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Does Intergroup Threat Cause Distinct Contact Orientations for High and Low Status Groups?

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DOES INTERGROUP THREAT CAUSE DISTINCT CONTACT ORIENATIONS FOR
HIGH AND LOW STATUS GROUPS?

By

BRIAN M. JOHNSTON

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2016
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This manuscript has been read and accepted for the Graduate Faculty in Psychology to satisfy the dissertation Requirement for the degree of Doctor of Philosophy.

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Abstract

DOES INTERGROUP THREAT CAUSE DISTINCT CONTACT ORIENTATIONS FOR HIGH AND LOW STATUS GROUPS?

By

BRIAN M. JOHNSTON

Advisor: Demis E. Glasford, PhD

A variety of groups, such as White and Latino Americans, predominantly live in segregated clusters. This is evident by looking at demographic data in the U.S., and often occurs in the absence of legal mandates. To explain why segregation occurs, this dissertation developed a theoretical model with hypotheses on how perceiving a threat to ingroup resources could cause segregation behaviors, but with unique behaviors for high and low status groups. Whites (high status) could view Latinos as a threat to jobs, for example, and be motivated to avoid Latinos. Latinos (low status) could similarly view Whites as a threat to jobs, but instead be motivated to approach other Latinos. Further, this model proposed that regulatory focus motivations, such as concern over preventing economic losses (i.e., prevention focus) or promoting economic gains (i.e., promotion focus), would explain group avoidance and approach. Broadly, this model hypothesized that threat perceptions would increase prevention focus for high status groups, and this would explain outgroup avoidance. On the other hand, the model hypothesized that threat perceptions would increase promotion focus for low status groups, and this would explain ingroup approach.

This model was tested in two studies that balanced external and internal validity. Study 1 focused on threat perceptions of White and Latino Americans, using a news article to manipulate threat perceptions in an online setting, with self-report measures of regulatory focus and group
contact. Study 2 focused on threat perceptions of competitive teams, using monetary points to manipulate both status and threat perceptions in a laboratory setting, with self-report and behavioral measures. Analyses across studies used structural equation modeling, with findings providing mixed support to the present model. Specifically, results demonstrated that threat perceptions could cause high status groups (Whites and teams with more points) to avoid a threatening group, approach their own group, and a promotion focus (in employment and points) explained these segregation behaviors. However, threat perceptions did not cause low status groups (Latinos and teams with fewer points) to engage in segregation behaviors. The discussion addresses how these results contribute to understanding segregation; implications for theories on intergroup threat, contact, and regulatory focus; and implications for decreasing segregation in applied contexts, such as neighborhoods, schools, and workplaces.
Acknowledgments

One of my earliest memories is my sister, Kristy Johnston, reading me Dr. Seuss, specifically *Green Eggs and Ham*. It was the first book I learned to “read”, meaning I memorized the dialogue for each picture. Eventually, I literally read it, and that more or less opened the door to me falling in love with reading. So Kristy and Dr. Seuss are responsible for this dissertation, at least indirectly. There were mediating variables along the way, far too many to name, but I’ll do my best. Timothy Johnston, my brother, thank you for all of the videogames, from childhood to just a few days ago. It’s given me the nostalgic camaraderie and creative drive to get through a dissertation. More recently, Demis E. Glasford, my dissertation advisor, thank you for the guidance, parsimony, and theory. Without Demis, this dissertation would likely be just a garble of statistics. It still is, partly, but there’s more to it now because of Demis. My committee members – Tracey A. Revenson, Daryl A. Wout, Curtis D. Hardin, and Masi Noor – thank you for the feedback; if anyone thinks my writing is clear, it’s largely because of my committee. I take the blame for the obfuscation. Ira J. Roseman, thank you for introducing me to social psychological research. J. Lawrence Aber and Ed Seidman, thank you for your candid insight on academic careers. Brittany Johnston, my wife, thank you for always listening to my practice presentations and still attending the actual presentations. In the spirit of *They Came Together*…Brittany…thank you. My graduate student colleagues – at Rutgers, CUNY, and NYU – thank you for the friendship and drinks; Leighann Starkey, I managed to get Dr. Seuss into my dissertation, the same not-that-kind-of doctor that we are now. And cheers to all of my other friends and family that are too numerous to list.

Mom, you can call me doctor now.
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Chapter 1: Introduction

Host citizens and immigrants, White and Black Americans, and Christians and Muslims are but a few high and low status groups that remain segregated. This is readily evident by looking at demographic data within nations, such as the U.S. (Cable, 2013) and U.K. (Cantle et al., 2001). Further, this can be seen in everyday behaviors with individuals, such as racial self-segregation on college campuses (Hehman et al., 2012; Koen & Durrheim, 2009). Despite diversity, groups are primarily in segregated clusters. Why do groups avoid contact with one another? To address this question, this dissertation proposes and tests a theoretical model on how perceiving a group to be a threat could explain high and low status group segregation.

Perceiving another group as a threat to resources could explain lack of contact between high and low status groups, as indicated by contemporary and historic examples. A recent example – media reports demonstrate that many White Americans view Latino Americans as a threat to their jobs (Davidson, 2012) and have distanced themselves from this outgroup, indicated by desires to keep Latinos out of their neighborhoods (Frey, 2012). Similarly, many Latinos view Whites as a barrier to job opportunities, but rather than avoiding Whites, have approached their ingroup, indicated by working with other Latinos to obtain otherwise unavailable employment (Archibold, 2010). Though a different behavior, this also conceivably contributes to segregation. These contact reactions also do not appear to be unique to Whites and Latinos, but rather can apply to various high and low status group situations involving a threat to resources. In the historic Brown v. Board of Education Supreme Court case, for instance, White Americans perceived Black Americans to be a threat to their educational resources and vice versa. Whites responded with outgroup avoidance, indicated by advocating for continued school segregation (Glaserud, 1977), but organizations, such as the NAACP, rallied with ingroup
approach, as seen with Black parents coming together to participate in the lawsuit (Linder, 2011). These reactions may have the same net effect of segregation, but they are undergirded by unique orientations – high status (White) avoidance of the outgroup, but low status (Latino or Black) approach of the ingroup, which seem to be explained by threat perceptions.

Threat could explain high and low status segregation behaviors, but there are currently a number of theoretical gaps in relating the threat and contact literatures, and neither literature fully addresses low status groups. First, although theories on intergroup threat (e.g., Stephan, Ybarra, & Morrison, 2009) have been applied to conflicts similar to the above examples, the threat literature has primarily focused on prejudice outcomes, rather than contact. Second, most of the contact literature emphasizes contact as a cause of intergroup outcomes (e.g., Whites’ contact with Latinos causing decreased prejudice) rather than an outcome itself. Those that have explored contact as an outcome have not done so with threat perceptions as a cause (Binder et al., 2009). Further, both the intergroup threat and contact literatures focus predominantly on high status groups (see meta-analyses by Pettigrew & Tropp, 2006; Riek, Mania, & Gaertner, 2006). This is problematic as low status groups have less access to resources, which could cause unique perceptions of threats to resources (e.g., as more unfair; Schnabel & Ullrich, 2013). Different high and low status perceptions could, in turn, influence segregation responses, such as Latinos approaching their ingroup when threatened, as opposed to Whites avoiding an outgroup when threatened (Davidson, 2012; Frey, 2012). Therefore, threat as an explanation of contact is incomplete without including low and high status perspectives. Taken together, the threat literature typically does not explain contact, the contact literature typically does not include antecedents to contact, and neither literature fully addresses low status group behaviors. An understanding of what motivates the full range of contact reactions, for both high and low status
groups in seemingly ubiquitous intergroup threat situations, would advance theory: Threat research could better outline contact responses for high and low status groups, and contact research could better understand the antecedents to contact, a crucial intergroup variable.

Beyond these theoretical gaps, there are crucial applied implications to understanding segregation. Group contact has a variety of benefits, one of which is reducing prejudice (Pettigrew & Tropp, 2006). Reducing prejudice by decreasing segregation could avoid violations of civil liberties, hate crimes, and even war (Stephan et al., 2009). Further, there are group contact benefits beyond prejudice reduction. Contact can make people more likely to help an outgroup (Abbott & Cameron, 2014). Interracial interactions, under certain conditions, can result in positive relationships and moods (Park & Hinsz, 2015). Cooperation between groups of students can improve educational outcomes (Aronson, 2002). Diverse organizations are not only more welcoming to low status groups (Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008), but are also more creative (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012). Understanding why groups avoid contact is therefore important for research on prejudice, helping, interactions, education, and organizations, to name a few applied domains, but we do not know why contact is so infrequent.

To address these applied issues, as well as the above theoretical gaps, this dissertation research proposes a model in which threat perceptions explain segregation behaviors for high and low status groups. Perceiving threat from an outgroup is expected to explain contact behaviors, but with unique reactions for high and low status groups. This model particularly focuses on situations where one perceives that resources are threatened, such as seeing an outgroup as a threat to jobs. Of course, there are other reasons that groups segregate (e.g., ingroup preference), and other forms of segregation behaviors (e.g., seating in cafeterias; Clack,
Dixon, & Tredoux, 2005). But threat perceptions appear to explain some forms of segregation, as recent examples from the media suggest (e.g., between Whites and Latinos; Frey, 2012); these contexts are the focus of the present model.

This model is presented in Figure 1. First, threat perceptions and status are expected to interact and cause regulatory focus motivations, such as concern over preventing economic losses or promoting economic gains (Sassenberg & Woltin, 2008, 2009). In turn, regulatory focus is expected to explain intergroup contact orientations, which include avoidance-approach behaviors toward both an ingroup and the threatening outgroup. Overall, in contexts where groups perceive they are competing over resources, this model notes how threat could explain segregation behaviors for high and low status groups.

The following sections review pertinent literature describing this model’s constructs and hypotheses. First, the outcome – intergroup contact orientations – is defined. Then, a review is presented of how resource threat perceptions are grounded in threat theories. Next, the role of group status is discussed and how it could moderate the relationship between threat and contact. Following that, the regulatory focus mediators are presented, indicating that unique motivations could explain high and low status contact orientations. This chapter concludes with an overview of the present dissertation studies that test this model.

**Intergroup Contact Orientations**

As noted in Figure 1, intergroup contact orientations are the primary outcomes of the present model. Specifically, contact orientations are conceptualized as one’s desire to avoid or approach both an outgroup and ingroup. For example, White Americans could want to avoid a Latino American outgroup. Or they could want to approach this outgroup. This same continuum also applies to ingroups, such as Whites wanting to avoid or approach other Whites. Similarly,
Latinos could want to avoid or approach a White outgroup, and also their Latino ingroup. This definition can explain a variety of segregation behaviors, and it builds on previous contact research.

The construct of contact orientations shifts the focus of previous contact research, which has traditionally been concerned with prejudice reduction. Setting the foundation for prejudice reduction research, Allport (1954) proposed the contact hypothesis, noting optimal conditions of contact that make prejudice reduction likely. The contact hypothesis remains part of Intergroup Contact Theory, but prejudice reduction is still the primary focus. Group contact, for example, has been associated with decreased prejudice toward immigrants in several nations (Liebkind, Haaramo, & Jasinskaja-Lahti, 2000; Stephan et al., 2000; Voci & Hewstone, 2003). After decades of contact research across a variety of groups (e.g., racial/ethnic groups, religious groups), there have been extensive meta-analyses on the relation between contact and prejudice (Pettigrew & Tropp, 2006, 2008; Pettigrew, Tropp, Wagner, & Christ, 2011). Contact reduces prejudice across numerous group contexts (overall $r = -.29$; Pettigrew et al., 2011). Contact, therefore, has crucial implications for improving intergroup relations.

However, there are different forms of intergroup contact. There is a distinction between the quality and quantity of contact. Quality contact refers to intimacy between groups that sets the stage for prejudice reduction. This research often focuses on optimal conditions, such as intergroup cooperation, that can create quality contact and reduce prejudice (Jasinskaja-Lahti, Mähonen, & Liebkind, 2012; Voci & Hewstone, 2003). For example, cooperation between Whites and Latinos in a school makes prejudice between these groups less likely. This quality contact has been the primary focus of contact research (Pettigrew & Tropp, 2006, 2008). However, Intergroup Contact Theory notes an alternate form – quantity contact – which refers to
the frequency of contact. For example, Whites could have quantity contact with Latinos at a school, or lack quantity contact within a segregated neighborhood. This quantity contact is the more relevant concept for this dissertation. That is, frequency of contact is lacking (or missing altogether) when groups are segregated.

Emerging research has begun to better study segregation, particularly by examining quantity contact as an outcome. Specifically, a focus on quantity contact as an outcome is a new approach to studying contact, which has predominantly been studied as a cause (Pettigrew & Tropp, 2006, 2008). A study explaining segregation in European nations, for example, demonstrated that prejudice explained subsequent decreases in quantity contact, the reverse of the typical causal order (Binder et al., 2009). In other words, prejudice can explain segregation, and several others have taken similar approaches to studying quantity contact outcomes (Dhont, Van Hiel, De Bolle, & Roets, 2012; Vezzali, Giovannini, & Capozza, 2010). Research outside of Intergroup Contact Theory has also focused on quantity contact. Individual differences, such as concern over security, can explain outgroup avoidance and approach outcomes (Shah, Brazy, & Higgins, 2004). Although not necessarily trying to explain quantity contact as an outcome, sociologists have also assessed quantity contact descriptively. This work notes preferred closeness with outgroups (termed social distance), such as how comfortable White Americans would be with African American neighbors (Bogardus, 1933; Parrillo & Donoghue, 2005). Importantly, this research demonstrates that variability in quantity contact can be measured as a preference. For example, Whites may prefer to avoid (low quantity) or approach (high quantity) a Latino outgroup. Thus, although the majority of research on group contact has focused on quality contact as a cause (Pettigrew & Tropp, 2006, 2008), recent developments, both within and outside of Intergroup Contact Theory, have directly studied quantity contact, often as an
outcome to be explained.

In the present dissertation, *contact orientations* are defined as the amount of contact one desires with both an outgroup and their ingroup. Thus, this definition of contact orientations focuses on quantity contact, and all further mention of contact orientations imply this quantity focus. This definition is congruent with theoretical reviews that have noted that avoidance-approach behaviors apply to both outgroups and ingroups (Brewer, 1999; Sassenberg & Woltin, 2008, 2009). Whites’ desire to interact with other Whites, for example, is independent of their desire to interact with Latinos. Further, this outgroup and ingroup focus can aptly describe segregation examples, such as Whites avoiding Latinos (outgroup avoidance), and Latinos approaching other Latinos (ingroup approach). And similar to the above research (e.g., Binder et al., 2009), these contact orientations are conceptualized as outcomes. Figure 2, expanding on the outcomes of Figure 1, notes these *two* (outgroup and ingroup) avoidance-approach continuums that comprise contact orientations.

This definition of contact orientations addresses several gaps in Intergroup Contact Theory. First, contact orientations focus on outgroup and *and* ingroup contact, as shown in Figure 2. This incorporates outgroup and ingroup behaviors relevant to segregation. This also includes ingroups in the notion of quantity contact, something contact theory typically does not do (Pettigrew & Tropp, 2006), but consistent with research outside of contact theory (Brewer, 1999; Sassenberg & Woltin, 2008, 2009). Additionally, despite an extensive literature on the importance of quality contact for reducing prejudice, much less is known about why groups are segregated. It is crucial to know why as quantity contact is an essential precursor of quality contact (cf. Dovidio, Eller, & Hewstone, 2011). Whites and Latinos, for example, cannot be expected to cooperate if they are not even in the same room, let alone the same neighborhood.
Thus, the well-established benefits of quality contact are largely irrelevant to most real-world groups. The present model (Figures 1 and 2) addresses this by examining contact as an outcome. This contributes to the developing literature on contact outcomes, which has looked at prejudice as the cause of contact (Binder et al., 2009). Prejudice, though, may not be the best predictor of contact (Dhont et al., 2012; Vezzali et al., 2010). Rather than prejudice, the present model focuses on an alternate cause of contact: threat perceptions. This moves beyond previous work on prejudice, which is typically construed as an attitude, whereas threat involves intergroup perceptions (Stephan, Diaz-Loving, & Duran, 2000).

**Intergroup Threat**

As shown in Figure 1, threat is the primary causal variable in the present model. Specifically, this threat refers to an ingroup member perceiving an outgroup to be responsible for an ingroup’s loss of resources. For example, in the context of job competition, Whites could view Latinos as responsible for reducing Whites’ employment, and Latinos could similarly see Whites as threatening Latinos’ employment.

