Cronan, & Beavers, 2015). One explanation for this finding is that it was evolutionarily beneficial to be exclusive rather than inclusive during times of scarcity. Unconstrained inclusiveness for ancient humans combatting ecological distress could have been detrimental to survival. However, adding to a preexisting in-group during times of scarcity is not necessarily counterproductive to resource management.

Expanding in-group boundaries during times of scarcity could have been an adaptive strategy to gain loyal allies and establish long-term reciprocal relationships. For example, research indicates that resource scarcity greatly increases the likelihood of reciprocity, specifically for those most impacted during times of scarcity (White, 2014). For those with a strong ability, or perceived ability, to procure resources and control their environment during hardship or uncertainty, generously offering help to others could have resulted in the long-term

benefits of gaining a loyal ally who is then highly likely to reciprocate those generous behaviors. Additionally, appeals that imply a desire for a long-term relationship are highly likely to engender reciprocity, but only if those appeals are not perceived as being manipulative (White, 2014). Opening in-group boundaries during times of scarcity could have reduced the risk of appearing manipulative while providing an adaptive avenue to ensure reciprocal returns in future occurrences of resource scarcity.

Perceptions of effective strategies to optimize personal gain in resource limited environments should depend on life history strategies forged early in life. Similar to the finding that scarcity can promote selfish or generous behaviors depending on perceptions of personal gain, in-group inclusiveness should vary as a function of the individual's life history (Roux, Goldsmith, & Bonezzi, 2015). Low childhood SES engenders a fast life strategy characterized by an immediate, rather than future, orientation (Griskevicius, Tybur, et al., 2011; Griskevicius et al., 2013; Mittal & Griskevicius, 2014). For these individuals, granting access into the in-group when resources are noticeably limited would likely be viewed in terms of immediate losses of resources rather than the potential long-term gains of establishing an exchange relationship characterized by reciprocal long-term payoffs. Furthermore, and in congruence with realistic group conflict theory, individuals from low childhood SES also espouse a lower sense of control during times of scarcity and should display heightened threat vigilance characterized by a reduced willingness to grant in-group status to ambiguous targets (Mittal & Griskevicius, 2014; Sherif et al., 1961). However, individuals from high childhood SES typically have a higher sense of control during times of ecological distress and are likely able to see scarcity in terms of available personal gains rather than losses that must be mitigated. Therefore, individuals from

high childhood SES are likely to display the opposite tendency of categorization of ambiguous targets.

Current Research

The purpose of the study was to address the gap in the literature concerning the relationship between resource scarcity and in-group inclusiveness from a life history perspective. To bridge this gap, the current study tested the novel prediction that childhood SES moderates the previously observed effect that resource scarcity has on the categorization of ambiguous social targets. Rodenheffer, Hill, and Lord (2012) found that White participants were significantly more likely to categorize ambiguous biracial faces as belonging to their racial out-group after viewing images depicting scarcity as opposed to neutrally valenced images. However, differences in categorization as a function of early life environments was not investigated. The current study extended this previous research on resource scarcity and in-group inclusiveness while investigating it within a life history framework. It was predicted that individuals primed with resource scarcity would categorize fewer biracial targets as belonging to their racial in-group. Furthermore, it was predicted that individuals who experienced greater hardship in childhood, compared to those who experienced relatively less economic hardship, would be significantly impacted by indicators of resource scarcity and subsequently be more likely to categorize ambiguous biracial others as belonging to their racial out-group rather than in-group. Given the growing multiracial population, it is imperative to understand the relevant factors that underlie and potentially impact the way multiracial individuals are perceived in society. The current experiment was designed to help elucidate how multiracial individuals are perceived during economic hardship as well as add to the extant literature on intergroup processes (Kite & Whitley, 2016).

CHAPTER 2

METHOD

Participants

Three hundred participants from Amazon's Mechanical Turk (MTurk) were recruited for this study. Each participant eighteen years of age or older, a United States resident, and had an MTurk Approval Rate of 90% or higher. All participants completed the study in exchange for the monetary reward of US\$0.50. In order to replicate and extend previous research, only data from White participants were utilized for this study (Rodenheffer, Hill, & Lord, 2012). Two hundred and thirty-one participants identified themselves as White. Nine of these participants were excluded from the analysis due to failure to pass the attention checks throughout the study. In total, data from 222 participants were used for analysis. The age of participants ranged from 18-77 years ($M = 38.33$, $SD = 12.89$) with 141 females and 81 males.

Materials

Participants were primed with a resource scarcity passage or given a control passage to read. In the resource scarcity condition, participants ($N = 109$) read a previously established short news passage depicting a recently laid off college graduate and an unstable, harsh economic climate (see Appendix A). Previous research has utilized this resource scarcity manipulation to prime environmental uncertainty, reduced job availability, and general economic threat (Hill, Rodeheffer, Griskevicius, Durante, & White, 2012; White, Kenrick, Neel, & Neuberg, 2013). In the control condition, participants ($N = 113$) read a short passage previously used by White et al. (2013) that describes the tedious task of organizing and decluttering a disorganized office space (See Appendix B).

Perceived childhood SES was assessed by using a scale that has been previously used by researchers to test the effect of perceived childhood SES on risk taking, temporal discounting, executive functioning, diversification, and sense of control (Griskevicius et al., 2013; Griskevicius, Tybur, Delton, & Robertson, 2011; Mittal & Griskevicius, 2014; Mittal et al., 2015; White et al., 2013). Perceived childhood SES was measured by asking participants to indicate their level of agreement, using a 7-point Likert-scale, with each of the following statements: “My family usually had enough money for things when I was growing up,” “I grew up in a relatively wealthy neighborhood,” and “I felt relatively wealthy compared to the other kids in my school” (See Appendix C). The mean score was 3.84 ($SD = 1.49$), which is slightly below the midpoint of the scale. The internal consistency among these items was $\alpha = .83$, which is consistent with previous research (Griskevicius, Tybur, et al., 2011). Scores were averaged across the three statements to produce an overall score representing childhood SES for each participant.

Current SES was assessed by using a scale previously utilized by researchers to test the effect of current SES on risk taking, temporal discounting, diversification, and sense of control (Griskevicius et al., 2013; Griskevicius, Tybur, et al., 2011; Mittal & Griskevicius, 2014; White et al., 2013). Current SES was measured by asking participants to indicate their level of agreement, using a 7-point Likert-scale, with each of the following statements: “I don’t think I’ll have to worry about money too much in the future”, “I have enough money to buy things I want”, and “I don’t need to worry too much about paying my bills” (See Appendix D). The mean score was 3.84 ($SD = 1.59$), which is slightly below the midpoint of the scale. The internal consistency among these measurements was $\alpha = .87$, which is consistent with previous research (Griskevicius et al., 2014). Scores were averaged across the three statements to produce an

overall score representing current SES for each participant. Childhood SES and current SES measures were weakly correlated ($r = .22$). Consistent with previous research, a factor analysis of each SES items revealed two factors with significant eigenvalues. Factor one (2.84) accounted for 47% of item variance and mapped onto the three items assessing current SES, whereas the second factor (1.79) accounted for 29% of item variance and mapped onto the three items assessing childhood SES (See Table 1).

Procedure

The study was completed online using Amazon's Mechanical Turk. Participants viewed the experiment as a HIT on MTurk which they could complete in order to earn a small monetary reward. Upon opening the HIT, participants read a brief description of the experiment and then clicked on a link to the survey that immediately redirected them from MTurk to the Qualtrics page dedicated to the experiment. To begin, participants were asked to read and sign an informed consent document detailing their rights as participants (See Appendix G). In order to prevent awareness of the true research goal of the study, participants were ostensibly told that the purpose of the study was to investigate several independent processes such as verbal memory and visual processing. The cover story that was used was adapted from previous research on the effects of resource scarcity and mortality cues on temporal discounting, sense of control, and categorization of targets with ambiguous sexual orientation (Griskevicius et al., 2013; Griskevicius, Tybur, et al., 2011; Mittal & Griskevicius 2014; Vaugh, et al., 2015). Participants could discontinue their participation in the study without negatively impacting their MTurk Approval Rating by selecting that they did not wish to continue or by directly closing out of their browsing window at any point during the experiment.

Participants who agreed to continue the study were then counterbalanced into two conditions to control for any potential unintended interaction between the resource scarcity prime and participants' perception of past or current SES. In the first condition, participants were asked several demographic questions (See Appendix F). Next, participants responded to scales assessing perceived childhood SES (See Appendix C) and current SES (See Appendix D). In the second condition, demographic, childhood SES, and current SES measures were administered following the dependent measure. Next, participants were randomly assigned to either the resource scarcity condition or the control condition. Each participant was informed that they were going to be presented with a short passage and were to imagine themselves in the described scenario. Participants were asked to attend closely to the information included in the passage because they would be asked questions about it at a later point in the experiment. In the resource scarcity condition, participants read a passage describing a harsh economic climate characterized by scarce resources and a limited, competitive job market (See Appendix A). In the control condition, participants read a neutral passage describing the process of decluttering and categorizing a disorganized office space (See Appendix B). The resource scarcity and control passages were successfully used previously by White et al. (2013) to prime resource scarcity and serve as a neutral control prompt. Next, to maintain consistency with the cover story and prevent suspicion of the true nature of the experiment, participants were asked to write a few brief sentences describing the passage that they just read.

Following the memory task, participants were told that they would be moving into the visual processing portion of the experiment in which they would be shown a series of faces and be asked to categorize each as either Black or White. Participants were then shown 20 randomly ordered biracial faces previously established in the literature as racially ambiguous (See

Appendix E; Rodeheffer, Hill, & Lord, 2012). To assess in-group inclusiveness, participants were given a forced choice task, in which they were required to categorize each biracial face as either Black or White. The number of faces categorized as Black, representing the participants' racial out-group, served as the dependent measure for in-group inclusiveness. After completing the biracial categorization task, participants were given an attention check consisting of a multiple-choice question concerning the thematic nature of the passage that they had previously read. In addition, participants were given a suspicion check to determine if they believed the cover story and whether or not they were aware of the true nature of the experiment. Participants were then debriefed as to the true purpose of the experiment (See Appendix H). All use of deception was delineated during the debriefing and participants had the opportunity to withhold their data from analysis.

CHAPTER 3

RESULTS

The focus of this experiment was to examine the relationship between exposure to resource scarcity cues and in-group inclusiveness as a function of childhood economic hardship. To examine the effect resource scarcity primes had on in-group inclusiveness, a general linear model approach was utilized. The statistical analyses implemented were similar to those used in Experiment 1 and Experiment 2 by Griskevicius and colleagues (2013). Prime condition (resource scarcity or control) was dummy-coded and entered into the model as a categorical variable, childhood SES (centered) was entered as a continuous variable, and the number of faces categorized as belonging to the racial out-group was entered as the dependent variable. To account for a potential interaction between the order of the demographic, childhood SES, and current SES measures and the independent variable, the order in which these measures were administered was counterbalanced. That is, participants either filled out these measures before or after exposure to the resource scarcity or control passage. Counterbalance condition was entered into the model as a potential covariate. However, there was no statistically significant interaction of counterbalance condition, prime condition, and current SES, $F(1,214) = .398, p = .529, \eta_p^2 = .002$, or childhood SES, $F(1,214) = .793, p = .374, \eta_p^2 = .004$. Therefore, counterbalance condition was not included as a covariate in subsequent analyses.

It was predicted that there would be a main effect of prime condition and childhood SES as well as a significant interaction between prime condition and childhood SES. Contrary to what was hypothesized, the analysis yielded no significant main effect of prime condition on in-group inclusiveness, $F(1,218) = .689, p = .407, \eta_p^2 = .003$, such that participants primed with resource scarcity did not categorize significantly more biracial faces as belonging to their racial out-group

($M = 9.14$, $SEM = .39$) than participants who read a control passage ($M = 8.69$, $SEM = .40$; See Figure 1). There was also no main effect of childhood SES on in-group inclusiveness, $F(1,218) = .806$, $p = .370$, $\eta_p^2 = .004$.