Several theories on intergroup threat note what is conceptually relevant to the present definition of threat. Historically, Realistic Conflict Theory noted that an outgroup is a threat if resources are contested with this group (Sherif, 1966; Sherif, Harvey, White, Hood, & Sherif, 1961; Wolfe & Spencer, 1996). For example, Whites can view Latinos as a threat because of limited access to jobs. Contemporary theories maintain this focus, with some additions. Intergroup Threat Theory (formerly called Integrated Threat Theory; Stephan et al. 2009; Stephan & Stephan, 2000), as well as the Sociofunctional Threat Approach (Cottrell & Neuberg, 2005), emphasize that the mere perception of a group taking resources is enough to elicit threat, regardless of whether the perception has objective truth. That is, threat perceptions can be real or
imagined. White Americans, for example, can perceive Latino immigrants as an economic threat (Esses, Dovidio, Jackson, & Armstrong, 2001; Stephan et al., 2000), even though immigrants often bring economic benefits to host citizens (Peri, 2013). Further, the Instrumental Model of Group Conflict (Esses et al., 2001; Ward & Masgoret, 2006) notes that a crucial component of threat is zero-sum perceptions, which is when gains for an outgroup are seen as losses for the ingroup. Building on the above example, Whites can view Latinos as a threat because they see Latino gains in jobs as a loss of jobs to their ingroup. Across these threat theories there are three key components of threat, including intergroup resources, perceptions of these resources being threatened, and these perceptions being zero-sum.

Thus, the present dissertation defines a resource threat as a zero-sum perception (real or imagined) of another group being responsible for a loss (or non-gain) of ingroup resources. This definition is less concerned with whether or not a threat actually exists, but rather whether or not one perceives a threat (real or imagined). This definition also incorporates a zero-sum focus, which indicates that a resource is simply something an outgroup could be taking. For example, jobs, education, language, and cultural values are all resources that could be threatened to the extent that these resources are perceived as losses for the ingroup because of a particular outgroup. Whites could view Latinos as a threat because they perceive them to be taking jobs (or educational or language resources) from the ingroup. Threat perceptions can, of course, also apply to the other group’s perspective, as with Latinos viewing Whites as a threat to jobs, education, or language.

This notion of zero-sum perceptions also implies what the present definition of resource threat does not entail. Other potentially threatening aspects of an outgroup (e.g., an outgroup perceived as dangerous; Cottrell & Neuberg, 2005) would not be part of this definition, if it is
not a resource in the zero-sum sense. For example, Whites viewing Latinos as dangerous would not be considered a resource threat, particularly because outgroup danger is not gained at the expense of an ingroup, at least not in the same sense as jobs are. Danger and other types of threat perceptions (e.g., disease association) are, of course, important components of intergroup threat. The present model, though, solely focuses on resource threats (i.e., zero-sum perceptions) as one explanation of segregation.

As shown in Figure 1, resource threats are expected to influence contact orientations. In particular, resource threat perceptions are expected to cause outgroup avoidance and ingroup approach, the avoidance-approach continuums noted in Figure 2. For example, Whites could distance themselves from Latinos they perceive to be threatening (outgroup avoidance), and Latinos could approach other Latinos if they see Whites as threatening (ingroup approach). However, this model does not simply expect contact to be explained by threat. Instead, as alluded to in these examples and shown in Figure 1, contact is hypothesized to be explained by the interaction of threat with status.

**Intergroup Status**

As shown in Figure 1, group status is expected to interact with threat to explain different contact orientations. That is, groups have a status relative to other groups, which is likely a crucial component if threat perceptions become involved with these groups. With resource threat in mind, a group’s status reflects their relative access to that resource. With employment in an immigration context, for example, Whites would be considered high status as they have greater access to employment opportunities relative to Latinos; and Latinos would be relatively lower status (Davidson, 2012). This status, along with threat perceptions, is expected to influence contact orientations, such as Whites avoiding Latinos, or Latinos approaching other Latinos.
However, the concept of status can be difficult to nail down.

There is variation across theories on what is meant by group status. A group’s relative size is one approach to thinking about status, as with designations of minority versus majority groups (Hewstone, Rubin, & Willis, 2002). Black and Latino Americans, for instance, are currently numerical minorities compared to White Americans. However, this does not necessarily address the group inequality seen with resources. White Americans could become a numeric minority by the year 2044 (Colby & Ortman, 2015), but this does not necessarily mean that they will have fewer resources than other racial/ethnic groups. Several theories have noted this important distinction. For example, the Stereotype Content Model regards status as societal perceptions of intergroup privilege (Fiske, Cuddy, Glick, & Xu, 2002). Image Theory notes similar privilege, such as with access to economic resources, but instead refers to this access as group power (Alexander, Brewer, & Livingston, 2005). Image Theory instead refers to societal perceptions of value, rather than resource privilege, in defining status. Other reviews focus on resource privilege, but refer to it as group advantage or disadvantage, rather than status (Schnabel & Ullrich, 2013). In sum, there is a great deal of semantic variation across theories, much of which is understandable as these variables (size, access to resources, and societal value) are often highly correlated with real-world groups (Hewstone et al., 2002). Semantic variation aside, these theories agree that resource privilege is a crucial intergroup variable.

Therefore, this dissertation focuses on resource privilege to define group status. Specifically, higher status is defined as the relative greater access to resources afforded to one group over another in a particular context. This emphasis on resource access can fittingly describe segregation examples, such as Whites having greater access to jobs compared to Latinos. This status definition also flows from the above definition on resource threat. Further,
this definition is congruent with the above theories on status (though some may disagree with the term status), as well as theories on intergroup threat (Riek et al., 2006; Schnabel & Ullrich, 2013) and contact (Bettencourt, Dorr, Charlton, & Hume, 2001), the cause and outcome, respectively, in the present model.

Status often influences reactions to similar situations. This point is emphasized in the above theories (Cuddy, Fiske, & Glick, 2007; Hewstone et al., 2002; Dovidio et al., 2009; Schnabel & Ullrich, 2013), and this has been demonstrated in a number of empirical studies. There are often differences in how high and low status groups represent their identity (Dovidio, Gaertner, & Saguy, 2009), approach intergroup discussions (Saguy, Dovidio, & Pratto, 2008), and think about affirmative action (Ellemers, Scheepers, & Popa, 2010). With intergroup contact research, prejudice reduction benefits are greater for high status groups compared to low status groups (Pettigrew et al., 2011). For quantity contact specifically, there are often different outgroup contact preferences, such as high status groups (e.g., White English) engaging in less outgroup contact than low status groups (e.g., African English; Binder et al., 2009).

Because of status differences, the present research expects status to influence contact orientations in threatening situations. In particular, threat perceptions are hypothesized to cause outgroup avoidance for high status groups, but ingroup approach for low status groups. Figure 1 shows these moderated paths, with Figure 2 noting these possible (outgroup and ingroup) contact orientations. These patterns are expected based on previous research. With high status ingroups, host citizens that perceived immigrants were taking resources showed more outgroup avoidance, such as an increased likelihood of agreeing with statements about the deportation of immigrants (Cottrell et al., 2010). Similarly, in a study of Whites who perceived Asians to be a threat to educational resources, Whites expressed greater fear of Asians (Maddux, Galinsky, Cuddy, &
Polifroni, 2008), an avoidance emotion (Cottrell & Neuberg, 2005). With low status ingroups, immigrants that perceived host citizens as a threat engaged in ingroup approach, such as emphasizing their culture and identity (Dovidio et al., 2009). Additionally, in response to the Australian government imposing an economic threat to unions (a low status group compared to the government), union members approached their ingroup, such as attending union meetings and rallies (Veenstra & Haslam, 2000). Overall, threat perceptions are likely to influence group contact in the direction of outgroup avoidance for high status groups, and ingroup approach for low status groups.

The present model proposes that threat causes different contact orientations for high and low status groups. By including status, this model fills gaps in the threat and contact literatures, which have focused predominantly on high status groups (Pettigrew & Tropp, 2006; Riek et al., 2006; cf. Saguy et al., 2008; cf. Stephan et al., 2000). Further, status is hypothesized to lead to unique contact orientations because of particular motivations – prevention and promotion focus.

**Regulatory Focus Theory: Prevention and Promotion Focus**

Regulatory focus is expected to explain why threat, depending on group status, leads to particular contact orientations, as depicted in Figure 1. Regulatory focus refers to motivations that arise with resource perceptions. For example, in response to perceiving Latinos as a threat to jobs, Whites may be focused on preventing losses, or promoting gains, of resources. Both are plausible reactions to perceiving a resource threat.

Regulatory Focus Theory (RFT) was originally developed to explain motivations beyond hedonism (Higgins, 1994, 1998, 2004). RFT notes that preventing losses versus promoting gains can explain a variety of behaviors. For example, these motivations have been applied to understanding false memories (Crowe & Higgins, 1997), decision making (Shah, Higgins, &
Friedman, 1998), the careers people pursue (Sassenberg & Scholl, 2013), and emotions people experience (Eder & Hommel, 2013; Ellemers et al., 2010). RFT is thus a broad theory of motivation, but with particular motivational states.

That is, regulatory focus includes two unique motivational states: prevention and promotion focus (Higgins, 1994, 1998, 2004). A prevention focus involves attending to negative stimuli in an effort to avoid undesirable outcomes. A promotion focus involves attending to positive stimuli in an effort to approach desirable outcomes. In research on false memories, for example, a promotion focus increased false positive memories (e.g., recognizing a word that was not from a previous list), but a prevention focus increased false negative memories (e.g., not recognizing a word that was from a previous list; Crowe & Higgins, 1997). In other research, a prevention focus caused better decisions on tasks framed around losing points for incorrect decisions, whereas a promotion focus caused better decisions on tasks framed around gaining points for correct decisions (Shah et al., 1998). Thus, RFT can explain motivations across domains.

Importantly, RFT has been extended to explain motivations in intergroup research. That is, prevention and promotion focus can occur in group settings (Sassenberg & Woltin, 2008, 2009). For example, Whites, as members of a group, may be concerned with Whites losing jobs (i.e., have a prevention focus), but also could be concerned with Whites gaining jobs (i.e., have a promotion focus). Similar to this research, the present model defines prevention and promotion focus the same as RFT. Figure 1 refers to this as regulatory focus, but Figure 3 expands the model to specify that this consists of two constructs (prevention and promotion focus).

In the present model, threat and status are hypothesized to interact and influence regulatory focus. Figure 1 shows this in the left portion, with regulatory focus as a mediator,
which Figure 3 expands to include two mediators: prevention and promotion focus. As an example of threat and status interacting for these mediators, Whites and Latinos can view one another as a threat to jobs (Davidson, 2012; Frey, 2012), but high versus low status could cause distinct motivations. Whites have greater access to jobs relative to Latinos (the key feature of a high status group), and could be motivated to prevent a loss of this employment access. Conversely, Latinos have less access to jobs relative to Whites (the key feature of a low status group), and could be motivated to promote gains of this resource. Empirical research has demonstrated these prevention and promotion patterns for high and low status groups (Ellemers et al., 2010; Gu, Bohns, & Leonardelli, 2013). For example, manipulating status in the context of affirmative action caused high status groups to express prevention focus, but low status groups to express promotion focus (Ellemers et al., 2010).

Additionally, regulatory focus is hypothesized to influence contact orientations. This is shown in the right portion of Figure 1. In terms of predictions, regulatory focus is expected to cause different contact orientations (Sassenberg & Woltin, 2008, 2009). Across four separate studies, using both measured and manipulated regulatory focus, group members that were more prevention-focused were shown to avoid an outgroup, whereas those that were promotion-focused were shown to approach their ingroup (Shah et al., 2004). These findings were consistent across various intergroup contexts with different measures of avoidance and approach, such as self-reported desire for contact and seating distance (see also, Sassenberg, Kessler, & Memmendey, 2003). These outcomes fit under the present definition of contact orientations (Figure 2), and the present model hypothesizes the same links, with prevention focus leading to outgroup avoidance, and promotion focus leading to ingroup approach.

Overall, threat and status are hypothesized to interact, causing high status groups to be
prevention-focused, but low status groups to be promotion-focused. In turn, prevention focus is expected to explain outgroup avoidance, and promotion focus is expected to explain ingroup approach. This is presented in Figure 1, which presents a useful framework for understanding why high and low status group members engage in particular contact orientations. Whites could view Latinos as a threat to jobs, be concerned with loss of jobs (prevention focus), and want to avoid Latinos (outgroup avoidance). Latinos could also view Whites as a threat to jobs, but instead be concerned with promoting job gains (promotion focus), and want to approach other Latinos (ingroup approach). This model addresses a gap for RFT, as most RFT research has emphasized prevention and promotion focus as a cause of contact (Sassenberg & Woltin, 2008, 2009), with relatively little research on prevention and promotion focus as outcomes (cf. Ellemers et al., 2010). In other words, RFT mostly addresses prevention and promotion motivations for avoidance and approach behaviors in intergroup contexts. The present model thus extends this research by noting how these motivations can arise, particularly with status and threat interacting.

Research Questions and Hypotheses

Social psychology has demonstrated the benefits of intergroup contact, but groups are typically segregated (Binder et al., 2009), especially when resources are contested (Cottrell et al., 2010). Can preference for group contact be explained by resource threat perceptions? Does status influence how a resource threat is related to amount of contact? If so, why? Figure 1 presents a theoretical model that addresses these questions by incorporating theories on intergroup threat (Esses et al., 2001; Ward & Masgoret, 2006), regulatory focus (Sassenberg & Woltin, 2008, 2009), and intergroup contact (Binder et al., 2009; Pettigrew & Tropp, 2006, 2008). Perceiving an outgroup resource threat is expected to influence contact orientations because of regulatory
focus, and ingroup status is expected to moderate these relationships. Expanding on Figure 1, full hypotheses are detailed in Figure 4, with simplified versions of these predictions shown for high and low status groups in Figure 5 (Panels A and B, respectively). Broadly, these hypotheses are:

1. Status will moderate the relationship between a resource threat and contact orientations.
2. Status will moderate the relationship between a resource threat and regulatory focus.
3. Regulatory focus will be related to contact orientations.
4. Regulatory focus will explain (i.e., mediate) the relationship between threat and contact orientations.

**Overview of Studies**

This dissertation presents two studies that test the above hypotheses across different intergroup contexts with a balance of external and internal validity. Study 1 focuses on resource threat perceptions between White and Latino Americans using an online methodology. These groups served as a non-experimental indicator of high or low status, respectively; resource threat was manipulated with a news article. Self-report regulatory focus and contact orientations were then measured. Study 2 replicates hypothesis tests with artificial groups (i.e., assigned teams) in a laboratory setting. Study 2 experimentally manipulates both threat (i.e., competition for a monetary reward) and status (i.e., relative points in the competition). Self-report measures were similar to Study 1, with the addition of behavioral measures of contact orientations.

Taken together, these two studies provide a comprehensive test of the present model. Study 1 provides tests of all hypotheses using a racial / ethnic context currently experiencing segregation, and thus has high external validity. However, internal validity is somewhat lower as only threat (not status) was experimentally manipulated. Study 2, though, manipulates both threat and status and thus has high internal validity. However, this study has lower external
validity because of the use of artificial groups. Therefore, these two studies provide tests of hypotheses that balance internal and external validity. Additionally, Study 1 has more passive methods (e.g., completing an online questionnaire), whereas Study 2 more actively involves participants (e.g., being in the same room and interacting with actual outgroup and ingroup members). Further, Study 1 uses self-report measures of contact orientations, whereas Study 2 adds behavioral measures. These two studies, therefore, have replicated tests of the present model in two unique intergroup situations (racial / ethnic relations and competitive teams), with a balance of internal versus external validity, passive versus active participation, and self-report versus behavioral measures. The hypotheses tested were described throughout the above sections, and the following summarizes these hypotheses.

**Hypothesis 1: Status-by-Threat \( \rightarrow \) Contact Orientations**

Under threat, high status groups are expected to avoid the outgroup (Hypothesis 1A), but low status groups are expected to approach their ingroup (Hypothesis 1B). These hypotheses are tested in 2 (Status: low vs. high status) X 2 (Threat: no threat vs. threat) designs, with two outcomes (outgroup and ingroup contact). The high status-threat cell (e.g., Whites perceiving Latinos as a threat) is expected to have the lowest outgroup contact (avoidance), and the low status-threat cell (e.g., Latinos perceiving Whites as a threat) is expected to have the highest ingroup contact (approach). Note that these hypotheses are *not* predicting separate outcomes for high and low status groups as tests for all paths are included. That is, the threat-high status cell includes tests of ingroup contact, and the threat-low status cell includes tests of outgroup contact, but these cells are expected to be relatively weaker. Figure 4 depicts these hypotheses, as does Figure 5, but with paths omitted for clearer presentation.

**Hypothesis 2: Status-by-Threat \( \rightarrow \) Regulatory Focus**
Under threat, high status groups are expected to be prevention-focused (Hypothesis 2A), and low status groups are expected to be promotion-focused (Hypothesis 2B). These hypotheses are tested in 2 (Status: low vs. high status) X 2 (Threat no threat vs. threat) designs, but in contrast to Hypothesis 1, prevention and promotion focus (i.e., regulatory focus) are the outcomes. The threat-high status cell is expected to have the highest prevention focus, and the threat-low status cell is expected to have the highest promotion focus. As with Hypothesis 1, alternate paths are included, such that the threat-high status cell will be related to promotion focus, and the threat-low status cell to prevention focus, but these cells are expected to be relatively weaker. Figure 4 depicts this model, and Figure 5 does so with some omitted paths for clearer presentation.