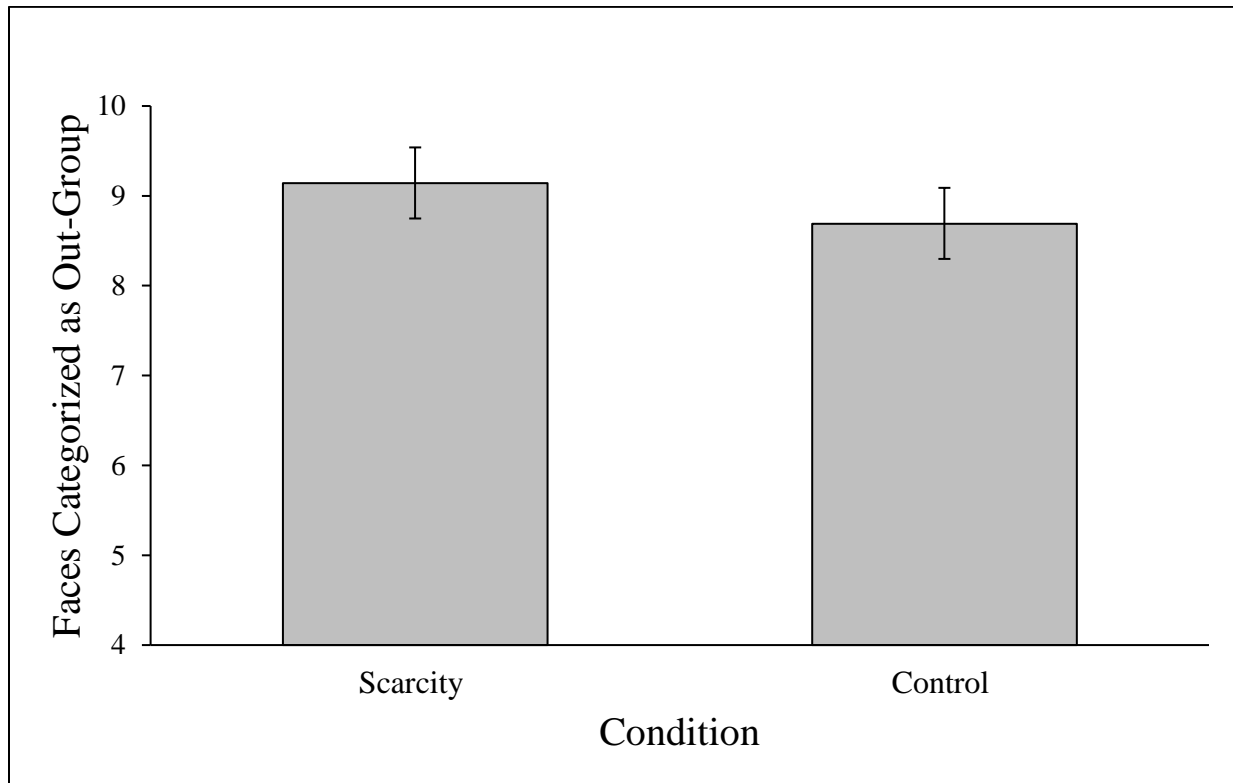


Figure 1. In-group inclusiveness as a function of prime condition. The mean number of faces categorized as Black is represented on the y-axis and prime condition is represented on the x-axis. No statistically significant differences emerged from the analysis. Error bars reflect standard error of the mean.

Furthermore, the model did not reveal the expected interaction between prime condition and childhood SES on in-group inclusiveness, $F(1,218) = .018$, $p = .895$, $\eta_p^2 = .000$. Participants who read the resource scarcity or control passage did not differentially categorize biracial targets as belonging to their racial out-group as a function of their childhood SES. For graphical purposes, childhood SES was dichotomized into high and low childhood SES representing one standard deviation above and below the mean (See Figure 2). In the resource scarcity condition,

those from high childhood SES categorized an average of 9.84 ($SD = 2.64$) faces as belonging to their racial out-group, whereas those from low childhood SES categorized an average of 8.84 ($SD = 3.24$). In the control condition, those from high childhood SES categorized an average of 9.88 ($SD = 3.74$) faces as belonging to their racial out-group, whereas those from low childhood SES categorized an average of 9.73 ($SD = 3.94$). It was also predicted that there would be no main effect of current SES or interaction between prime condition and current SES on in-group inclusiveness. As predicted, current SES had no main effect on in-group inclusiveness, $F(1,218) = 2.609$, $p = .108$, $\eta_p^2 = .012$. Additionally, and expectedly, no interaction between prime condition and current SES on in-group inclusiveness emerged from the analysis, $F(1,218) = .580$, $p = .447$, $\eta_p^2 = .003$.

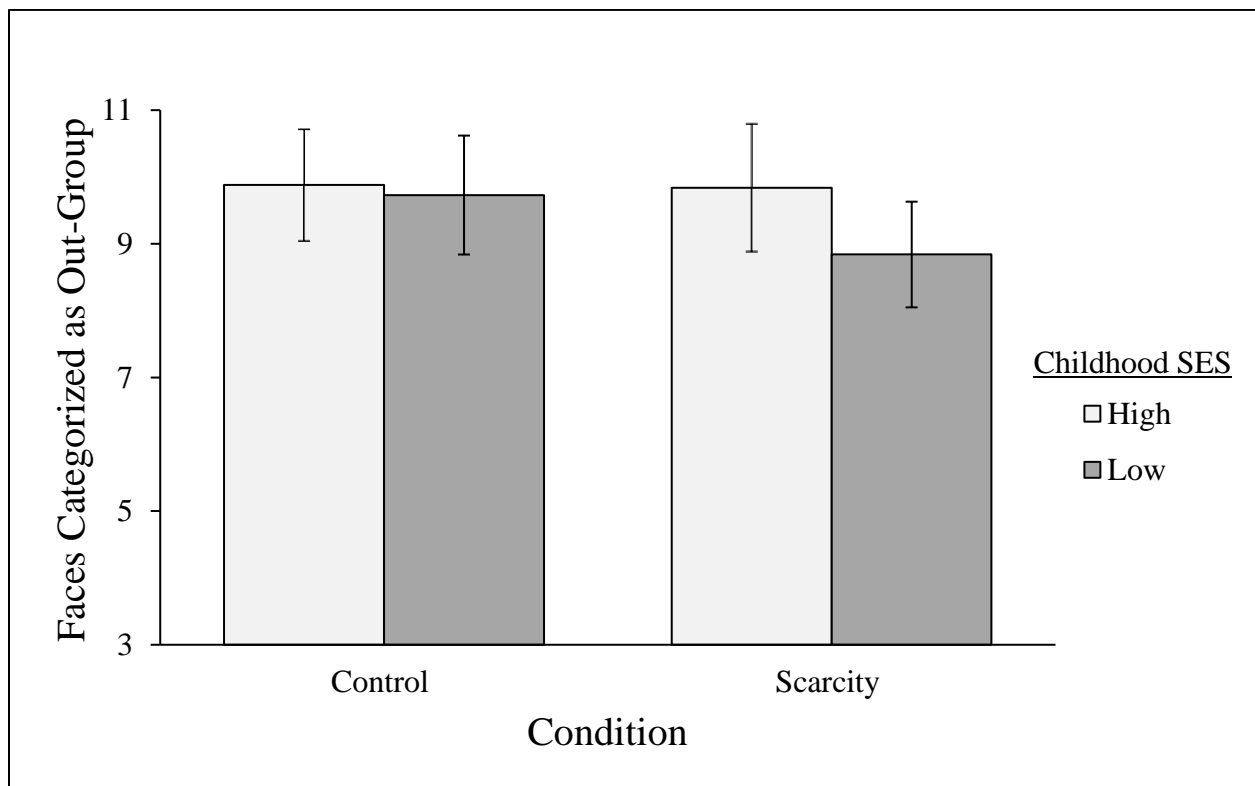


Figure 2. In-group inclusiveness as a function of resource scarcity and childhood SES (High childhood SES = 1 SD above the mean for childhood SES; Low childhood SES = 1 SD below the mean for childhood SES). Error bars reflect standard error of the mean.