**Hypothesis 3: Regulatory Focus ➔ Contact Orientations**

Prevention and promotion focus are expected to explain contact orientations. Prevention focus is expected to be negatively related to outgroup contact (outgroup avoidance; Hypothesis 3A), and promotion focus is expected to be positively related to ingroup contact (ingroup approach; Hypothesis 3B). Alternate paths are included (prevention focus explaining ingroup contact, and promotion focus explaining outgroup contact), but these paths are expected to be relatively weaker than the Hypothesis 3A and 3B paths. Figure 4 shows all paths, and Figure 5 shows the hypothesized stronger paths.

**Hypothesis 4: Status-by-Threat ➔ Regulatory Focus ➔ Contact Orientations**

Hypothesis 4 tests the full moderated mediation model. The moderated portion of the model predicts that when a high status group perceives a resource threat, this is expected to increase prevention focus and outgroup avoidance. In contrast, when a low status group perceives a resource threat, this is expected to increase promotion-focus and ingroup approach.
The meditational hypotheses predict that, for high status groups, a greater prevention focus is expected to explain the threat-outgroup avoidance relationship (Hypothesis 4A); for low status groups, a greater promotion focus is expected to explain the threat-ingroup approach relationship (Hypothesis 4B).
Chapter 2: Study 1

In Study 1, the model was tested using methods to enhance external validity, with a focus on relations between Whites and Latinos in the United States. This is a contemporary intergroup context with potential for threat perceptions and segregation (Cottrell et al., 2010; Davidson, 2012; Frey, 2012). With an online sample of White and Latino participants, Study 1 experimentally manipulated resource threat perceptions of the outgroup. The outgroup was Latinos for White participants and Whites for Latino participants. Threat was manipulated with a news article that was adapted from previous research (Jackson & Esses, 2000; Matthews & Levin, 2012) and pilot-tested. Following the threat manipulation, participants completed self-report measures of regulatory focus (prevention and promotion) and contact orientations (outgroup and ingroup avoidance-approach). Thus, using an intergroup context where segregation is currently possible, Study 1 was designed to test all model hypotheses and to have high external validity.

Methods

Procedures and Design

Study 1 recruited White and Latino participants through Amazon’s Mechanical Turk (MTurk), using monetary compensation as an incentive (Buhrmester, Kwang, & Gosling, 2011). Participants completed all materials in an online questionnaire. Prior to consent, participants reported their race/ethnicity and age. To qualify to participate, participants needed to self-identify as White/Caucasian or Hispanic/Latino and be at least 18 years old. Participants were not aware of the racial/ethnic criteria when completing the demographic questions. Participation was also restricted to those within the United States, which was done using IP address filters on MTurk. If participants met eligibility criteria, they completed an online consent form, read the
news article constructed for this study to manipulate threat, and responded to measures of regulatory focus and contact orientations.

Study 1 thus used a 2 (Status: low vs. high status) X 2 (Threat: no threat, threat) design. Status was assessed as whether the participant identified as White / Caucasian (high status) or Hispanic / Latino (low status) and resource threat was manipulated as described above.

Participants

An a priori power analysis, expecting small to medium effect sizes for all hypothesis tests and setting power at .80 and α at .05, indicated a sample size of 380 participants would be needed. This number was increased by 11% (N = 427) based on pilot studies that indicated this rate of sample attrition (see Appendix A; also described briefly below). After excluding cases that were missing a large amount of data (i.e., no responses for central constructs), the final sample size was 345, only slightly less than the targeted sample size.

In all, 176 (51%) participants were White / Caucasian, and 169 (49%) were Hispanic / Latino. Half the participants were male (49.6%) male, with a mean age of 32.16 years (SD = 11.42; range of 18 to 78). The final sample was compared to the 82 excluded cases; there were no differences on the two key predictor variables, including race / ethnicity ($\chi^2(1) = 0.194, p = .660$) or the threat condition ($\chi^2(1) = 0.185, p = .667$).

Status Indicator

White / Caucasian or Hispanic / Latino identification served as a non-experimental indicator of high or low status (Eibach & Keegan, 2006; Ellemers et al., 2010). Data from a pilot study (Appendix A) supported this approach.

Manipulation of Resource Threat

The resource threat manipulation used a news article that was adapted from previous
research (Jackson & Esses, 2000; Matthews & Levin, 2012). Participants read a brief news article about a racial/ethnic outgroup that highlighted jobs as a resource that could be threatened (Jackson & Esses, 2000; Matthews & Levin, 2012; adapted from an actual *New York Times* article; Scheiber, 2015). The specific wording of the news article and all Study 1 materials are presented in Appendix B.

As this manipulation had been used previously only with high status groups, it was necessary to adapt it for low status groups. A pilot study was conducted for these purposes with White and Latino participants using MTurk procedures and a 2 (Status: low vs. high status) X 2 (Threat: no threat, threat) design, similar to the primary study described above. Full details of the pilot study’s methods and results are presented in Appendix A. The threat condition of the news article (relative to the no threat condition) increased a measure of threat perceptions ($F(1, 35) = 8.82, p = .005, d = 0.96$). This applied to both high and low status groups, as there was no status-by-threat interaction ($F(1, 35) = 1.00, p = .323$, partial $\eta^2 = .028$).

Thus, this manipulation was used for Study 1, in which participants were randomly assigned to a threat or no threat condition. In the *threat condition*, White participants read that, since the U.S. recession began, Latinos were gaining jobs more than other groups, highlighting zero-sum threat perceptions. This condition included a line graph (adapted from the 2015 Economic Report of the President; U.S. Government Publishing Office, 2015) that showed job growth for Latinos from 2010 to 2014. Latino participants in the threat condition read identical information, but with the article and line graph phrased toward Whites. In the *no threat condition*, for both White and Latino participants, the information and graph were similar to the threat condition, but no groups were mentioned. That is, the news article did not mention job growth for a specific group, and the line graph showed job growth for all Americans. As a result,
this no threat condition did not include threat perceptions toward a group, providing relatively little to no zero-sum perceptions. In both conditions, the manipulation was followed with an open-ended item: “Please summarize how this article relates to your own experiences.” Altogether, this manipulation was designed to make an outgroup appear to be a threat to ingroup jobs (the resource threat condition) relative to information about jobs without mention of outgroups or ingroups (the no threat condition).

**Measures**

All measures are presented in Table 1. These measures were presented to participants after the above threat manipulation and in the following order.

**Regulatory focus.** Ten self-report items, five measuring prevention focus and five measuring promotion focus, were adapted from previous research (Ellemers et al., 2010; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001). These items were adapted for the present employment context. Sample prevention focus items are: “I am focused on the jobs that I ought to have” and “I am afraid of what unemployment will look like in the future”. Sample promotion focus items are: “I am focused on the jobs that I should ideally have” and “I hope that successful employment will occur in the future”. Participants responded to these items on a 1 (not at all) to 7 (extremely) Likert scale. Items were coded such that higher values indicated a greater prevention or promotion focus. For descriptive analyses, items were averaged into measures of prevention focus (α = .67) and promotion focus (α = .73); for hypothesis tests, individual items were used in structural equation models.

**Contact orientations.** Participants completed self-report measures of outgroup and ingroup avoidance-approach. These items were adapted from previous research (Mackie, Devos, & Smith, 2000; Shah et al., 2004) and modified for White and Latino groups. There were a total
of five items for each group, with two items for the avoidance end and three items for the approach end of the contact continuum. Sample items are: “To what extent do you want to [avoid / approach / get to know] the [outgroup / ingroup]?” The “[outgroup / ingroup]” portion of these items was phrased toward both Whites / Caucasians and Hispanics / Latinos. Thus, all participants completed measures of outgroup and ingroup contact orientations. Participants responded to these items on a 1 (not at all) to 7 (extremely) Likert scale. Items were coded such that higher values indicated greater approach (toward both the outgroup and ingroup). For descriptive analyses, items were averaged to create measures of outgroup contact ($\alpha = .82$) and ingroup contact ($\alpha = .80$); for hypothesis tests, individual items were entered into structural equation models.

**Results**

**Preliminary Results**

For descriptive purposes, item means, standard deviations, and correlations are presented in Table 2. Across the four primary constructs (prevention focus, promotion focus, outgroup contact, and ingroup contact), the general pattern of inter-item correlations was consistent with past research (e.g., Ellemers et al., 2010; Shah et al., 2004). The composite constructs’ means, standard deviations, and correlations are presented in Table 3. Greater promotion focus was correlated with greater ingroup approach, which is congruent with previous findings (Shah et al., 2004). Prevention focus was also correlated with ingroup approach. With outgroup contact, promotion focus was also, unexpectedly, related to increased approach, whereas prevention focus was not. Also contrary to expectations, the prevention and promotion focus scales were positively correlated. Outgroup and ingroup contact orientations were also positively correlated, similar to past research trends (Shah et al., 2004).
**Data Analysis Plan**

Rather than the above average constructs, structural equation modeling (SEM) was used to test all of the hypotheses depicted in Figure 4, with individual items modeled as latent variables. This included tests for the status-by-threat interaction on contact orientations (Hypothesis 1) and regulatory focus (Hypothesis 2), the relationships between regulatory focus and contact orientations (Hypothesis 3), and the mediating role of regulatory focus in relating the status-by-threat interaction to contact orientations (Hypothesis 4). Hypotheses were tested with a 2 (Status: low vs. high status) X 2 (Threat: no threat, threat) model using Mplus (Version 6.12; Hayes & Preacher, 2014; Muthén, & Muthén, 2012; Rosseel, 2012). Status and the threat condition were entered as dummy coded independent variables (0 = low status, 1 = high status; 0 = no threat, 1 = threat), along with their interaction, in a single model. Dummy coding allows for a flexible framework of testing main and interacting effects of independent variables in SEM, in which conditions coded as zero (low status and no threat) were represented by the intercept, and conditions coded as one (high status and threat) were estimated coefficients. Together, this allows estimates of threat effects for both low and high status groups. These variables and their interaction were used to simultaneously predict prevention focus and promotion focus as mediators, and outgroup and ingroup contact as dependent variables. The mediators (prevention and promotion focus) and dependent variables (outgroup and ingroup contact) were modeled as latent variables, and set to correlate with one another. This allowed for adjustment of any relationships (e.g., correlations between prevention and promotion focus) for more precise hypothesis tests. Hypotheses 1-3 were tested with standardized path estimates. Hypothesis 4 was tested with indirect effects and confidence intervals. Established standards were used to assess model fit (including CFI ≥ .95, RMSEA < .08, SRMR ≤ .08, and $\chi^2/df \leq 3$; Schriever, Stage,
With the above approach, an SEM was fit that included all observed variables for the four corresponding latent variables (Table 1). After excluding some items based on relatively lower observed-latent variable estimates, the model fit the data well (CFI = .944, RMSEA = .056 (90% CI [.046, .067]), SRMR = .048, $\chi^2/df = 211.536/101 = 2.09$). Figure 6 displays the results of this model, with high and low status results in Panels A and B, respectively. Note that these separate panels are for ease of presenting the hypothesized results, but they come from the single SEM described above with a status-by-threat interaction included. (That is, separate models were not run for high and low status groups; this was carried out by the interaction). Interaction results are described below. For clarity of presentation, Figure 6 only includes path estimates, but not observed-latent variable estimates, which are presented in Figure 7.

**Hypothesis 1: Status-by-Threat $\rightarrow$ Contact Orientations**

Hypothesis 1 predicted that, under threat (vs. no threat), high status groups would show less outgroup contact (Hypothesis 1A), but that low status groups would show more ingroup contact (Hypothesis 1B). These hypotheses are depicted in Figure 6 by the dashed paths linking threat to contact outcomes. Neither Hypothesis 1A nor 1B were supported, as threat and status did not interact for outgroup contact orientation ($\beta = .15, p = .143$) or ingroup contact orientation ($\beta = .08, p = .41$). There were, however, main effects of status, such that high status was related to lower preference for outgroup contact ($\beta = -.27, p < .001$), and low status was related to greater preference for ingroup contact ($\beta = .22, p = .005$). This pattern supports the status portion of hypotheses, but status did not moderate the threat effect as predicted.

**Hypothesis 2: Status-by-Threat $\rightarrow$ Regulatory Focus**

Hypothesis 2 predicted that, under threat (vs. no threat), high status groups would show a
greater prevention focus (Hypothesis 2A). This hypothesis is shown in Figure 6 with the paths that link threat to prevention focus. For the prevention focus outcome, threat and status interacted ($\beta = -.27, p = .009$), but not in the expected pattern. Threat was related to a greater prevention focus ($\beta = .16, p = .058$; Panel B) for the low status group, rather than the high status group. For the high status group, threat was marginally related to less prevention focus ($\beta = -.15, p = .074$; Panel A).

The second portion of Hypothesis 2 predicted that, under threat (vs. no threat), low status groups would show a greater promotion focus (Hypothesis 2B). Figure 6 shows this with threat-promotion focus paths. There was a marginal interaction for the promotion focus outcome ($\beta = -.21, p = .067$), but it was not in the predicted direction. For the low status group, threat did not affect promotion focus ($\beta = .06, p = .53$; Panel B). However, for high status, threat caused less promotion focus ($\beta = -.18, p = .048$; Panel A). This weakly supports Hypothesis 2B, with the high status group driving the effect.

**Hypothesis 3: Regulatory Focus $\rightarrow$ Contact Orientations**

Hypothesis 3 predicted that the two types of regulatory focus would have different relationships with contact orientations. Figure 6 depicts this in the right-most paths. Prevention focus was predicted to be negatively related to outgroup contact (Hypothesis 3A). This effect was in the expected direction, but not significant ($\beta = -.09, p = .157$). Hypothesis 3 also noted that promotion focus would be positively related to ingroup contact (Hypothesis 3B); this was supported ($\beta = .23, p = .001$). Promotion focus was also related to increased outgroup contact ($\beta = .35, p < .001$), whereas prevention focus was not related to ingroup contact ($\beta = .08, p = .245$).

**Hypothesis 4: Status-by-Threat $\rightarrow$ Regulatory Focus $\rightarrow$ Contact Orientations**

Hypothesis 4 predicted that regulatory focus would explain the relationship between the
status-by-threat interaction and the contact orientation outcomes. As noted above, threat and status did not interact for the contact orientation outcomes. Nonetheless, this does not pose an issue for mediation hypothesis tests. Rather than first establishing an effect to be mediated (e.g., threat influencing contact), current mediation analyses (Preacher & Hayes, 2004) instead focus on indirect effects – how “a paths” and “b paths” combine in mediation models. Here, these indirect effects refer to the status-by-threat relationship with regulatory focus outcomes (“a paths” from Hypothesis 2) and the regulatory focus relationships with contact outcomes (“b paths” from Hypothesis 3). These indirect effects were examined by multiplying the “a paths” and “b paths” and estimating 95% confidence intervals.

The first part of Hypothesis 4 predicted that, for high status groups, prevention focus would mediate the relationship between resource threat and decreased outgroup contact (Hypothesis 4A). This hypothesis was not supported (standardized indirect effect = .014, 95% CI [-.011, .038]). However, there was a marginal indirect effect for promotion focus (-.063, 95% CI [-.131, .005], 90% CI [-.121, -.006]), such that threat decreased promotion focus accounted for less outgroup contact. When ingroup approach was considered as the outcome, prevention focus was again not a significant mediator (-.011, 95% CI [-.034, .011]), but, again, there was a marginal indirect effect for promotion focus (-.041, 95% CI [-.089, .007], 90% CI [-.082, -.001]).

Hypothesis 4 also predicted that, for low status groups, promotion focus would mediate the relationship between resource threat and increased ingroup contact (Hypothesis 4B). This hypothesis was not supported (.013, 95% CI [-.029, .056]). Nor did prevention focus explain ingroup contact (.012, 95% CI [-.012, .036]). And looking to the alternate outcome here (outgroup contact), there was also no mediation for prevention focus (-.015, 95% CI [-.041, .011]) or promotion focus (.02, 95% CI [-.044, .085]). Thus, neither part of Hypothesis 4 was
supported.

**Summary of Results**

Results provided evidence of threat, status, and regulatory focus influencing contact orientations, but not as hypothesized. Status was related to contact; specifically, Whites (the high status group) were more likely to avoid Latinos (the low status group), but Latinos were more likely to approach other Latinos. Additionally, threat perceptions and status interacted to influence regulatory focus, with threat increasing prevention focus for Latinos, but decreasing promotion focus for Whites. Further, promotion focus was associated with increased ingroup and outgroup contact. Because of this relationship, promotion focus explained why resource threat caused Whites to avoid Latinos, as well as other Whites.