CHAPTER 4

DISCUSSION

The current study was designed to examine the relationship between resource scarcity and in-group boundary formation. Specifically, this study aimed to extend previous literature by investigating the interplay between resource scarcity and childhood socioeconomic status in relation to racial in-group inclusiveness. It was hypothesized that resource scarcity primes would engender an in-group overexclusion effect, in which individuals who read passages depicting economic hardship would be more likely to categorize ambiguous biracial faces as belonging to their racial out-group. However, results revealed no statistically significant relationship between resource scarcity and in-group inclusiveness. That is, individuals who read a passage priming resource scarcity did not subsequently categorize more ambiguous biracial targets as belonging to their racial out-group than did individuals who read a control passage. It was also hypothesized that there would be an interaction between prime condition and childhood SES. It was predicted that individuals from low childhood SES would categorize significantly more biracial faces as belonging to their racial out-group than would individuals from high childhood SES, but only when primed with resource scarcity. Contrary to this hypothesis, no statistically significant interaction was observed. Across experimental and control conditions, individuals did not differentially categorize biracial images as a function of their current or perceived childhood socioeconomic status.

The findings from this experiment are inconsistent with previous research regarding resource scarcity and in-group inclusiveness. The extant literature suggests that resource scarcity has a constricting effect on in-group boundaries, such that when individuals are primed with indicators of scarcity, they are significantly less likely to grant in-group status to ambiguous

others. In two separate experiments using two distinctive resource scarcity primes, Rodenhoffer, Hill, and Lord (2012) demonstrated that White participants were significantly more likely to categorize ambiguous biracial faces as Black in a forced choice task when first primed with resource scarcity. In an extension of this research, Vaughn, Cronan, and Beavers (2015) demonstrated through multiple experiments that sexual majority and minority members were far less likely to categorize ambiguous others as belonging to their sexual in-group following resource scarcity primes. In both sets of experiments, a moderate resource scarcity prime, such as an anagram completion task or brief PowerPoint presentation, successfully produced a constricting effect on in-group boundary formation. In the present study, a more intense resource scarcity prime was used, which could account for the incongruence between the current study and previous research.

According to the situated inference model, priming does not cause a direct, automatic impact on an individual's behavior or judgments; rather, the effects of a prime are largely dependent on the contextual affordances of the environment or situation that the individual is in (Loersh & Payne, 2011; Loersh & Payne, 2014). Primes can flexibly influence behavior and perception by making particular concepts or schemas highly accessible and therefore highly likely to be utilized to meet environmental demands. Importantly, if the concepts activated by a prime are misattributed as an intrinsic response to a stimulus in the current environment, rather than a mere product of the prime alone, then those concepts or schemas are significantly more likely to have an impact on perception and behavior (Loersh & Payne, 2011; Loersh & Payne, 2014). That is, primes that produce cognitive changes that are easily confused with natural responses to environmental scenarios are often more effective. Resource scarcity primes can be understood as activating concepts, such as competitiveness, that are related to scarcity (Roux,

Goldsmith, & Bonezzi, 2015). As previous research on resource scarcity and in-group inclusiveness would suggest, those activated concepts are highly likely to influence the categorization of ambiguous biracial targets. Due to their ambiguous status, biracial targets might not automatically elicit a specific, distinctive, or predetermined response. If ambiguous social targets do not invariably elicit particular concepts or schemas, then concepts activated by resource scarcity primes could easily be misattributed as having been engendered by those ambiguous individuals and subsequently influence perception.

However, according to this model, concepts activated by very extreme primes are less likely to be misattributed to the current situation (Loersh & Payne, 2011; Loersh & Payne, 2014). Since, moderate primes have a greater capacity to be misattributed as one's own intrinsic response, they could have greater potential to influence cognition and behavior. For example, Herr, Sherman, and Fazio (1983) found that primes of extremely gentle and extremely ferocious animal exemplars later led to evaluations counter to the primed concept, whereas moderate exemplars led to evaluations consistent with the theme of the prime. In the current study, it is possible that the nature of the resource scarcity prime was too extreme and consequently diminished its validity.

Given that the expected discrepancy between the resource scarcity and control conditions did not emerge, it is difficult to interpret the results within the framework of life history theory. The sensitization model of life history theory suggests that early life environments predispose individuals to respond in particular ways when facing recurring adverse environments (Griskevicius et al., 2013). For example, individuals have been shown to differentially respond to mortality threats and resource scarcity cues as a function of their early life exposure to environmental hardship (Griskevicius et al., 2011; Griskevicius et al., 2013; Mittal &

Griskevicius, 2014; Mittal et al., 2015; White et al., 2013). In this experiment, it is not possible to definitively state that the resource scarcity prime was sufficient to create an environmental context in which any differences in life history strategies would have emerged. Therefore, future research is needed to uncover and account for any potential interaction among resource scarcity, childhood environment harshness, and in-group inclusiveness.

Limitations and Future Directions

One limitation to this study could have been the resource scarcity prime that was used. Although an attention check was included in the study to ensure that participants read and remembered the prime, it is uncertain whether or not, and to what degree, the prime exerted an effect. It is possible that participants did not find the prime relevant to today's society, as it referenced the economic decline of 2008. Alternatively, and as previously stated in the context of the situated inference model, it is also possible that the prime was too extreme. Based on this model, it could be predicted that nuanced, moderate primes might have the greatest subsequent effect on cognition and behavior. Indeed, this prediction would be consistent with previous research which demonstrated that brief PowerPoint presentations and anagram completion tasks successfully primed scarcity and resulted in an in-group overexclusion effect, whereas the lengthy passage describing extreme economic hardship that was used in this experiment did not. Future research should investigate varying levels of extremity of resource scarcity primes on in-group inclusiveness. Furthermore, the flexibility afforded by this model also lends itself to the original prediction that childhood SES might moderate the effect that scarcity primes have on in-group boundary formation. It could be predicted that individuals from high childhood SES differentially misattribute scarcity primes when compared to individuals from low childhood SES.