**Discussion**

Study 1 focused on threat explaining preference for group contact with Whites and Latinos in the U.S., allowing tests of my model with external validity. The results of Study 1 provide evidence that threat and regulatory focus influence contact orientations differently for high and low status groups, but not in the predicted directions. Threat did not have a direct effect on contact orientations (Hypothesis 1), but did influence regulatory focus (Hypothesis 2). For Whites (high status), threat caused decreased promotion focus. Promotion focus, in turn, was positively related to outgroup contact (Hypothesis 3), and indirectly explained why threat caused Whites to avoid Latinos (Hypothesis 4). These results supported part of the model in that high status groups, under threat, preferred to avoid a threatening outgroup. However, this promotion focus mediation is in contrast to the hypothesized prevention focus mediator. Additionally, Latinos (low status) were more likely to approach their ingroup than Whites. This is consistent with Hypothesis 1, but threat did not cause this relationship. Threat also caused Latinos to
increase prevention focus, but this was in contrast to the promotion focus prediction (Hypothesis 2). Further, regulatory focus did not explain the threat-contact relation for Latinos (Hypotheses 3 and 4). Thus, the model in Figure 1 did not explain the determinants of contact orientations for Latinos. However, resource threat did have impacts on regulatory focus and contact that differed for low and high status groups.

Incorporating status and resource threat begins to shed light on how segregation occurs in competitive contexts. High status groups that perceive low status groups as a threat to their resources may avoid the low status group. This is congruent with media reports on segregation, such as Whites wanting Latinos to move out of their neighborhood (Frey, 2012), and laboratory research, such as Whites agreeing with deportation of Latino immigrants (Cottrell et al., 2010). However, these outgroup avoidance results applied only to high status groups. Low status groups, on the other hand, were more likely to approach their ingroup, a different behavior that could also contribute to segregation. This phenomenon also has been noted by media reports, such as Latinos primarily finding employment with Latino employers (Archibold, 2010), and empirical research that shows Latinos emphasizing their culture (Dovidio et al., 2009). Thus, the paths to segregation appear to be different for high and low status groups.

The study also provides initial evidence for when resource threat may be critical for high but not low status groups. At least for the competitive employment context used in this study, high status groups may be more responsive to threat than low status groups. This could be a function of this employment context, as resources other than employment may explain the ingroup approach patterns presently observed with low status groups. For example, as identity and culture are crucial resources to low status groups (Dovidio et al., 2009), perhaps threats to these resources would explain why low status group approach their ingroup. More research is
therefore needed to fully explain high and low status segregation, but the present results, nonetheless, have implications for theories on threat and intergroup contact.

These findings have theoretical implications for how intergroup threat explains motivational states. At least for high status groups, intergroup threat can decrease promotion focus, a motivational state (Sassenberg & Woltin, 2008, 2009). The Sociofunctional Threat Approach (STA) notes how threat influences motivational states, namely emotions (Cottrell & Neuberg, 2005; Cottrell et al., 2010; Neuberg, Smith, & Asher, 2000). For example, a perceived threat to safety can increase fear (Johnston & Glasford, 2014). The present results on promotion focus add to STA, with regulatory focus as a motivation beyond emotions. STA focuses on increases in motivation (e.g., increased fear). However, decreases in motivation may also be important, as shown with the present result of decreased promotion focus. Thus, threat may cause engaging motivations (e.g., more fear, as in current theories) or disengaging motivations (e.g., less promotion focus, as in the present results). This disengagement is similar to the process by which stereotype threat can cause disidentification, such as stereotypes of low intelligence causing Black students to decrease their identification with academic domains (Steele, 1997). This disengagement is novel to STA. Engaging versus disengaging motivations could be explained by unique threat perceptions, such as resource threat decreasing promotion focus (disengagement) versus safety threat increasing fear (engagement). Thus, STA could further explain intergroup motivations by detailing how threat perceptions may disengage, with regulatory focus presenting one opportunity for doing so.

These results also have implications for Intergroup Contact Theory (Pettigrew & Tropp, 2006). The present results demonstrate that, at least for high status groups, threat can explain outgroup contact, which could help interpret previous inconsistencies in explaining quantity
contact. For example, some theoretical developments note that prejudice (e.g., disliking outgroups) can decrease outgroup contact (Binder et al., 2009). That is, prejudice could cause segregation. However, other studies have failed to support this relationship (Dhont et al., 2012; Vezzali et al., 2010). Thus, prejudice, at least in some contexts, may not be the reason for segregation. Importantly, prejudice is often subtle and not readily salient (Greenwald & Pettigrew, 2014), such as general feelings toward outgroups (e.g., disliking an outgroup; Binder et al., 2009). This subtle prejudice may involve less salient intergroup contexts than the present threat context (Greenwald & Pettigrew, 2014; Stephan et al., 2009). For example, one may be more aware of actively perceiving Latinos as a threat to jobs compared to a negative feeling (i.e., prejudice) toward Latinos. This intergroup saliency could be the key to explaining when prejudice explains contact orientations. Threat perceptions could increase saliency of groups and moderate the extent to which prejudice decreases contact. Prejudice without threat, such as general negative feelings toward an outgroup, may not cause segregation. But situations combining negative attitudes with perceptions of an outgroup taking an important resource could make an intergroup context salient and cause segregation. This is congruent with meta-analyses noting that more salient attitudes better predict future behaviors (Glasman & Albarracín, 2006). Threat perceptions, therefore, may be part of an intergroup context in which prejudice leads to outgroup avoidance. This was not specifically tested in this study, but is plausible given the results linking threat to outgroup avoidance. In the future, it might be fruitful to merge research on resource threat with research on prejudice in order to enhance Intergroup Contact Theory’s ability to explain why groups are segregated.

Limitations

Threat did not explain certain predicted outcomes, such as a direct relationship with
contact orientations. The threat manipulation is one possible explanation for this. Although this manipulation was validated across two pilot studies and across high and low status groups, the threat condition might have focused too much on the past (i.e., a graph of outgroup job growth over the past four years). This may have been enough to increase threat perceptions, but perhaps these perceptions were too far removed to influence mediating and dependent variables. This explanation is line with Construal Level Theory, which notes that situations with temporal distance (e.g., occurring in the past) are less psychologically relevant (Trope & Liberman, 2003). A threat manipulation that involves a more immediate threat to resources could address this limitation. Study 2 does this, which is elaborated on in the following chapter.

Weaknesses in the measurement of contact orientations also could have contributed to some of the null findings. Two out of five contact orientation items (toward both the outgroup and ingroup) were excluded because of poor fit statistics and observed-latent variable estimates. The excluded items were both negatively worded items (“avoid” and “have nothing to do with”) that were reverse-coded for a single measure of approach. The positively worded items ("approach", “get to know”, and “increase the amount of time you have contact”) all fit well. Contact orientations were conceptualized as a bipolar continuum from avoidance to approach (Binder et al., 2009; Parrillo & Donoghue, 2005), noting, for example, that if people want to avoid an outgroup, then they do not want to approach that outgroup. But perhaps approach and avoidance are not part of the same continuum. They could instead be distinct constructs. Indeed, some of the regulatory focus literature has used separate measures for avoidance and approach (e.g., Shah et al., 2004). If approach and avoidance should be measured separately, and the present measure primarily tapped approach, this could explain why some avoidance hypotheses were not supported. Alternate measures of contact could address this limitation, which Study 2
does by including behavioral measures of contact orientations.

Study 2 also addresses some additional limitations of Study 1. First, in Study 1, White or Latino identification served as a non-experimental indicator of high or low status, respectively, limiting causal conclusions. Second, social desirability may have influenced responses. Maybe Whites actually wanted to avoid Latinos, but would not explicitly say so. Third, the online setting may have led to more passive participation. Study 2 was designed to address these limitations by including a manipulation of group status, artificial groups with decreased social desirability, and more active participation in a laboratory setting with behavioral measures.
Chapter 3: Study 2

Study 2 was designed to test the model in a laboratory situation with further experimental control and higher internal validity. Adapting previous procedures (Saguy et al., 2008; Saguy, Tausch, Dovidio, & Pratto, 2009), artificial groups were created in a setting that could manipulate both intergroup threat and status. By manipulating status, Study 2 included causal tests of both threat and status hypotheses, increasing internal validity beyond Study 1, which used a non-experimental indicator of status (i.e., racial/ethnic group identification). Threat was manipulated by having groups compete (or not) for points that represented a monetary reward. Status was manipulated by the relative points groups started with in this competition. These methods allowed more active participation, addressing the passive issues of Study 1, such as participants completing materials in an online setting where the threat manipulation was possibly less salient. Study 2 included similar measures to Study 1 (self-report regulatory focus and contact orientations), but moved beyond the limitations of self-report measures by staging an intergroup situation where groups could interact and contact could be measured behaviorally. Study 2 thus provided a replication of Study 1 with behavioral measures, a novel, more engaging intergroup context, and causal tests to status and threat hypotheses. As before, these hypotheses expected prevention focus to explain why threat causes outgroup avoidance for high status groups, but promotion focus to explain why threat causes ingroup approach for low status groups.

Methods

Procedures and Design

Study 2 recruited student participants from John Jay College. Students were approached in public spaces on campus (e.g., outside of a cafeteria) and asked if they would like to participate in a psychology study in which they would have a chance to win a $100 Amazon gift.
card. A vague description of the study was provided (i.e., a study on decision making in group settings). Those that agreed to participate and were at least 18 years old were scheduled for an experimental session.

Each session included a number of tasks, which were completed in a group setting in a laboratory with other participants present. These tasks were based on past research (Saguy et al., 2008, 2009) with the goal of manipulating status and threat in a 2 (Status: low status, high status) X 2 (Threat: no threat, threat) design. A depiction of the sequence of procedures is presented in Figure 8 and the procedures are detailed in Appendix C.

**Cover story.** This research was introduced to participants as a study on how estimation is related to decision making in group settings. After completing a consent form, I (the researcher for all sessions) verbally explained that participants would complete dot estimation tasks to indicate their perceptual style in order to place them into groups. These instructions also led participants to believe that they would work with their group on decision making tasks in which they earned points, with the goal of earning 10 points to be entered into a raffle for a $100 Amazon gift card.

**Dot estimation: Group assignment.** Procedures were then used for group assignment (Box 2 in Figure 8). After the cover story, participants were given one minute to estimate how many dots were in three images and asked to be as accurate as possible. They recorded their responses in writing. Then, ostensibly based on their performance, participants were assigned to an Under-Estimator or an Over-Estimator group. In reality, this group was randomly assigned. Each session of data collection thus created two groups of equal size (e.g., two groups of three participants) or as equal as possible (e.g., one group of four participants and one group of three participants). Differences in group sizes were counterbalanced across the status and threat
conditions. Once assigned to a group, and using the raffle points as a backdrop, intergroup status and threat were manipulated in a 2 (Status: low status, high status) X 2 (Threat: no threat, threat) design.

**Status manipulation.** The points for the gift card raffle were used to manipulate group status. Moving down the sequence in Figure 8, after random assignment to groups, participants were reminded that they would work with their group on decision making tasks, earn points, and be entered in the raffle if they earned 10 points. They were then told that they would not start at zero points, but would receive starting points based on how accurate their group was in their dot estimation. This designation manipulated status. In the high status condition, the group was told that they had been more accurate and were assigned seven points to start. In the low status condition, the group was told that they had been less accurate and were assigned four points to start. The high status groups were aware of the low status groups’ starting points, and vice versa. This manipulation was emphasized by writing the name of each group and their number of points on a whiteboard at the front of the room. In reality this status was randomly assigned, creating a high status group (seven points) and low status group (four points) for each session of data collection. The Under-Estimator and Over-Estimator group names were also counterbalanced across these conditions. This status manipulation thus included components of legitimacy (superior dot counting performance) and arbitrariness (a difficult dot counting task with perceptions of luck) that are often involved with status (Hewstone et al., 2002). Manipulation check items (described below) were included to assure that this effectively manipulated status.

**Resource threat manipulation.** The 10-point goal for the gift card raffle also served to manipulate intergroup resource threat. Following the status manipulation, participants were given additional instructions that randomly assigned them to a threat or no threat condition. *Threat*
Condition participants were told that the decision making tasks would be a competition between groups. Each group would be presented with a decision, and the first group to come to a correct decision would earn one point. After several decisions, the first group to get to ten points would win and be entered into the gift card raffle. Only one team could win. No threat condition participants were told that each group would be presented with a decision, and if they came to a correct decision they would earn one point, regardless of the other group’s performance. After several decisions, if their group got to ten points, they would be entered in the gift card raffle, again regardless of the other group’s performance. It was explicitly noted that this was not a competition between the groups, as both groups could be entered into the raffle.

Thus, the threat condition, but not the no threat condition, included a situation in which the other group would threaten ingroup resources (i.e., their chance to be entered into the raffle). In both conditions, instructions were emphasized by writing them on a whiteboard at the front of the room. As with the status manipulation, the Under-Estimator and Over-Estimator names were counterbalanced across the threat conditions, and manipulation check items (described below) were also included. Thus, each session of data collection was either a threat or no threat condition, each with both high and low status groups.

Collection of measures. Following the threat manipulation, participants were asked to sit at a table with their group for the decision making tasks. This seating choice served as a behavioral measure of contact orientations (described below). A sign with their group name (Under-Estimator or Over-Estimator) was also placed on the table to emphasize the group assignment. Once seated, participants were informed that they would individually complete a questionnaire before the decision making tasks. The questionnaire contained the procedure and manipulation check items, as well as self-report measures of regulatory focus and contact
orientations.

**Debriefing.** After completing these measures, participants were debriefed. This included revealing the cover story and noting that group decision making tasks would not actually occur. Participants were also informed that everyone would be entered into the $100 Amazon gift card raffle.

**Participants**

Participants were students at John Jay College. Because participants were nested in groups during the study (i.e., they completed the study with other group members present), an a priori power analysis took this multilevel data into account (Raudenbush et al., 2011). This power analysis, expecting a small to medium effect size for all hypothesis tests and using traditional standards (power at .80 and $\alpha$ at .05), indicated that Study 2 required approximately 80 groups. Analyses originally planned for approximately four people per group, but group sizes varied during data collection (from two to five). This group size variation does not substantially influence statistical power as the number of groups (not participants) is the more pertinent factor with multilevel power (Raudenbush et al., 2011).

Each session of data collection included two groups. In eight sessions there were only three participants, resulting in one of the “groups” being a single participant. These single participant groups were not included in analyses. Although multilevel analyses can handle single person groups, these were excluded because the primary aim was to test the present model in group settings.

A total of 84 groups (237 participants) were included in the initial analyses. Group sizes ranged from two to five participants ($M = 2.82, SD = 0.85$). However, 21 participants were excluded for not completing procedure check items correctly (described below) or for not
completing materials correctly (e.g., largely missing data). Excluded cases did not differ by group status ($\chi^2(1) = 0.629, p = .428$) or threat ($\chi^2(1) = 1.528, p = .216$) conditions. After excluding these 21 cases (including one entire group), the final sample included 83 groups (216 participants). As groups were assigned to be equal in size across conditions, group sizes were balanced across the status ($t(82) = 0.173, p = .863$) and threat ($t(82) = 0.264, p = .792$) conditions.\(^3\)

The participants were diverse in terms of race / ethnicity (6% Asian, 19% Black / African American, 14.8% White / Caucasian, 47.2% Hispanic / Latino, 12% multi-racial / ethnic or other race / ethnicity, 1% missing data), mostly female (60.2%), and relatively young ($M_{\text{Age}} = 20.9$, $SD_{\text{Age}} = 3.82$, range of 18 to 53). Participants were predominantly undergraduate students (1% were masters students). The most reported majors were psychology (29.7%), criminal justice (17.6%), and forensic science (10.2%). All other majors were under 5% (e.g., computer science, English, political science).

**Measures**

Measures of key constructs are presented in Table 4. These measures were presented to participants in the order presented here.

**Behavioral contact orientations.** Participant seating patterns were used as behavioral measures of contact orientations (outgroup and ingroup avoidance-approach). Immediately following manipulation instructions, participants were asked to sit at one of two tables with their group. Tables and chairs were prearranged such that participants could choose their own seats, in which they could sit further or closer to other ingroup members (at their table) as well as outgroup members (at the other table). Variability in seating was therefore dependent on participants’ seating choices. Figure 9 illustrates how tables and chairs were set up. The two
tables were spaced approximately 45 inches apart, with six seat options at each table. Seat choices were measured after participants left the room. For each participant, the average distance (in inches) was calculated relative to all outgroup members present ($M = 102.01$, $SD = 17.22$) and all ingroup members present ($M = 42.12$, $SD = 7.49$). Theses distances were reverse-coded (i.e., multiplied by negative one) so that lower numbers represented avoidance and higher numbers represented approach.

**Procedure and manipulation checks.** After being seated, participants completed a questionnaire. The first section included the procedure and manipulation checks. Procedure check items asked participants their group name, how many points they need to win the raffle, how many points their group has, how many points the other group has, and whether or not this is a competition. Status manipulation check items asked, “Which group do you feel has more [resources / disadvantage / privilege]?”, with a dichotomous Under-Estimator or Over-Estimator choice for each of these three items. Threat manipulation check items were phrased, “If the other group earns points, it will not influence my group’s points” and “If the other team earns points, my team will lose points”, which were responded to on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert scale.

**Regulatory focus.** Phrasing of the prevention and promotion focus items was similar to Study 1 but modified to for the gift card points. There were four prevention focus and four promotion focus items. Sample prevention focus items are: “I am focused on the points that I ought to have” and “I worry about losing points”; sample example promotion focus items are: “I am focused on the points that I should ideally have” and “I imagine successes in gaining points”. Participants responded to items on a 1 (*not at all*) to 7 (*extremely*) Likert scale. Items were coded such that higher values indicated greater prevention or promotion focus. For descriptive analyses,
items were averaged into measures of prevention focus ($\alpha = .64$) and promotion focus ($\alpha = .60$); for hypothesis tests, individual items were used in structural equation models.

**Self-report contact orientations.** The measures of outgroup and ingroup avoidance-approach were similar to Study 1, but modified for the present groups. There were six items for the outgroup measure and six for the ingroup measure. Sample items are: “To what extent do you want to [avoid / approach / get to know] [your group / the other group]?”. Participants responded to these items (for both groups) on a 1 (*not at all*) to 7 (*extremely*) Likert scale. Items were coded such that higher values indicated greater approach (toward both the outgroup and ingroup). For descriptive analyses, items were averaged to create measures of outgroup contact ($\alpha = .80$) and ingroup contact ($\alpha = .79$); for hypothesis tests, individual items were entered into structural equation models.

**Results**

**Manipulation Checks and Preliminary Results**

As manipulation checks of status, chi-square tests of independence compared the high and low status conditions to dichotomous status manipulation check items. These results supported the status manipulation: High status groups indicated that they had more resources ($\chi^2(1) = 102.78, p < .001, \phi = .70$) and privilege ($\chi^2(1) = 120.25, p < .001, \phi = .76$), but less disadvantage ($\chi^2(1) = 119.92, p < .001, \phi = .75$). For the threat manipulation check, *t*-tests compared the threat and no threat conditions on the threat Likert items. The results supported the threat manipulation: Participants in the threat condition were less likely to agree that the other group would not influence their points ($t(213) = -4.60, p < .001, d = -.63$) and more likely to agree that the other group gaining points would cause their group to lose points ($t(213) = 3.93, p < .001, d = .54$).
Means, standard deviations, and correlations of individual items are presented in Table 5, which were mostly correlated as expected. Results for composite constructs are presented in Table 6. Prevention and promotion focus were not correlated, consistent with previous research (Higgins et al., 2001). Promotion focus was also related to (self-reported) ingroup approach, as expected (Shah et al., 2004). Self-reported outgroup and ingroup contact were positively correlated, but behavioral outgroup and ingroup contact were negatively correlated. This behavioral correlation was not surprising, as sitting further from an outgroup often made one sit closer to their ingroup. Unexpectedly, however, these behavioral measures were not correlated with the self-report contact measures.

**Data Analysis Plan**

Study 2 tested the full model shown in Figure 4 using structural equation modeling (SEM). This included the status-by-threat interaction on contact orientations (Hypothesis 1) and regulatory focus (Hypothesis 2), regulatory focus-contact orientation relationships (Hypothesis 3), and the mediating role of regulatory focus (Hypothesis 4). The structure equation model was identical to Study 1, with one exception. Because Study 2 had participants nested in groups (i.e., the randomly assigned Under-Estimator or Over-Estimator groups), the Mplus “type = complex” option was included to adjust standard errors for the groups (Version 6.12; Muthén, & Muthén, 2012). Hypotheses were tested with standardized path estimates (Hypotheses 1-3) and indirect effects with confidence intervals (Hypothesis 4). The same guidelines were used to assess model fit (including CFI ≥ .95, RMSEA < .08, SRMR ≤ .08, and $\chi^2/df$ ≤ 3; Schriever et al., 2010).

The fitted model included the self-report items described in Table 4 for latent mediating variables (prevention and promotion focus) and latent dependent variables (outgroup and ingroup contact). (Behavioral contact measures were tested in a separate model.) After excluding items
because of relatively lower observed-latent variable estimates, this SEM fit the data well (CFI = .90, RMSEA = .068 (90% CI [.052, .084]), SRMR = .059, $\chi^2/df = 143.93/72 = 1.99$). Figure 10 presents the results of this model, with high and low status results in Panels A and B, respectively (interaction effects are described below). Figure 11 presents observed-latent variable relationships.

**Hypothesis 1: Status-by-Threat $\rightarrow$ Contact Orientations**

Under threat (vs. no threat), high status groups were expected to show less outgroup contact (Hypothesis 1A), and low status groups were expected to show increased ingroup contact (Hypothesis 1B). These results are depicted in Figure 10 by the dashed paths linking threat to contact. These hypotheses were not supported: The interaction effect between threat and status was not significant for either outgroup contact ($\beta = -.11, p = .425$) or ingroup contact ($\beta = -.12, p = .295$). For high status groups (Panel A) threat was marginally related to less outgroup contact ($\beta = -.223, p = .065$), as predicted; it was also related to significantly less ingroup contact ($\beta = -.247, p = .024$), which was not predicted. For low status groups (Panel B), threat did not influence outgroup contact ($\beta = -.09, p = .344$) or ingroup contact ($\beta = -.10, p = .254$). However, as interaction terms were not significant, these high and low status findings should be considered tentative.

**Hypothesis 2: Status-by-Threat $\rightarrow$ Regulatory Focus**

Under threat (vs. no threat), high status groups were expected to show greater prevention focus (Hypothesis 2A), and low status groups to show greater promotion focus (Hypothesis 2B). Figure 10 shows this with the paths linking threat to regulatory focus outcomes. The prevention focus hypothesis was not supported: The interaction effect for status and threat was not significant ($\beta = .05, p = .661$), nor were there any significant threat effects for high or low status
groups (Panels A and B, respectively). For promotion focus, the threat and status interaction was significant ($\beta = .354, p = .005$), but not in the predicted direction. Threat was related to greater promotion focus for high status groups ($\beta = .33, p = .003$; Panel A), but not for low status groups ($\beta = -.10, p = .323$; Panel B).

**Hypothesis 3: Regulatory Focus $\rightarrow$ Contact Orientations**

Prevention focus was expected to be related to less outgroup contact (Hypothesis 3A), and promotion focus to more ingroup contact (Hypothesis 3B). Results for these hypotheses are shown in the right-most paths of Figure 10. Prevention focus was related to outgroup contact, but not in the predicted direction: Prevention focus was *positively* related to outgroup contact ($\beta = .22, p = .023$). As predicted, prevention focus was not related to ingroup contact ($\beta = .16, p = .116$). Also as predicted, promotion focus was positively related to ingroup contact ($\beta = .47, p < .001$) and was not related to outgroup contact ($\beta = .15, p = .142$).

**Hypothesis 4: Status-by-Threat $\rightarrow$ Regulatory Focus $\rightarrow$ Contact Orientations**

Mediation hypotheses predicted that regulatory focus would explain the relationship of the status-by-threat interaction with contact orientations. The findings are presented for high status groups first, followed by low status groups.

For high status groups, threat was expected to cause less outgroup contact because of prevention focus (Hypothesis 4A). This hypothesis was not supported. For high status groups, neither prevention focus (standardized indirect effect = .043, 95% CI [-.019, .105]) nor promotion focus (.049, 95% CI [-.025, .123]) were found to be significant mediators of outgroup contact. For ingroup contact, promotion focus was a significant mediator (.152, 95% CI [.034, .271]), contrary to predictions. That is, threat increased promotion focus, and promotion focus, in turn, increased ingroup contact. Lastly, prevention focus was not a significant mediator for
ingroup contact (.032, 95% CI [-.023, .087]), congruent with predictions.

For low status groups, threat was expected to cause less ingroup contact because of promotion focus (Hypothesis 4B). This hypothesis was not supported (-.048, 95% CI [-.146, .050]). Nor did regulatory focus explain contact for the additional low status paths, including prevention-ingroup contact (.021, 95% CI [-.026, .068]), promotion-outgroup contact (-.016, 95% CI [-.051, .020]), or prevention-outgroup contact (.029, 95% CI [-.023, .080]).

**Summary of Self-Report Results**

Status, threat, and regulatory focus explained some of the contact orientations, but not as hypothesized. Resource threat increased promotion focus for high, rather than low, status groups. Prevention focus increased outgroup contact, and promotion focus increased ingroup contact. Among high status groups, promotion focus mediated the relationship between threat and ingroup approach, but this had been predicted for low status groups, not high status groups.

**Behavioral Contact Orientations**

The full model was also tested for behavioral contact orientations measures. This structural equation model was identical to that used for the self-reported contact orientations, but replaced the observed and latent variables for self-report contact orientations with seating distance, specifically, mean distance to outgroup members and mean distance to ingroup members. This model fit the data well (CFI = .88, RMSEA = .069 (90% CI [.045, .093]), SRMR = .053, $\chi^2/df = 65.03/32 = 2.03$).

Some of these behavioral model results are redundant to the above self-report model (i.e., threat and regulatory focus paths pertaining to Hypothesis 2). Therefore, these results are not reported here, but full results for this behavioral model are presented in Appendix D. Those results that are novel (i.e., behavioral contact paths pertaining to Hypothesis 1, 3, and 4) are also
described here.

First, the status-by-threat interaction was not significant for either outgroup ($\beta = -.01, p = .958$) or ingroup ($\beta = .07, p = .620$) contact, failing to support Hypothesis 1. Hypothesis 2 results are redundant and reported in Appendix D. Prevention focus decreased outgroup contact, as expected ($\beta = -.20, p = .009$), supporting Hypothesis 3A. Nonetheless, for Hypothesis 3B, promotion focus did not increase ingroup contact ($\beta = -.04, p = .658$). Lastly, the primary mediation hypotheses (Hypotheses 4A and 4B) were not supported for high status (standardized indirect effect = -.04, 95% CI [-.095, .015]) or low status (.004, 95% CI [-.015, .023]) groups. In sum, the findings for behavioral contact did not support hypotheses, with the exception of prevention focus being related to less outgroup contact.

**Discussion**

Study 2 tested the theoretical model in a novel context – artificial group competitions. This allowed both status and threat to be manipulated, increasing internal validity. Study 2 also engaged participants in a situation where they could physically approach and avoid groups with their seating choices. The findings for self-reported contact orientations were mixed. Threat increased promotion focus for high status groups which, in turn, increased ingroup contact orientation. However, this mediating process had been predicted for low status groups, not high status groups. Threat was unrelated to regulatory focus or contact orientations for low status groups. When analyses were repeated with the behavioral contact measures, the only significant and predicted finding was that a prevention focus decreased behavioral outgroup contact.

Although contrary to predictions, the results still provide some insights into segregation dynamics. Recent examples of segregation note that outgroup avoidance and ingroup approach contribute to segregation (Archibold, 2010; Frey 2012), and the present results speak to both of
these behaviors. First, both the threat condition and having a promotion focus caused high status
groups to report a preference for approaching their ingroup. This suggests that high status
ingroup members may turn to each other, which could maintain segregation. This adds novel
ingroup approach behaviors to previous outgroup avoidance findings, such as Whites avoiding
Latinos (Cottrell et al., 2010). The behavioral findings further demonstrate that status is not the
sole determinant of contact behaviors, as both high and low status group members sat further
from outgroup members, particularly with higher prevention focus. Thus, both high and low
status groups may avoid outgroups.

These ingroup findings indicate that current threat theories, which typically focus on
outgroups, may also apply to ingroup behaviors. For example, the Sociofunctional Threat
Approach notes that perceiving an outgroup as threatening causes behaviors toward that
outgroup (Cottrell & Neuberg, 2005), such as harassing that outgroup (Cottrell et al., 2010;
Johnston & Glasford, 2014). However, a key finding of Study 2 was that, for high status groups,
threat can increase ingroup contact, indicating that perceptions of outgroups can also produce
behaviors toward ingroups. Therefore, ingroup and outgroup behaviors may both result because
of the function of a particular threat perception. If the function of a resource threat perception is
to maximize ingroup resources (Cottrell & Neuberg, 2005), then behaviors that address this
function are plausible, including ingroup and outgroup behaviors. For example, harassing an
outgroup (Johnston & Glasford, 2014) and working with other ingroup members (plausible given
the present ingroup approach findings) could both conceivably maximize ingroup resources.

Taken together, intergroup behaviors, whether toward an outgroup or ingroup, may occur to the
extent that these behaviors fulfill the function of a threat perception. Thus, the inclusion of
ingroup behaviors can likely enhance threat theories’ ability to explain intergroup phenomena.
The present findings on threat explaining ingroup approach also have implications for Intergroup Contact Theory (Pettigrew et al., 2011). Contact research typically focuses on outgroups, such as how outgroup prejudice explains outgroup contact (Binder et al., 2009), but the findings across studies have not been consistent (Dhont et al., 2012; Vezzali et al., 2010). These inconsistencies could be artifacts of focusing on outgroup prejudice and contact. Despite the contact literature’s focus on outgroups, prejudice attitudes may consist of ingroup favoritism (e.g., nationalism) or outgroup derogation (e.g., immigrant inferiority; Brewer, 1999; Figueiredo, & Elkins, 2003). In other words, prejudice can be due to attitudes toward an ingroup or outgroup. Although the present research did not measure prejudice, the ingroup findings demonstrate that segregation behaviors can also be geared toward an ingroup or outgroup. Perhaps ingroup prejudice better explains ingroup segregation (i.e., ingroup approach), whereas outgroup prejudice better explains outgroup segregation (i.e., outgroup avoidance). For example, Whites could have a negative attitude toward Latinos (outgroup prejudice) that causes avoidance of this outgroup. On the other hand, Whites could have a positive attitude toward other Whites (ingroup prejudice) that causes approach of this ingroup. The ingroup or outgroup component of prejudice attitudes, therefore, may be the key to understanding ingroup or outgroup segregation behaviors, respectively. Lack of this distinction could explain why some research has failed to show a prejudice-contact link. For example, Belgians’ prejudice toward an immigrant outgroup did not explain decreased contact with this outgroup (Dhont et al., 2012). But prejudice could play a role with contact in this context, perhaps with ingroup prejudice instead explaining ingroup approach. Thus, congruent with the present ingroup approach findings, Intergroup Contact Theory may more fully study segregation with a focus on ingroup and outgroup contact behaviors.

Limitations
A number of methodological limitations may have resulted in the contradictory and null findings. First, the status manipulation may have been too strong. That is, high status groups were given seven points (needing 10 points for the raffle), and perhaps this unintentionally introduced a mindset of nearly achieving a goal (i.e., a high control potential; Roseman, 2001). In turn, this could have increased promotion focus, which could explain the promotion focus findings that were contrary to high status predictions. At the same time, the threat manipulation may not have been strong enough. The competition, with one group earning a point per decision, was expected to highlight zero-sum resource threat perceptions (Esses et al., 2001), and the threat manipulation check items supported this manipulation. However, the manipulation could have been strengthened, such as by incorporating decisions with loss of points. A hypothetically stronger manipulation may have been needed to observe some effects, such as the threat-prevention focus effect for high status groups, which was trending in the hypothesized direction ($\beta = .20, p = .134$). Future research could therefore attempt to improve on the present manipulations for more precise hypothesis tests.

The conceptualization of contact orientations as avoidance-approach continuums may have also been inaccurate. The self-report contact items that were reverse-coded (i.e., those that tapped avoidance) lowered SEM fit and were excluded from analyses. Perhaps, as some have done (e.g., Shah et al., 2004), avoidance and approach should be measured as two distinct constructs. If so, this could explain current inconsistencies between self-report and behavioral contact findings. Prevention focus, increased self-report outgroup contact (which only included approach items), but decreased behavioral outgroup contact (measured as distance). Thus, more accurate measures of avoidance and approach will likely enhance hypothesis tests.

It should also be noted that the experimenter was not blind to conditions, and could have
unintentionally influenced participants to respond in certain ways, such as subtly encouraging participants to sit further from one another in the threat condition. However, this seems unlikely as there were few significant findings with the seating measure. Additionally, using college student participants, and assigning them to artificial groups, may not generalize to other group contexts, such as particular racial / ethnic groups or to older adults.
Chapter 4: General Discussion

This dissertation developed and tested a model across two studies that used resource threat perceptions to explain segregation. This research made connections across theories of intergroup threat (e.g., Stephan et al., 2009), regulatory focus (e.g., Sassenberg & Woltin, 2008), and intergroup contact (Pettigrew & Tropp, 2006). It was hypothesized that when high status groups and low status groups see one another as a threat to resources, high status groups would aim to prevent loss and avoid a threatening outgroup, whereas low status groups would aim to promote gains and approach their ingroup. In Study 1, online methods were used to manipulate threat perceptions with White and Latino participants. In Study 2, laboratory methods were used to manipulate threat perceptions and status with artificial groups. These studies thus had potential to generalize findings across two unique intergroup contexts, with methods that balanced external and internal validity, passive and active participation, and self-report and behavioral measures.