Additionally, a possible limitation to this study is that it was conducted using MTurk. Although research suggests that data collected on MTurk reasonably compares to data collected in the lab, it remains a relatively new way of conducting psychological research (Crump, McDonnell, & Gureckis, 2013). Participants completed this study in a variety of contexts that could have influenced their responses. In a laboratory environment, more experimental control is possible and internal validity would likely be higher. However, it is also worth noting that previous research has successfully used MTurk as an experimental medium to prime resource scarcity and examine its effects on in-group inclusiveness.

Another limitation to this experiment is a lack of pilot testing for the control passage. Although this passage has been used as a control in previous research, it is unclear whether or not this particular passage elicited any negative valence (White et al., 2013). It is possible that the resource scarcity and control passages elicited similar physiological responses that confounded the results. Future research could account for this by implementing a resource scarcity passage, a passage pilot tested and matched for negative valence, and a pilot tested, neutrally valenced control passage. An experiment of this nature would allow for a more detailed understanding of whether the reduced willingness to welcome others into an in-group following a resource scarcity prime results from the activation of concepts specific to scarcity or reflects a more general byproduct of a physiological stress response.

Furthermore, it is imperative to acknowledge that no experimental design is capable of entirely circumventing the necessary tradeoffs between experimental specificity and real-world applicability. In this experiment, participants were faced with a contrived forced choice task that required categorizing biracial individuals in a dichotomous way. However, it is entirely possible that given the opportunity, participants would have categorized targets as being biracial rather

than Black or White. Therefore, responses recorded in this experiment might not accurately reflect individuals' real-world perception or categorization of biracial individuals. Subsequently, while this experimental design may have been aptly suited for examining the influence of resource scarcity on individuals' general willingness to grant in-group status, it may have been poorly suited for accurately predicting the real-world perception and treatment of biracial individuals during periods of economic hardship.

Conclusion

The current study contradicts, and perhaps challenges, previous research on resource scarcity and in-group inclusiveness, thus adding to the existing literature on the replicability and reproducibility of research findings in psychology (Ioannidis, 2005; Open Science Collaboration, 2015). Given that this area of research is still in its infancy, it is possible that any effect that scarcity has on in-group boundary formation is not as robust as was previously believed. Indeed, unsuccessful attempts at replication and extension are often discounted, unseen, or simply not reported (Rosenthal, 1979; Scargle, 2000). Therefore, additional research is required in order to address this problem and elucidate the precise nature of the relationship between resource scarcity and in-group inclusiveness.

Overall, the findings from this experiment provide a unique perspective on resource scarcity and intergroup processes. As the world's population continues to become increasingly diverse, and as natural resources continue to be exhausted at an exponential rate, a more thorough understanding of the role of resource availability in social cognition and behavior is exceedingly necessary. Although inconsistent with previous research, this study adds to the existing psychological landscape concerning in-group inclusiveness, resource availability, and multiracial person perception, while also providing an impetus for new experimental studies to

be done. Future research should continue to investigate the role of resource availability with regard to group formation and intergroup processes as well as continue to examine the factors which precipitate, maintain, and ameliorate stereotyping, prejudice, and discrimination across social groups.

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TABLE 1*Rotated Pattern Matrix – Childhood and Current SES Measures*

Measurement Item	Factor 1: Current SES	Factor 2: Childhood SES
My family usually had enough money for things when I was growing up	.005	.835
I grew up in a relatively wealthy neighborhood	-.037	.866
I felt relatively wealthy compared to other kids in my school	.037	.897
I have enough money to buy things I want	.888	.008
I don't need to worry too much about paying my bills	.893	-.022
I don't think I'll have to worry about money too much in the future	.893	.016

Extraction method: Principal Components Analysis

Rotation Method: Direct Oblimin

TABLE 2*Frequency Table Showing Gender*

Gender	Frequency	Percent	Cumulative Percent
Male	81	36.5	36.5
Female	141	63.5	100.0

TABLE 3*Frequency Table Showing Age*

Age	Frequency	Percent	Cumulative Percent
18-25	26	11.7	11.7
26-30	55	24.8	36.5
31-35	34	15.3	51.8
36-40	29	13.1	64.9
41-45	22	9.9	74.8
46-50	12	5.5	80.3
51-55	16	7.2	87.5
56-60	11	5.0	92.5
61-65	9	4.0	96.5
66-70	1	0.4	96.9
71-77	7	3.1	100.0

TABLE 4*Frequency Table Showing Education Level*

Education	Frequency	Percent	Cumulative Percent
Some high school	1	.5	.5
High School/GED	29	13.1	13.5
Some college credit	37	16.7	30.2
Trade/technical/vocational	8	3.6	33.8
Associates	25	11.3	45.0
Bachelors	84	37.8	82.9
Masters	27	12.2	95.0
Professional	7	3.2	98.2
Doctorate	4	1.8	100.0

TABLE 5*Frequency Table Showing Political Orientation*

Political Orientation	Frequency	Percent	Cumulative Percent
Very Liberal (1)	33	14.9	14.9
(2)	42	18.9	33.8
(3)	25	11.3	45.0
Moderate/Neutral (4)	55	24.8	69.8
(5)	23	10.4	80.2
(6)	29	13.1	93.2
Very Conservative (7)	15	6.8	100.0

APPENDIX A

RESOURCE SCARCITY PRIME

Less than a year ago Jonathan Pierce had a stable, well-paying job. Having earned a college degree, Jon was doing well at age 30. He had a steady paycheck and liked his job. He enjoyed his colleagues and workplace and was looking forward staying with the company for a long time. Having worked at the company for several years already, he even believed he was about to be promoted.

Today, however, Jon is yet again standing in the dreary unemployment line downtown. No longer dressed in his suit and tie, today he is wearing sweatpants with hole in the knee and a ratty t-shirt. “I didn’t think this could happen to me,” he mutters while shaking his head. “I have a college degree and I can’t even get a job interview, let alone a job. I’m facing foreclosure on my house and I am late on my car payments. I just don’t know where the money is going to come from. I feel like I lost everything in this downturn and I have no idea how I’m going to get back onto my feet.”