These hypotheses were partially supported and not completely replicated across the studies, but contribute to our understanding of high status segregation. In Study 1, a threat to jobs caused Whites to avoid Latinos. In Study 2, a threat to gaining monetary points caused an artificially high status group to approach their ingroup. Together, these findings point to two segregation behaviors – outgroup avoidance and ingroup approach – that occur when high status groups perceive low status groups as a resource threat. Further, these patterns were mediated by regulatory focus, with less promotion focus explaining outgroup avoidance in Study 1 and a greater promotion focus explaining ingroup approach in Study 2.

Additionally, these findings give some descriptive understanding of low status segregation. In Study 1, Latinos (relative to Whites) exhibited a greater preference to approach
their ingroup, though resource threat did not cause this. In Study 2, as prevention focus increased, artificially low status groups distanced themselves from high status groups. This suggests that low status groups may contribute to segregation with both outgroup avoidance and ingroup approach behaviors, with prevention focus partially explaining outgroup avoidance. However, the evidence for a more complex process of how threat could initiate segregation behaviors was not observed in the data. Taken together, these results have implications for the hypothesized model.

**Are Status and Threat Related to Contact Orientations?**

This question was the foundational question of this dissertation. This question was initially addressed in Hypotheses 1A and 1B, with threat expected to decrease outgroup contact for high status groups, but increase ingroup contact for low status groups. These hypotheses were not supported in either study, indicating that status and threat likely do not directly influence contact. That is, threat perceptions alone do not immediately explain why high and low status segregate. However, the data suggest that threat could cause segregation indirectly via regulatory focus. The following sections speak to these indirect effects.

**Are Status and Threat Related to Regulatory Focus?**

Yes, to an extent, status and threat do appear to explain regulatory focus. According to the hypotheses (2A and 2B), threat should have increased prevention focus for high status groups and promotion focus for low status groups. But these hypotheses were not supported by the data. Instead, threat was related to promotion focus for the high status group in each study, and the patterns were in opposite directions: decreases in promotion focus in Study 1, and increases in Study 2. Given the different patterns across studies, there was likely a moderating variable unintentionally introduced, such as differences in appraising threat perceptions (Roseman, 2001).
Threat was not related to regulatory focus for the low status group in either study. These null findings suggest that the present resource threats may have less relevance to low status regulatory focus; perhaps alternate resources, such as threats to one’s cultural identity (Dovidio et al., 2009), would be more relevant. Taken together, these findings provide some initial evidence of the mediating function of regulatory focus, but suggest that other factors may also be important.

Is Regulatory Focus Related to Contact Orientations?

Regulatory focus was related to contact orientations, though not always in the predicted directions. Hypotheses (3A and 3B) expected prevention focus to be associated with outgroup avoidance and a promotion focus with ingroup approach, for both high and low status groups. The prevention focus hypothesis was partially supported and only in Study 2: Prevention focus was related to greater behavioral outgroup avoidance, as predicted. However, contrary to predictions, prevention focus was related to self-reported outgroup approach. These divergent findings suggest that avoidance and approach may be separate constructs of contact, rather than the avoidance-approach continuum that was presently theorized. However, when considering a promotion focus, the findings supported this hypothesis across both studies. Though not hypothesized, there was also evidence of a promotion focus relationship to outgroup contact. These relationships demonstrate potential for regulatory focus, especially promotion focus, to explain threat-contact relationships.

Does Regulatory Focus Link Threat to Contact Orientations?

Indirect effects hypotheses (4A and 4B) expected prevention focus to explain why threat decreases outgroup contact for high status groups, and promotion focus to explain why threat increases ingroup contact for low status groups. These specific mediation hypotheses were not
supported. Instead, for high status groups, threat caused promotion focus responses, which explained outgroup avoidance in Study 1 and ingroup approach in Study 2. Mediation results were not observed for low status groups. The above explanations also apply to these mediation results, such that different threat appraisals (Roseman, 2001) could explain divergent findings for high status groups, and less relevant resources (Dovidio et al., 2009) could explain null findings for low status groups. Altogether, threat explained some forms of contact via regulatory focus, though not as hypothesized.

**Theoretical Implications**

Although the results neither conformed to hypotheses nor were consistent across studies, these results have implications for the role of status in Intergroup Contact Theory. Contact theory has primarily been concerned with prejudice reduction (Pettigrew & Tropp, 2006, 2008). However, contact better reduces prejudice for high status groups (Pettigrew et al., 2011). Some have criticized contact theory on this point, noting that research focuses too much on conditions, such as cooperation, that may not readily apply to low status groups (Dixon, Durrheim, & Tredoux, 2005). Congruent with this criticism, the present threat contexts were not related to contact orientations among low status groups, but there were contact findings for high status groups. This could be due to resource relevancy, such that jobs and monetary points are less relevant to low status groups, at least in terms of their orientations to contact. Other resources, such as cultural identity (Dovidio et al., 2010), may be more relevant to how threat relates to low status contact. The present differences in high and low status findings are congruent with intergroup contact research. For example, contact research that asked participants about cooperation in the workplace (e.g., Voci & Hewstone, 2003) could bring to mind resources like jobs that are less relevant to low status group contact. Contact in reference to other resources,
such as cooperation over cultural identity (e.g., respecting differences in cultures; Simon & Schaefer, 2015), may be more relevant to low status groups. Taken together, resource relevancy could explain why threat did not explain low status contact in the present research, a perspective that could illuminate how Intergroup Contact Theory better applies to low status groups.

The results also provide context as to what constitutes a perception for intergroup threat theories. Intergroup threat theories use threat perceptions to explain intergroup motivations, such as resource threat causing anger (Cottrell et al., 2010). The present results demonstrated that resource threat causes promotion focus, thus supporting the motivational argument of threat theories, while also adding a novel outcome. However, the findings were mixed, with threat sometimes decreasing (Study 1) and other times increasing (Study 2) promotion focus. This suggests that resource threat perceptions may be more nuanced than what was noted in this dissertation model and in current theories of intergroup threat (e.g., Cottrell & Neuberg, 2005). That is, threat perceptions may be moderated by situational factors that influence perceptions (Roseman, 2001, 2011), such as a threat being more or less expected, more or less certain, or having more or less control potential. These threat appraisals, in turn, could influence motivation and emotions. For example, threat perceptions with certainty (e.g., an outgroup taking points in an ongoing competition, as in Study 2) may increase promotion focus. But less certain threat perceptions (e.g., an outgroup possibly taking jobs in the future, as in Study 1) may decrease promotion focus. The same could apply to current theories, such as predictions on anger (Cottrell & Neuberg, 2005); threats that are more certain (relative to less certain threats) may be more likely to cause anger. Thus, threat appraisals not only offer an explanation for the present findings, but may also refine how threat theories note how perceptions relate to motivations.

Directions for Future Research
Intergroup Contact and Threat

Future work should better define and incorporate resource threat among low status groups. By focusing research on resources that are relevant to high and low status group contact, the optimal conditions of contact (e.g., cooperation; Pettigrew & Tropp, 2006, 2008) could better apply across groups. Future research might first identify what high and low status resources are. One direction could be investigating whether high status groups see jobs as more relevant to cooperation than low status groups (Voci & Hewstone, 2003), and if low status groups see the possible loss of their culture as more relevant (Dovidio et al., 2009). If there are differences in the resources that are valued between high and low status groups, future contact interventions could aim to address these. For example, cooperative conditions could decrease job competition (for high status groups) and decrease threats to culture, such as colorblind settings (for low status groups). This could make optimal conditions apply across group status, which would address critiques of contact theory conditions ignoring low status groups (e.g., Dixon et al., 2005). Further, this could better apply contact benefits across group status. One process of contact theory, for instance, notes that contact reduces anxiety, which explains prejudice reduction (Pettigrew & Tropp, 2008). Low status groups may have anxiety over the threatened loss of their culture; contact that involves cultural cooperation could reduce this anxiety and, in turn, prejudice. Thus, future research on resource relevancy could allow Intergroup Contact Theory to better incorporate low status groups into notions of contact, while also better extending contact benefits to low status groups.

Additionally, future research could demonstrate how appraisals moderate threat motivations. For example, one prediction of the Sociofunctional Threat Approach (STA; Cottrell & Neuberg, 2005) is that a threat to resources increases anger. However, using the above threat
appraisal argument, a threat to resources without control potential (relative to greater control potential) could cause less anger. As an example, threat could be manipulated with a similar scenario to Study 1 (i.e., a news article noting an outgroup threat to jobs), whereas control potential could be manipulated with information that highlights (or does not highlight) how a college degree increases one’s ability to find employment. This control potential could be manipulated as threat was, by using existing media reports (e.g., Goldstein, 2011). If a threat with high control potential increased anger, this would support current STA predictions. Further, if threat with low control potential had relatively less anger, this would support the novel threat appraisal prediction. Similar methods could be used to address how other STA emotions may also be decreased, with threat appraisals as a foundation for doing so.

**The Present Model**

And threat appraisals could not only expand threat theories, but also refine the present hypotheses. Control potential is one appraisal component that could influence the extent to which threat causes particular segregation behaviors. Figure 12 presents a moderated mediation model for testing this. This model hypothesizes that threat will interact with control potential, such that threat with high control potential will increase promotion focus and explain ingroup approach, but threat with low control potential will decrease promotion focus and explain outgroup avoidance. These hypotheses are particularly in reference to high status ingroups (based on the present findings), but could be extended to low status ingroups (based on resource relevancy).

Additional threat appraisals could further explain inconsistent findings with prevention focus for the present model. As noted, threat certainty refers to how one judges the probability of threat impacting resources (Cottrell & Neuberg, 2005; Roseman, 2001), such as Latinos taking ingroup jobs as less certain (Study 1) compared to a competitive team taking ingroup points
Greater certainty could make prevention focus more likely; Figure 13 presents a moderated mediation model. This model hypothesizes that threat with high certainty will increase prevention focus and explain outgroup avoidance, but does not make predictions on ingroup approach as prevention focus did not influence ingroup approach across the present studies and in previous research (e.g. Shah et al., 2004). Overall, the notion of threat appraisals (Roseman, 2001, 2011) not only presents a novel framework for threat theories, but also parsimoniously explains lack of support for the current model, with hypotheses for future research.

**Applied Implications**

The research findings have implications for programmatic efforts to decrease segregation. Particularly for high status groups, threat caused both outgroup avoidance and ingroup approach. Both of these behaviors could influence segregation, one domain being hiring practices that segregate workplaces (Dovidio & Gaertner, 2000). Hiring is a context in which racial / ethnic group membership might play an implicit role. For example, White individuals responsible for hiring could see members of other groups as a threat to their ingroup employment, which could translate into not hiring those outgroup members (outgroup avoidance) or preferentially hiring Whites (ingroup approach). Thus, resource threat perceptions could be setting the stage for segregated workplaces. This could be avoided by applying the present findings to models for reducing intergroup conflict (Halperin, 2013), for example, preventing negative intergroup perceptions in order to avoid conflict altogether. If threat perceptions are driving segregation behaviors in hiring, as the current results suggest, then decreasing these threat perceptions could decrease segregation. This could involve framing hiring decisions around applicant qualifications, rather than focusing on a limited number of group members being hired. This
subtle framing could change threat perceptions and reduce segregated outcomes in the hiring processes, which is congruent with theory (Halperin, 2013), as well as the present threat manipulations (e.g., noting limited ingroup employment). This preventative approach also could be adapted in other contexts, such as reducing exclusion of immigrant groups from neighborhoods (Cottrell et al., 2010) or racial/ethnic groups in schools (Aronson, 2002). Overall, the present research demonstrates threat and regulatory focuses processes that future applied work could target for reducing segregation, at least from the perspective of high status groups.

However, the present findings relating threat to outgroup and ingroup segregation only applied to high status groups, which future interventions should note. Using the above preventative approach (Halperin 2013) may not be effective for low status groups. For example, perhaps Latino students in schools prefer to spend time with other Latinos (ingroup approach). This behavior may be motivated by other factors (e.g., similar language or culture) and may not be related to resource threat perceptions. That is, the present data suggest that strategies that may be effective for high status groups (e.g., reducing White students’ threat perceptions) may not be a panacea for reducing segregation of all groups. Nonetheless, the present results linking regulatory focus to contact orientations applied across status. For example, promotion focus was related to ingroup approach for high and low status groups. Thus, interventions targeting promotion focus may reduce segregation across group status. Overall, more research is needed to understand best approaches for reducing segregation from the perspective of low status groups.

**Limitations**

There are a number of limitations across the present research. First, this research particularly focused on situations with a threat to resources (jobs and monetary points) that
involved zero-sum perceptions (e.g., Esses et al., 2001; Ward & Masgoret, 2006). This emphasis, however, excludes other topics important to threat research. For example, the Sociofunctional Threat Approach includes various threat categories based on their emotional content and motivations (Cottrell & Neuberg, 2005). Some of these would not be considered resources based on the present zero-sum definition, including a threat to safety (e.g., an outgroup perceived as violent), a threat to health (e.g., an outgroup associated with a disease), or a threat to ingroup morality (e.g., an outgroup as a reminder of ingroup wrongdoing). These threat categories are not necessarily something that an outgroup takes from an ingroup, at least not in the zero-sum sense. For example, an outgroup is not more violent (a safety threat) because of taking violence from an ingroup. These alternate threats were therefore not included in this dissertation. Nonetheless, these alternate threats are important, both to threat theories and understanding segregation. It is plausible that all of the above threat perceptions contribute to segregation. Importantly, though, hypotheses would likely be different from the present model. For instance, promotion focus likely does not play a role in how safety threat causes segregation; fear would likely be a better mediator (Cottrell & Neuberg, 2005). Thesealternate threats are useful topics for future research, which highlight the boundary conditions of resource threats in the present research.

Similar considerations apply to the present focus on group status. This status involved relative (high or low) access to resources. This flowed from the emphasis on resources in threat, and is congruent with theories on status (e.g., Riek et al., 2006; Schnabel & Ullrich, 2013; Bettencourt et al., 2001). However, this status is context-specific (Hewstone et al., 2002), and thus one should interpret the status of groups as something defined by the situation, rather than the group. That is, one cannot assume that specific groups (e.g., Whites) will always be considered high status. For example, on a predominantly Black college campus, where White
students had less access to resources, White students exhibited low status reactions (Hehman et al., 2012). Study 2 further emphasizes the fluidity of status, as it was manipulated with artificial groups. This status definition is not only context-specific, but also rests on the assumption that group members perceive themselves as high or low status. This was not a methodological limitation of the present research (based on Pilot Study results and manipulation checks), but it is a boundary condition of the present model. For example, in Study 1, Whites perceived themselves as higher status and were thus defined as a high status group. However, if Whites did not perceive themselves as higher status, even if they objectively were higher status (in terms of having greater access to resources), then the present definition falls apart.

Additionally, there are boundary conditions with the present approach to segregation. Using Intergroup Contact Theory (Binder et al., 2009; Pettigrew & Tropp, 2006), as well as avoidance and approach behaviors of Regulatory Focus Theory (Higgins, 1997, 1998; Sassenberg & Woltin, 2008, 2009), the predicted outcome was intergroup contact orientations. However, as noted above, there are a number of limitations to the constructs of resource threat and status. Alternate constructs (e.g., safety threat) could play a role in segregation, and these alternate constructs would likely vary in terms of the intergroup segregation they describe. For example, the present model aptly describes segregation with immigration, in schools, or with competitive teams (Davidson, 2012; Linder, 2011). But this model likely does not describe segregation in how people sit in public spaces, such as cafeterias or beaches (Clack et al., 2005; Dixon & Durrheim, 2003, 2004). Alternate models could, such as ingroup preference (independent of threat) explaining cafeteria segregation (Brewer, 1999). Thus, content of segregation will likely vary based on the hypothesized model, even if segregation might be broadly defined via a construct like contact orientations.
On that point, the construct of contact orientations may need to be refined. Avoidance-approach may not be a continuum (as originally theorized), but instead could be two distinct constructs (e.g., one of outgroup avoidance and another of outgroup approach). In Study 2, the self-report measure (with approach items) could have captured outgroup approach, whereas the behavioral measure (of seating distance) could have captured outgroup avoidance. Building on this, recent developments in emotion theory note people engage in avoidance and approach behaviors based on desired end goals (Eder & Hommel, 2013). However, this can sometimes be counterintuitive, such as approach behaviors for an avoidance goal (Förster & Friedman, 2013). For example, in Study 2, participants may have wanted to engage with the outgroup because of the competition in the threat condition (approach), but this was in an effort to ultimately exclude the group from winning the competition (avoidance). Using a real-world example (Frey 2012), host citizens may attack immigrants crossing the border (approach) because they do not want immigrants in the nation (avoidance). In other words, one could simultaneously desire approaching and avoiding an outgroup. And if the self-report and behavioral outgroup measures of Study 2 were uniquely tapping into approach and avoidance, then this could explain the seemingly contradictory relationship between prevention focus and these two outgroup contact measures. Overall, future research, as implied by the updated models noted above (Figures 12 and 13), should consider reconceptualizing contact orientations as separate approach and avoidance constructs.

There are also some methodological limitations across the studies. Study 1 addressed status hypotheses with a non-experimental indicator (i.e., White or Latino identification), which potentially confounds status findings with other White and Latino variables (e.g., group size and culture). Study 2 addressed this limitation by manipulating status directly. But Study 1 status
confounding is still important to consider. For example, promotion focus findings were different across studies, which a factor such as control potential could explain (Roseman, 2001). However, different findings across studies could instead be because of something associated with Whites or Latinos that was not present in Study 2. Second, results on the relationships between regulatory focus and contact orientations were correlational; this limits causal interpretations. There is an ongoing debate in the mediation literature, in that it is impossible to manipulate a mediating variable (e.g., regulatory focus) along with an independent variable (e.g., threat), particularly because an independent variable is hypothesized to influence this mediating variable (Muthén & Asparouhov, 2014). Therefore, mediation results were not fully causal, which limits interpretations. For example, the mediation results were interpreted as threat causing promotion focus, which explained contact orientations. However, it could instead be the case that threat causes both promotion focus and contact orientations, but without promotion focus as an explanation for a contact process. There is currently not a clear statistical solution to this issue (Muthén & Asparouhov, 2014). This limitation is somewhat addressed as manipulated regulatory focus in previous research (e.g., Shah et al., 2004) has demonstrated causal support for some of the present correlational paths.

Conclusion

“Segregation now! Segregation tomorrow! Segregation forever!” Those were the infamous words of Alabama Governor George Wallace in his efforts to stop racial/ethnic integration at the University of Alabama in 1963. Despite his atrocious stance, Wallace later changed. He eventually met with the Black students he attempted to segregate, offered personal apologies, and even called one of the students – Vivian Malone – “an icon of civil rights” (Norris, 2013). How could someone change so drastically? There are likely a number of reasons.
Threat perceptions could be one. Wallace may have seen Black students as a threat to his ingroup’s educational resources, causing regulatory focus responses that, in turn, explained why he blocked a school door shouting, “Segregation now!” But why the change? If the present manipulations are any indicator – a news article and a group competition – threat perceptions might be relatively easy to elicit, and to stop. Wallace makes me hopeful that, by better understanding the psychological process of segregation, we can know when segregation is likely and how to stop it. The present research takes a first step in doing so, which might just prevent future, “Segregation now!” debacles.
Notes

1 In Study 1, cases were excluded based on missing outcome data. Therefore, missing data analyses could not be performed on outcome variables (i.e., regulatory focus and contact orientations). However, as noted in text, excluded cases were not associated with race / ethnicity or the threat conditions, which were the two key predictor variables for analyses. This indicates that being a White or Latino participant (i.e., status), or reading the threat or control articles (i.e., threat), were not reasons for participants not finishing the study. That is, at least in reference to the current predictor variables, missing data appears to be missing completely at random.

2 In Study 1, the SEM that included all observed variables (as described in Table 1) did not fit the data well (CFI = .669, RMSEA = .120 (90% CI [.114, .126]), SRMR = .104, $\chi^2/df = 1266.183/212 = 5.97$). Looking at observed-latent variable estimates and modification indices, it appeared that there were some problematic items, including one prevention focus item (“…focused on the jobs I ought to have.”), one promotion focus item (“…achieving successful employment.”), and two contact orientation items (“…avoid…” and “…have nothing to do with…” toward both the outgroup and ingroup). Thus, these items were excluded from analyses, and the model excluding these items fit well (as described in text). Although the CFI (.944) in the model for analyses was somewhat lower than the typical .95 suggestion, the pattern of other fit indices is congruent with recommendations (e.g., SRMR ≤ .08, $\chi^2/df \leq 3$; Schrieber et al., 2010).

3 In addition to group size being balanced across the threat and status conditions in Study 2, group size was also likely not an issue based on its relation to study measures. Looking at correlations with the constructs (of Table 6), group size was not correlated with prevention focus ($r = -.026$, $p = .701$), promotion focus ($r = -.004$, $p = .955$), outgroup contact ($r = -.028$, $p =$
.685), or ingroup contact ($r = .021$, $p = .757$). That is, group size was not correlated with key constructs of the present model and thus likely did not pose an issue for hypothesis tests.

4 In Study 2, the SEM that included all observed variables (as described in Table 4) did not fit the data well. Observed-latent variable estimates and modification indices were used to detect items that did not fit well. These items included one prevention focus item (“…focused on the points I ought to have.”), one promotion focus item (“…focused on the points I should ideally have.”), and the outgroup and ingroup contact items that were reverse-coded (“…avoid…”, “…having nothing to do with…”, and “…keep away from…”). These items were therefore excluded in analyses, and the model fit well (as described in text). Although the CFI (.90) in the model for analyses was somewhat lower than the typical .95 suggestion, the pattern of other fit indices is congruent with recommendations (e.g., SRMR $\leq .08$, $\chi^2/df \leq 3$; Schrieber et al., 2010).

5 This indirect effect in Study 2 flows from the patterns of some results (from Hypotheses 2 and 3), such that (for high status groups) threat increased promotion focus, and promotion focus increased ingroup contact. However, this is in contrast to the direct effect (from Hypothesis 1), which showed that (again for high status groups) threat decreased ingroup contact. As previously noted, this direct effect should be interpreted with caution as the status-by-threat interaction term did not significantly influence ingroup contact. Nonetheless, if this is a real direct effect, this is what others have termed competitive mediation (Zhao, Lynch, & Chen, 2010). An example from this literature noted that condom availability could decrease sexually transmitted diseases (direct effect). But the opposite pattern could be seen with an indirect effect, such that increased condom availability decreases perceptions of risk, and this decreased risk perception could increase unsafe sex (and sexually transmitted diseases). In other words, the
indirect effect could be positive at the same time as a direct effect being negative. It is a bit of a paradox, but likely points to additional, untested mediators. Again, this may not be the case presently given the lack of a status-by-threat effect on ingroup contact. But this may highlight the need for additional mediators in future theorizing.
### Table 1

**Study 1 Self-Report Items**

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Item Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prev1</td>
<td>I am more focused on preventing job loss, rather than achieving job gains</td>
</tr>
<tr>
<td>Prev2</td>
<td>I am focused on the jobs that I ought to have</td>
</tr>
<tr>
<td>Prev3</td>
<td>I worry about unemployment</td>
</tr>
<tr>
<td>Prev4</td>
<td>I feel that the major goal should be to prevent unemployment</td>
</tr>
<tr>
<td>Prev5</td>
<td>I am afraid of what unemployment will look like in the future</td>
</tr>
<tr>
<td>Prom1</td>
<td>I am more focused on achieving successful employment, rather than preventing unemployment</td>
</tr>
<tr>
<td>Prom2</td>
<td>I am focused on the jobs I should ideally have</td>
</tr>
<tr>
<td>Prom3</td>
<td>I imagine successes in gaining jobs</td>
</tr>
<tr>
<td>Prom4</td>
<td>I feel that the major goal should be to promote job growth</td>
</tr>
<tr>
<td>Prom5</td>
<td>I hope that successful employment will occur in the future</td>
</tr>
<tr>
<td>Outgroup1</td>
<td>To what extent do you want to approach [outgroup name]?</td>
</tr>
<tr>
<td>Outgroup2</td>
<td>To what extent do you want to get to know [outgroup name]?</td>
</tr>
</tbody>
</table>
| Outgroup3 | To what extent do you want to increase the amount of time you have contact with [outgroup name]?
| Outgroup4<sup>a</sup> | To what extent do you want to avoid [outgroup name]?
| Outgroup5<sup>a</sup> | To what extent do you want to have nothing to do with [outgroup name]?
| Ingroup1  | To what extent do you want to approach [ingroup name]?                       |
| Ingroup2  | To what extent do you want to get to know [ingroup name]?                   |
| Ingroup3  | To what extent do you want to increase the amount of time you have contact with [ingroup name]?
| Ingroup4<sup>a</sup> | To what extent do you want to avoid [ingroup name]?
| Ingroup5<sup>a</sup> | To what extent do you want to have nothing to do with [ingroup name]?

*Note.* “Prev” = Prevention Focus, “Prom” = Promotion Focus, “Outgroup” = Outgroup Contact Orientation, and “Ingroup” = Ingroup Contact Orientation. Contact orientation items were worded toward the respective outgroup and ingroup (e.g., for White / Caucasian participants, "Hispanics / Latinos" was used for the outgroup items, and "Whites / Caucasians" was used for the ingroup items). All items were responded to on a 1 (*not at all*) to 7 (*extremely*) Likert scale.

<sup>a</sup> Denotes items that were reverse-coded.
Table 2  
*Study 1 Item Means, Standard Deviations, and Correlations*

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>17</th>
<th>18</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prev1</td>
<td>3.57 (1.62)</td>
<td>.04</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Prev2</td>
<td>4.7 (1.57)</td>
<td>.03</td>
<td>.01</td>
<td>.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Prev3</td>
<td>4.17 (1.92)</td>
<td>.31</td>
<td></td>
<td></td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>Prev4</td>
<td>4.87 (1.66)</td>
<td>.31</td>
<td>.13</td>
<td></td>
<td>.34</td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>Prev5</td>
<td>4.55 (1.73)</td>
<td>.33</td>
<td>.13</td>
<td>.66</td>
<td>.36</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>Prom1</td>
<td>5.09 (1.61)</td>
<td>-.15</td>
<td>.45</td>
<td>-.17</td>
<td>-.08</td>
<td>-.19</td>
<td></td>
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<tr>
<td>7</td>
<td>Prom2</td>
<td>4.83 (1.55)</td>
<td>.02</td>
<td>.67</td>
<td>.14</td>
<td>.13</td>
<td>.07</td>
<td>.45</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>Prom3</td>
<td>5.21 (1.49)</td>
<td>-.03</td>
<td>.36</td>
<td>.00</td>
<td>.10</td>
<td>-.01</td>
<td>.43</td>
<td>.42</td>
<td></td>
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<tr>
<td>9</td>
<td>Prom4</td>
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<td>.25</td>
<td>.12</td>
<td>.26</td>
<td>.19</td>
<td>.23</td>
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<td>.18</td>
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<td>Outgroup4a</td>
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<td>-.01</td>
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<td>.07</td>
<td>-.10</td>
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<td>-.08</td>
<td>.11</td>
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<td>.13</td>
<td>.13</td>
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<td>.18</td>
<td>.13</td>
<td>.15</td>
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<td>.07</td>
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<td>.07</td>
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<td>.82</td>
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<tr>
<td>18</td>
<td>Ingroup3</td>
<td>4.25 (1.9)</td>
<td>.12</td>
<td>.10</td>
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<td>.66</td>
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<tr>
<td>19</td>
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<td>.04</td>
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<td>.14</td>
<td>.12</td>
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<td>.19</td>
</tr>
<tr>
<td>20</td>
<td>Ingroup5a</td>
<td>6.29 (1.36)</td>
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<td>.02</td>
<td>.06</td>
<td>.04</td>
<td>.03</td>
<td>.06</td>
<td>.09</td>
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<td>.38</td>
<td>.41</td>
<td>.28</td>
<td>.28</td>
<td>.18</td>
</tr>
</tbody>
</table>

*Note.* Variables are described in Table 1.  
*a* Denotes items that were reverse-coded.  

\[ N = 345 \]
Table 3

Study 1 Construct Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Prevention Focus</td>
<td>4.37 (1.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Promotion Focus</td>
<td>5.35 (0.99)</td>
<td>.25***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Outgroup Contact</td>
<td>4.92 (1.21)</td>
<td>.05</td>
<td>.26***</td>
<td></td>
</tr>
<tr>
<td>4 Ingroup Contact</td>
<td>5.28 (1.17)</td>
<td>.16**</td>
<td>.24***</td>
<td>.30***</td>
</tr>
</tbody>
</table>

*Note.* These constructs are the average of the observed items included in SEM analyses (see Figures 6 and 7). These constructs are distinct from latent variables, and the results in this table were included as preliminary descriptive analyses, not hypothesis tests. **p < .01. ***p < .001.

N = 345
<table>
<thead>
<tr>
<th>Item Name</th>
<th>Item Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prev1</td>
<td>I am more focused on preventing loss of points, rather than achieving gains of points.</td>
</tr>
<tr>
<td>Prev2</td>
<td>I am focused on the points that I ought to have.</td>
</tr>
<tr>
<td>Prev3</td>
<td>I worry about losing points.</td>
</tr>
<tr>
<td>Prev4</td>
<td>I feel that the major goal should be to prevent loss of points.</td>
</tr>
<tr>
<td>Prom1</td>
<td>I am more focused on achieving successful gains of points, rather than losing points.</td>
</tr>
<tr>
<td>Prom2</td>
<td>I am focused on the points I should ideally have.</td>
</tr>
<tr>
<td>Prom3</td>
<td>I imagine successes in gaining points.</td>
</tr>
<tr>
<td>Prom4</td>
<td>I feel that the major goal should be to promote gains of points.</td>
</tr>
<tr>
<td>Outgroup1</td>
<td>To what extent do you want to approach the other group?</td>
</tr>
<tr>
<td>Outgroup2</td>
<td>To what extent do you want to get to know the other group?</td>
</tr>
<tr>
<td>Outgroup3</td>
<td>To what extent do you want to increase the amount of time you have contact with the other group?</td>
</tr>
<tr>
<td>Outgroup4\textsuperscript{a}</td>
<td>To what extent do you want to avoid the other group?</td>
</tr>
<tr>
<td>Outgroup5\textsuperscript{a}</td>
<td>To what extent do you want to have nothing to do with the other group?</td>
</tr>
<tr>
<td>Outgroup6\textsuperscript{a}</td>
<td>To what extent do you want to keep away from the other group?</td>
</tr>
<tr>
<td>Ingroup1</td>
<td>To what extent do you want to approach your group?</td>
</tr>
<tr>
<td>Ingroup2</td>
<td>To what extent do you want to get to know your group?</td>
</tr>
<tr>
<td>Ingroup3</td>
<td>To what extent do you want to increase the amount of time you have contact with your group?</td>
</tr>
<tr>
<td>Ingroup4\textsuperscript{a}</td>
<td>To what extent do you want to avoid your group?</td>
</tr>
<tr>
<td>Ingroup5\textsuperscript{a}</td>
<td>To what extent do you want to have nothing to do with your group?</td>
</tr>
<tr>
<td>Ingroup6\textsuperscript{a}</td>
<td>To what extent do you want to keep away from your group?</td>
</tr>
</tbody>
</table>

\textit{Note.} “Prev” = Prevention Focus, “Prom” = Promotion Focus, “Outgroup” = Outgroup Contact Orientation, and “Ingroup” = Ingroup Contact Orientation. All items were responded to on a 1 (\textit{not at all}) to 7 (\textit{extremely}) Likert scale. 

\textsuperscript{a} Denotes items that were reverse-coded.
### Table 5

**Study 2 Item Means, Standard Deviations, and Correlations**

|       | M (SD) | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21      |
|-------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Prev1 | 2.47 (1.71) | .11     |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Prev2 | 4.67 (1.88) |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Prev3 | 2.74 (1.93) | .41     | .24     |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Prev4 | 3.01 (1.95) | .55     | .10     | .43     |         |         |         |         |         |         |         |         |         |         |         |         |
| Prom1 | 5.82 (1.44) | -.24    | .04     | -.08    | -.05   |         |         |         |         |         |         |         |         |         |         |         |
| Prom2 | 4.54 (1.88) | -.14    | .41     | .13     | -.05   | .03     |         |         |         |         |         |         |         |         |         |         |
| Prom3 | 5.62 (1.55) | -.22    | .11     | .13     | .06    | .34     | .22     |         |         |         |         |         |         |         |         |         |
| Prom4 | 5.74 (1.49) | -.26    | .07     | -.07    | -.06   | .39     | .23     | .52     |         |         |         |         |         |         |         |         |
| Outgroup1 | 3.73 (1.68) | .07     | .04     | .01     | .10    | .01     | .05     | .10     | .05     |         |         |         |         |         |         |         |
| Outgroup2 | 3.78 (1.71) | .13     | -.02    | .00     | .17    | .00     | .02     | .14     | .06     | .68     |         |         |         |         |         |         |
| Outgroup3 | 3.28 (1.68) | .10     | -.02    | -.01    | .06    | -.05    | .05     | .07     | -.06    | .62     | .69     |         |         |         |         |         |
| Outgroup4 | 5.64 (1.8)  | .07     | -.09    | -.09    | .02    | -.06    | -.22    | -.10    | -.13    | .25     | .33     | .32     |         |         |         |         |
| Outgroup5 | 5.44 (1.62) | -.02    | -.09    | -.03    | .02    | -.05    | -.07    | -.03    | -.03    | .30     | .24     | .26     | .65     |         |         |         |
| Outgroup6 | 5.58 (1.69) | .03     | -.16    | -.13    | -.07   | -.14    | -.20    | -.08    | -.15    | .33     | .36     | .30     | .75     | .61     |         |         |         |
| Ingroup1 | 5.46 (1.46) | -.17    | .15     | .02     | -.07   | .16     | .13     | .32     | .32     | .23     | .23     | .08     | -.02    | .08     | .03     |         |         |         |         |
| Ingroup2 | 4.88 (1.60) | .01     | .05     | .04     | .12    | .10     | .14     | .25     | .25     | .41     | .46     | .33     | -.01    | .10     | .06     | .51     |         |         |         |
| Ingroup3 | 4.36 (1.70) | -.01    | .04     | -.01    | -.07   | .10     | .13     | .21     | .20     | .37     | .35     | .41     | -.08    | .03     | -.04    | .37     | .62     |         |         |         |
| Ingroup4 | 6.51 (1.10) | -.03    | -.05    | -.10    | -.05   | -.01   | -.17    | .08     | .10     | .07     | .15     | .06     | .27     | .19     | .27     | .45     | .36     | .24     |         |         |         |
| Ingroup5 | 6.31 (1.22) | -.15    | .02     | -.01    | -.08   | .03     | -.01    | .13     | .19     | .10     | .06     | .11     | .11     | .21     | .21     | .41     | .32     | .18     | .52     |         |         |
| Ingroup6 | 6.49 (1.02) | -.05    | -.05    | -.01    | -.11   | .00     | -.14    | .12     | .14     | .13     | .20     | .11     | .22     | .24     | .33     | .37     | .35     | .29     | .64     | .61     |         |
| OutSeat | -102.01 (17.22) | -.12    | -.11    | -.18    | -.17   | -.06    | -.01    | .10     | .08     | .07     | .06     | -.05    | -.04    | .07     | .05     | .01     | .05     | -.01    | .05     | .06     |         |
| InSeat  | -42.12 (7.49) | .01     | .09     | .01     | .06    | .02     | -.06    | -.02    | -.02    | .05     | .02     | .06     | .05     | -.02    | -.05    | -.01    | .07     | .03     | .14     | .02     | -.01   |

*Note.* Variables are described in Table 3, with the exception of "OutSeat" and "InSeat". These refer to the seating distance (behavioral measures) of outgroup and ingroup contact, respectively.