This depressing scene is not unique. Unemployment lines are full across the country. “The numbers are staggering,” notes Oliver Windsor, the head of the U.S. Economic Commission. And it’s not just blue-collar jobs like construction and food service that are being cut. It’s the white-collar jobs like management and office work that are being hit the hardest.” According to Windsor, “Even when the crash happened in 2008, no one thought that things would be this bad for this long. Things are worse than anyone can remember and the truly horrifying thing is that the worst is not over yet, not by a long shot.” Unfortunately, there is little that the government can do to remedy the situation. As every economist knows, while government bailouts can slow the bleeding, it can’t fix the underlying problems.

The economic crisis is only the beginning of the new reality faced by Americans. After decades of economic growth, experts agree that the U.S. is on the verge of an economic shift. “The economy of the 21st century is fundamentally different from that in the past,” explains Dr. Patricia Wharton, chair of the panel for U.S. Economic Stability. “The sad truth is that this generation is certain to be the first generation to do worse than their parents. And their parents aren’t going to fare too much better as they head into retirement with little to no money. The housing bubbles, bank crises, skyrocketing food and energy prices, and the credit crisis only begin to scratch the surface of our economic problems. Instead of college graduates wondering whether they will be able to afford a flat screen TV, they’ll soon be wondering where their next

meal is going to come from, how they'll clothe themselves, and how they can possibly afford a place to live.”

The fact Americans should expect to have little economic advancement is only part of the imminent economic disaster. Skyrocketing worldwide population growth and scarcity of natural resources are both working together to transform the U.S. economy. To understand how these factors are changing life for Americans, Oliver Windsor, one of 80 leading scientists who contributed to the government report, reminds us of the basics: “There are literally billions of people out there competing with each other. And these people are not just competing for jobs. The truth is that they're competing for food, water, and air.”

While it may be difficult for some to imagine that the U.S. might one day be in poverty, the world in the 21st century is highly inter-connected. Things that happen in China, India, and Africa have tremendous consequences for what happens in the rest of the world. As the people across the globe gain skills and opportunities, competition for scarce jobs and resources will only increase. As necessities, such as safe food, drinkable water, and breathable air become scarcer and more expensive, the world as I know it will become a very different place. Instead of walking into a supermarket and buying a gallon of water for under a dollar, consumers may soon be spending as much as \$10 for only a small bottle of clean water.

Watching Jonathan Pierce wait in the unemployment line downtown, one can't help but be reminded of the Great Depression—a time in American history that most people only remember from their history classes. The images of the Depression are difficult to erase: Malnourished children begging for food, people standing in line all day to get a slice of bread and a cup of soup, everyone struggling to feed themselves and their families. The sad truth for people like Jonathan Pierce and countless others is that losing a job is only the beginning. Tough times are ahead.

APPENDIX B

CONTROL PASSAGE

Imagine you are at your desk at work. It's been a pretty hectic few days and as you look around at your things, you realize that everything is completely disorganized. You decide that you need to organize your workspace before things get any worse. Your first target is the empty coffee cup and leftover pastry from breakfast. You go to throw them both in the trash, but your garbage can is already full. You sigh. It seems you need to take your trash out to the dumpster before you can get started organizing things. After taking out the trash, you come back to your office and throw away all the junk that has accumulated on your desk over the past few days.

Next up is organizing all of the loose papers that are strewn over your desk. You have several new clients and you decide to put their papers in separate, color-coded folders. You seem to be out of folders, so you find a coworker to borrow some from. Now you can finally begin to organize these papers. You have 5 new clients and unfortunately, your coworker gave you five identical folders. Based on past experience, you know that it is good to make each client's folder distinctive so that you can grab their folder quickly on your way out the door. You remember you have some alphabet label stickers in your drawer and you take them out. You've used A previously, so you take B, C, D, E and F out.

None of your clients have a last name that starts with B. But Mrs. Jones first name is Becca. So, you paste the B label on a folder and place Mrs. Jones' paperwork into the folder. Next is C. Mr. Crawford fits just nicely, and you put his papers into the C folder.

Again, you do not have any clients with a last name beginning with D. But you have Mr. Oliver, and D kind of looks like O. So, D for Mr. Oliver. Now you have Mrs. Edwards and Mr. Andrew left. Mrs. Edwards goes with E, but there isn't really any connection between Mr. Andrew and F. An idea hits you and you pick up a marker, drawing a vertical line down the right of the letter F on the label. Now it looks like an A, A for Andrew. With all the clients' paperwork organized, things are looking much better. You file the folders away in your desk drawer and breathe a sigh of relief.

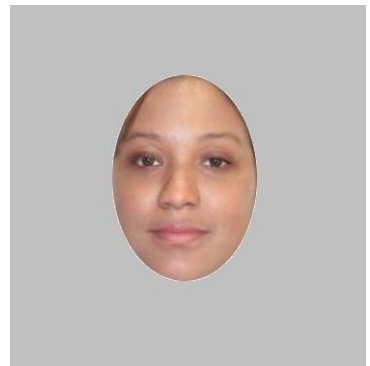
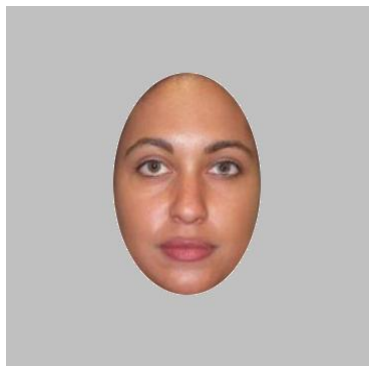
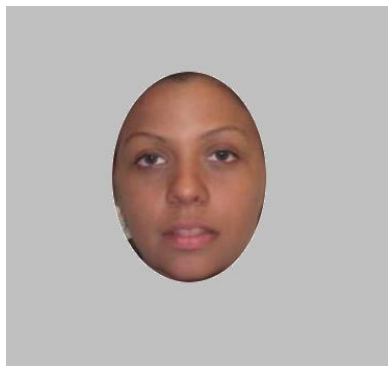
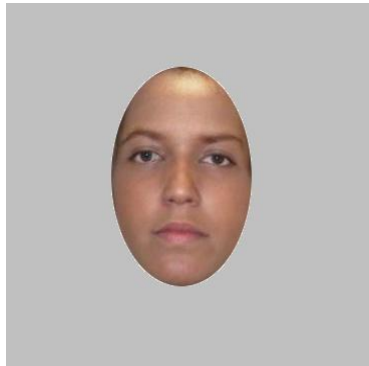
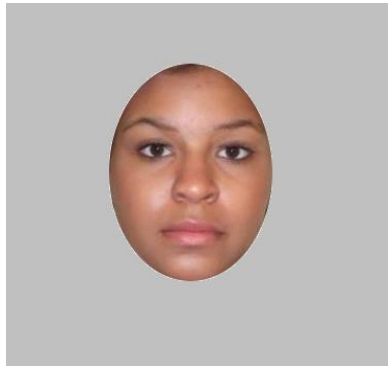
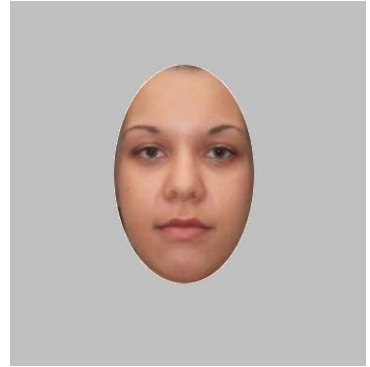
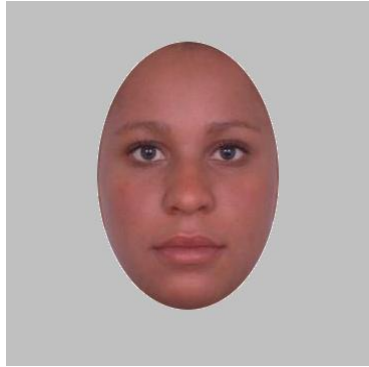
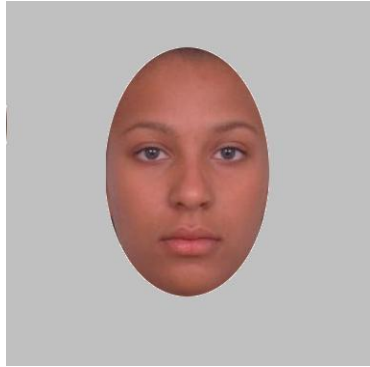
Now that you have everything for your clients in order, you can turn your attention to the large stack of books on the edge of your desk. These books need to be put back on the bookcase. Since you've been organizing things so efficiently this morning, you decide it's time to organize your bookcase too. You clear the top shelf of all of the books, and put them back on, reordering them according to their size. You put the tallest book to the far left of the shelf, and keep adding

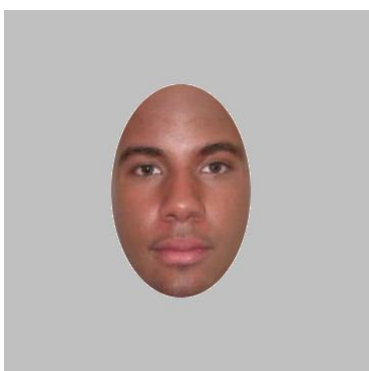
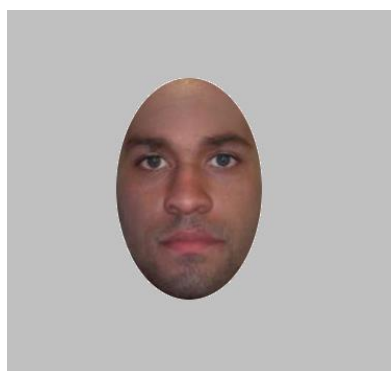
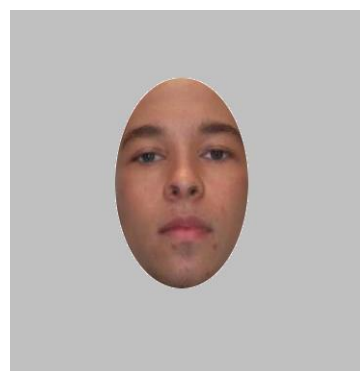
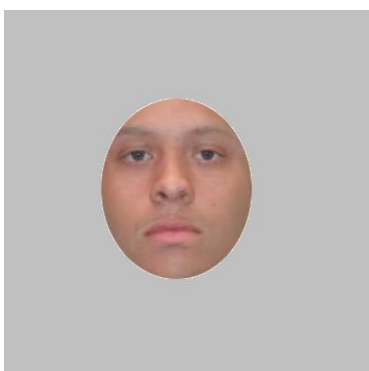
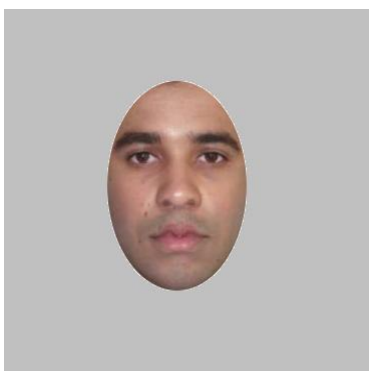
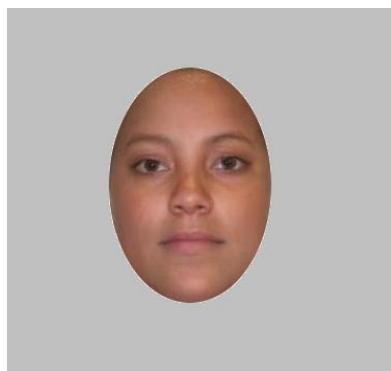
shorter books to the right of the first one, until there are no more books left. On the second shelf, you put your three-ring binders, and then miscellaneous notebooks and folders. On the lower shelf, you have some leisure books. You decide to just organize these books by size too so that everything looks nice.

As you are putting the books back, you remember about an important phone call that you need to make later in the afternoon. You go to your desk to jot down a reminder. As you grab a pen for the top desk drawer, you notice that it is also a little unorganized. You grab up all of your loose pens, pencils, paper clips, rubber bands, staples, tacks, and binder clips and place them on top of your desk. You remember that you have a tray with several different-size compartments that will fit into this drawer. You slip the tray into the drawer and begin separating out all of the office supplies. The binder clips are too big for the tray, so you decide to put them in a clear jar. Everything else fits perfectly into the tray and you close the drawer with a smile. You take a moment to look around the room and are pleased at how much better everything looks.

After you are finished, you begin to realize how much time you've spent organizing things. You feel a little bad about not doing any of the other work that you have to do, but you know that this organization will help you get things done better and more efficiently in the long run. Your mind already feels a bit clearer and more focused. You feel like you're ready to tackle all the tasks that face you for the rest of the day. You jot down the reminder about the afternoon phone call and place it next to your computer monitor. Now you are ready to get some work done.

APPENDIX E
AMBIGUOUS BIRACIAL IMAGES





APPENDIX F**DEMOGRAPHICS**

You will now be asked several demographic questions. Please answer each question honestly and to the best of your ability. Please click “Yes, I understand” to continue to the survey questions.

- Yes, I understand
- No, I do not wish to continue

1. What is your gender?

- Male
- Female

2. What is your age? (In years)**3. What is your race/ethnicity? (Check all that apply)**

- African American
- Asian
- Caucasian
- Hispanic
- Native American
- Pacific Islander
- Other (not listed)
- I prefer not to respond

4. What is the highest degree or level of school you have completed?

- Some high school, no diploma
- High school degree/GED
- Some college credit, no degree
- Trade/technical/vocational training
- Associate degree
- Bachelor’s degree
- Master’s degree
- Professional degree
- Doctorate degree

APPENDIX G

INFORMED CONSENT

Welcome to Verbal Memory, Visual Processing, and Attention!

On the next page, you will be viewing the Informed Consent, which describes your rights as a participant. Before beginning, please note the following:

- 1. You must be at least 18 years of age or older and a United States resident to participate in this study.**
- 2. You have the right to withdraw at any time during the experiment. Completion of this study is completely voluntary and you may discontinue at any point.**
- 3. You have the right to ask questions concerning the experiment. Any questions can be addressed to the principal investigator, Spencer Dobbs (sd04483@georgiasouthern.edu).**

Please click the arrows at the bottom right of the screen in order to continue.

INFORMED CONSENT

Memory, Visual Processing, and Attention

1. This study is being conducted by Spencer Dobbs, graduate student in psychology, and Dr. Dan Webster, associate professor of psychology at Georgia Southern University.
2. Purpose of Study: The purpose of this study is to investigate how people attend to and remember verbal information as well as attend to and process visual information. Since the validity of the results of the study could be affected if the purpose of the study is fully divulged prior to my participation, some details of this study may not be made known until the session is complete. A complete explanation of the study's purpose will follow completion of the study. At the completion of this session, you have the option of withholding your responses from subsequent analysis.
3. Procedures to be followed: Participation in this research will include answering demographic questionnaires, reading and answering questions about specific passages, and viewing and answering questions about specific images.
4. Discomforts and Risks: Participation in this experiment should not cause or result in physical injury, invasion of privacy, threat to dignity, or psychological distress. If any stress or discomfort is encountered during this experiment, you have the right to withdraw at any time. To withdraw please just close out of the survey window or select "No, I do not wish to continue" when the option is available. If you chose to withdraw, your data will not be used for the experiment and your MTurk approval rating will not be impacted.
5. Benefits: Through participation in this research, you may gain a better understanding of how research is conducted in psychology as well as a better understanding of memory, visual processing, and attention. The results of the study may provide psychologists with a better understanding of the processes involved in memory and visual attention.

6. Duration/Time Required: This study will require 30 minutes or less.

7. Statement of Confidentiality: Your responses in this experiment will be confidential. Your responses will only be identified through an identifier number, not your name. Your MTurk worker IDs will not be shared with anyone. Your data will be stored in a secure place that is accessible only to researchers directly involved with the lab. The data will be maintained for at least three years. Deidentified or coded data from this study may be placed in a publicly available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions. Your identity will be protected to the fullest extent of the law.

8. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact the principle researcher, Spencer Dobbs at sd04483@georgiasouthern.edu. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at [912-478-5465](tel:912-478-5465).

9. Compensation: You will receive \$0.50 for the completion of this study. At the end of the study, you will receive a code that you will enter into the original HIT. Once you do, \$0.50 will be credited to your MTurk account. All work should be reviewed and credit received within one week of completion.

10. Voluntary Participation and Right to Withdraw: Because your participation in this study is voluntary, you may decline to answer a question or withdraw from participation at any time. Although you may discontinue the experiment at any time, only fully completed responses will be eligible for compensation.

11. You must be 18 years of age or older to consent to participate in this research study. You also must be a current United States resident to participate in this study. By completing this survey, you consent that you are at least 18 years of age, a current resident of the United States, and that you understand your rights.

This project has been reviewed and approved by the Georgia Southern University Institutional Review Board under tracking number H17346.

Title of Project: Memory, Visual Perception, and Attention

Primary Investigator: Spencer Dobbs

Co-Investigator: Daniel Webster

PO Box 8041

Georgia Southern University

Statesboro, GA 30460

Email: sd04483@georgiasouthern.edu; dwebster@georgiasouthern.edu

"I have read the terms above, and I understand my rights as a participant"

Yes

No

APPENDIX H

DEBRIEFING FORM

Thank you for participating in this study! This form provides background about our research to help you learn more about why we are doing this study. Please feel free to ask any questions or to comment on any aspect of the study.

You have just participated in a research study conducted by Spencer Dobbs and Dr. Daniel Webster at Georgia Southern University.

You were told that the purpose of this study was to measure performance on memory, visual processing, and attention. In actuality, we are interested in determining if cues of economic hardship will influence participants' categorization of ambiguous biracial faces. We are particularly interested in testing whether this relationship is influenced by childhood socioeconomic status. In this experiment, you either read a passage describing tough economic times or a control passage describing organizing a cluttered office space. The passage that you might have read on economic uncertainty was adapted from an article originally published in 2008 and does not necessarily describe or accurately reflect today's economic climate. In order to protect the integrity of this research, we could not fully divulge all the details of this study at the start of the procedure.

As you know, your participation in this study is voluntary. If you so wish, you may withdraw after reading this debriefing form, at which point all records of your participation will be destroyed.

We expect to do follow-up experiments that will continue into future semesters. Because of this, it is important that you do NOT talk (or write or e-mail, etc.) about this project with others. The main reason for this is that your comments could influence the expectations, and therefore, performance of a future participant, which would bias our data. Failure to comply with this request may have severe repercussions with regard to the accuracy of the data. Sharing information could compromise months of hard work preparing this experiment and other future experiments. We hope you will support our research by keeping your knowledge of this study confidential.

You may print a copy of this debriefing for your records. Contact information for the researcher and the Georgia Southern University IRB is also on the informed consent document. If you would like a copy of the informed consent, please email Spencer Dobbs and he will reply to your request promptly.

If you have questions about the research please e-mail Spencer Dobbs, sd04483@georgiasouthern.edu. If, as a result of your participation in this study, you experienced any psychological distress or adverse reaction, please contact SAMHSA Treatment Referral Helpline at 1-877-726-4727 or the National Suicide Prevention Hotline at 1-800-273-8255.

Primary Investigator: Spencer Dobbs

Co-Investigator: Daniel Webster
PO Box 8041
Georgia Southern University
Statesboro, GA 30460
Email: sd04483@georgiasouthern.edu; dwebster@georgiasouthern.edu

“I acknowledge that I have read the debriefing form, and I would like to submit my responses for the study”

- Yes, submit my responses
- No, remove my responses