*a* Denotes items that were reverse-coded.

*Ns* range from 209 to 215.
### Table 6

**Study 2 Construct Means, Standard Deviations, and Correlations**

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>1</td>
<td>Prevention Focus</td>
<td>3.23 (1.29)</td>
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<tr>
<td>2</td>
<td>Promotion Focus</td>
<td>5.43 (1.07)</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Outgroup Contact</td>
<td>4.84 (1.27)</td>
<td>-.01</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ingroup Contact</td>
<td>5.93 (0.95)</td>
<td>-.04</td>
<td>.23**</td>
<td>.30***</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>OutSeat</td>
<td>-102.01 (17.22)</td>
<td>.21**</td>
<td>-.04</td>
<td>-.03</td>
<td>-.04</td>
</tr>
<tr>
<td>6</td>
<td>InSeat</td>
<td>-42.12 (7.49)</td>
<td>-.07</td>
<td>.03</td>
<td>-.02</td>
<td>-.06</td>
</tr>
</tbody>
</table>

*Note.* "OutSeat" and "InSeat" and refer to the seating distance (behavioral measures) of outgroup and ingroup contact, respectively. Other constructs (variables 1 to 4) are the average of the observed items included in SEM analyses (see Figures 10 and 11). These constructs are distinct from latent variables, and the results in this table were included as preliminary descriptive analyses, not hypothesis tests.

**p < .01. ***p < .001.

Ns range from 215 to 216.
Figures

**Figure 1.** Moderated mediation threat-contact model. Note that the outgroup refers to an outgroup of dissimilar status (i.e., a low status outgroup for a high status ingroup, and a high status outgroup for a low status ingroup).

**Figure 2.** Depiction of intergroup contact orientations – continuums of avoidance-approach that apply to both an outgroup and ingroup.
**Regulatory Focus**

- Prevention Focus
- Promotion Focus

*Figure 3.* Depiction of regulatory focus, which consists of two motivational states – prevention focus and promotion focus.

**Status (Low vs. High)**

- Outgroup Resource Threat
  - Prevention Focus
  - Promotion Focus

*Figure 4.* Moderated mediation threat-contact model. Positive and negative signs represent hypothesized positive and negative effects, respectively. Status is hypothesized to moderate the paths between threat and regulatory focus, and threat and contact orientations. Bolded paths from regulatory focus variables to contact orientation variables represent which effect is hypothesized to be stronger (i.e., a stronger negative effect for the prevention focus-outgroup continuum over the promotion focus-outgroup continuum, and a stronger positive effect for the promotion focus-ingroup continuum over the prevention focus-ingroup continuum).
A. High Status Hypotheses

Status X Outgroup Resource Threat

Prevention Focus

Intergroup Contact Orientations

Outgroup Avoidance ←→ Approach

B. Low Status Hypotheses

Status X Outgroup Resource Threat

Promotion Focus

Intergroup Contact Orientations

Ingroup Avoidance ←→ Approach

Figure 5. Moderated-mediation threat-contact model. High and low status paths hypothesized to be strongest presented in panels A and B, respectively (see Figure 4 for the full moderated mediation model). Positive and negative signs refer to hypothesized positive and negative relationships, respectively.
A. High Status Results

![Diagram of the moderated mediation threat-contact model for high status groups](image)

B. Low Status Results

![Diagram of the moderated mediation threat-contact model for low status groups](image)

**Figure 6.** Moderated mediation threat-contact model – Study 1 SEM results. Panels A and B present results separately for high and low status groups, respectively, but this was run as a single model (status-by-threat interaction effects are described in text). Dummy coding was used for threat (relative to the no threat condition) observed variables. All other variables were modeled as latent, with observed-latent variable estimates presented separately in Figure 7. All path estimates were standardized. Bolded paths represent relationships hypothesized to be stronger.

† $p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$. 
Figure 7. Moderated mediation threat-contact model – Study 1 SEM observed-latent variable results. This corresponds to the path model in Figure 6. Observed variables are described in Table 1. All estimates were standardized, and all were significant ($p \leq .001$).
Figure 8. Study 2 procedures. This depiction notes an example data collection session with six participants assigned to groups of three people each. Group sizes varied, but were counterbalanced across status and threat conditions. Further, the “Under-Estimator” and “Over-Estimator” group names were randomly assigned and counterbalanced across the status and threat conditions.
Figure 9. Study 2 table arrangements for behavioral contact orientation measure. The two rectangles represent an aerial view of the two tables. "U"s and "O"s represent seat choices for the Under-Estimator and Over-Estimator groups, respectively. The group names (and threat and status conditions) were counterbalanced across the left and right tables. Tables were 36 inches wide by 84 inches long, and each table was spaced approximately 45 inches apart. Seating distance was measured in inches from the center of the seatback of each participant to the center of the seatback of all ingroup members (at their table) and outgroup members (at the other table).
Figure 10. Moderated mediation threat-contact model – Study 2 SEM results. Panels A and B present results separately for high and low status groups, respectively, but this was run as a single model (status-by-threat interaction effects are described in text). Dummy coding was used for threat (relative to the no threat condition) observed variables. All other variables were modeled as latent, with observed-latent variable estimates presented separately in Figure 10. All path estimates were standardized. Bolded paths represent relationships hypothesized to be stronger.

$^{†} p < .10. * p < .05. ** p < .01. *** p < .001.$
Figure 11. Moderated mediation threat-contact model – Study 2 SEM observed-latent variable results. This corresponds to the path model in Figure 10. Observed variables are described in Table 4. All estimates were standardized, and all were significant at $p < .001$ (with the exception of the prevention-promotion latent correlation, which was $p = .044$).
Figure 12. Post-hoc moderated mediation threat-contact model with promotion focus mediation. This includes updated predictions based on post-hoc threat appraisal (control potential) explanations of Study 1 and 2 findings. Positive and negative signs represent hypothesized positive and negative effects, respectively.
Figure 13. Post-hoc moderated mediation threat-contact model with prevention focus mediation. This includes updated predictions based on post-hoc threat appraisal (certainty) explanations of Study 1 and 2 findings. Positive and negative signs represent hypothesized positive and negative effects, respectively; “ns” refers to paths without predictions (i.e., likely nonsignificant).
Appendix A

Pilot Study Methods

Procedures and Design

The Pilot Study recruited White and Latino participants with Amazon’s MTurk using the same inclusion criteria as Study 1. If qualified, participants completed an online consent form, read a news article to manipulate threat, and then completed measures of threat and status perceptions. Participants were then debriefed and compensated. Using a 2 (Status: low status, high status) X 2 (Threat: no threat, threat) design, the primary aim of the Pilot Study was to validate a resource threat manipulation for Study 1. Two additional aims were to assess if White and Latino identification is a valid indicator of status, and if this threat manipulation similarly works for both of these groups.

Participants

An a priori power analysis, expecting a medium effect size of the threat manipulation and using traditional standards (power at .80 and α at .05), indicated a target sample of approximately 120 participants. The initial sample nearly met this goal (N = 111), but was reduced to a total of 89 participants because of excluding data that were incomplete or low quality (e.g., responding 7 to all Likert items). Notably, these excluded cases were not associated with gender (χ²(1) = 1.85, p = .173), race / ethnicity (χ²(1) = 0.08, p = .775), or threat condition (χ²(1) = 0.18, p = .670). The final sample included 51 Whites / Caucasians, 32 Hispanics / Latinos. Six participants identified as multiracial (e.g., Hispanic / Latino and Black / African American) and were excluded from analyses. The sample was primarily male (61.8%) and had a wide range in age (M = 31.17, SD =
Status Indicator

White / Caucasian or Hispanic / Latino identification served as a non-experimental indicator of high or low status, respectively (Eibach & Keegan, 2006; Ellemers et al., 2010).

Resource Threat Manipulation

An outgroup resource threat was manipulated by having participants read a brief article about a racial / ethnic outgroup (similar to previous research; Jackson & Esses, 2000; Matthews & Levin, 2012; adapted from an actual New York Times article; Scheiber, 2015). Specifically, participants were randomly assigned to a threat or no threat condition. In the threat condition, White participants read that, since the U.S. recession, Latinos were gaining jobs more than other groups. This reading included a line graph that showed job growth for Latinos from 2010 to 2014. This was an actual graph from the 2015 Economic Report of the President (U.S. Government Publishing Office, 2015), but edited to indicate that this applied specifically to Latinos. Similarly, Latino participants in the threat condition read identical information, but phrased toward Whites. In the no threat condition, for both White and Latino participants, the information and graph were similar to the threat condition, but no groups were mentioned. For all conditions, the manipulation was bolstered with an open-ended item: “Please summarize this article in your own words.”.

Measures

Resource threat perceptions. Participants completed a validated measure of threat perceptions (adapted from Cottrell & Neuberg, 2005). For example, one item for White
participants stated: “As viewed by most Whites / Caucasians, to what extent will Hispanics / Latinos threaten jobs?” This was rephrased accordingly for Latino participants. The “As viewed by most [ingroup members]…” portion of these items was included to decrease social desirability responses (similar to Cuddy et al., 2007). Participants responded to these items on a 1 (not at all) to 7 (extremely) Likert scale ($M = 4.02$, $SD = 1.19$, $\alpha = .84$).

**Status.** Additionally, participants completed a Likert measure of ingroup status. For example, one item asked: “In America, which racial / ethnic group do you feel has more resources to get ahead in life - Whites / Caucasians or Hispanics / Latinos?” Participants responded to these items on Likert scale tailored to each item, such as 1 (Whites / Caucasians have far more resources) to 7 (Hispanics / Latinos have far more resources). These Likert anchors were counterbalanced and coded such that higher values indicated higher ingroup status ($M = 4.19$, $SD = 2.20$, $\alpha = .90$).

**Pilot Study Results**

First, I validated that White or Latino identification is an indicator of high or low status, respectively. I did so with a $t$-test between White and Latino participants on the measure of ingroup status, $t(81) = 11.86, p < .001$. Whites perceived their group to be much higher status ($M = 5.57$) than Latinos ($M = 1.99$), $d = 1.63$. Thus, throughout analyses in my dissertation, I refer to Whites as high status, and Latinos as low status.

Next, I did a 2 (Status: low status, high status) X 2 (Threat: no threat, threat) ANOVA on the threat perception outcome. I hypothesized that there would be a main effect of increased threat perceptions in the threat condition relative to the no threat conditions (validating the threat
and without a status interaction (validating the manipulation for both high and low status groups). In support of the manipulation, the threat condition \((M = 4.26)\) had marginally higher threat perceptions than the no threat condition \((M = 3.77), F(1, 79) = 3.12, p = .081, d = .41\). The finding was marginal, but it was a medium to large effect. However, the status-by-threat interaction was approaching significance, \(F(1, 79) = 2.48, p = .12\), indicating that this manipulation may not work for both low and high status groups. Specifically, the threat manipulation appeared to work well for the high status group \((\text{threat } d = 0.71)\), but not the low status group \((d = 0.05)\).

The Pilot Study was designed to validate a threat manipulation and a racial / ethnic indicator of status. This approach was somewhat supported. White or Latino identification was a good indicator of high or low status, as expected. Additionally, this threat manipulation appeared to increase threat perceptions, but more so for the high status group.

**Pilot Study Replication**

To address the above limitations, I replicated the Pilot Study with some tweaks to the threat manipulation. The primary goal was to make the manipulation more personal for participants in an effort to have similar effects regardless of status. Specifically, rather than simply asking participants to summarize the manipulation reading, the open-ended item following the manipulation was rephrased to: “Please summarize how this article relates to your own experiences.” Additionally, to make the threat perception measure more personal (and to more directly relate the measure to the manipulation reading), I included a novel threat item: “To what extent did this article make you feel that [the outgroup] are a threat?” on a 1 (not at all) to 7
(extremely) Likert scale ($M = 2.33$, $SD = 1.79$). As the above results indicated that the threat effect size is potentially large (e.g., $d = .71$ for high status), I recruited a smaller sample for this replication ($N = 39$, 19 White / Caucasian, 20 Hispanic / Latino, 71.8% male, $M_{Age} = 30.67$, $SD_{Age} = 11.21$).

Using the updated threat perception item in a 2 (Status: low status, high status) X 2 (Threat: no threat, threat) ANOVA, the results supported the threat manipulation. There was a main effect of threat, $F(1, 35) = 8.82$, $p = .005$, $d = 0.96$. And there was not a status-by-threat interaction, $F(1, 35) = 1.00$, $p = .323$, partial $\eta^2 = .028$. Overall, this pattern of results indicates that this threat manipulation increases threat perceptions as expected, and it does so for both high and low status groups. Therefore, this updated threat manipulation was used for Study 1.
Appendix B

Study 1 Materials

[All of the following Study 1 materials were used in an online questionnaire. Text in brackets are notes, which were not presented to participants. Lines across the page represent page breaks in the online questionnaire.]

[Prescreening items presented before consent. Participants had to be 18 years or older and self-identify as either White / Caucasian or Hispanic / Latino in order to qualify for participation.]

What is your age (in years)?
_____________________________________________

What racial / ethnic group best describes you?

[ ] Asian
[ ] black / African-American
[ ] white / Caucasian
[ ] Hispanic / Latino
[ ] Native American
[ ] Arab
[ ] Multi-Racial / Ethnic
[ ] Other

Please specify your race / ethnicity.

_____________________________________________
_____________________________________________
[Informed Consent]

THE CITY UNIVERSITY OF NEW YORK
John Jay College
Department of Psychology
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Research Study: Economic Perceptions

Principal Investigator: Brian M. Johnston, MA

Faculty Advisor: Demis E. Glasford, PhD

You are being asked to participate in a research study because you are 18 years of age or older and meet demographic inclusion criteria.

Purpose:
The purpose of this research study is to understand how people respond to reading and writing about economic data. Research designs often require that the full intent of the study not be explained prior to participation. Although we have described the general nature of the tasks that you will be asked to perform, the full intent of the study will not be explained to you until after the completion of the study. At that time, you will be given an opportunity to ask any questions you might have about the hypotheses and the procedures used in the study.

We plan to enroll approximately 1000 participants into this study.

Procedures:
If you volunteer to participate in this research study, we will ask you to do the following:

Participants in this study will be required to briefly read and write about economic data. Then, participants will complete a brief questionnaire.

Time Commitment:
Your participation in this research study is expected to last for a total of ten to fifteen minutes.

Potential Risks or Discomforts:
The foreseeable risks of participation in this study are minimal. Some participants may become upset or uncomfortable by writing or reading about topics presented in this study. We anticipate that this uncomfortable feeling, however, will be short-lived. In order to minimize these risks you may withdraw from this study at any time without any penalty.

Potential Benefits:

The possible benefits to you are that you will learn how psychology studies are conducted.

The potential benefits to society are a greater understanding of how people respond to economic data.

Payment for Participation:
You will be compensated $.50.

Confidentiality:
We will make our best efforts to maintain confidentiality of any information that is collected during this research study, and that can identify you. We will disclose this information only with your permission or as required by law.

We will protect your confidentiality by doing the following. The data obtained from you will be collected via a questionnaire. Data will be protected by not collecting identifying information in the questionnaire and securely storing the data in a file, on a password protected computer, in secure areas.

The research team, authorized CUNY staff, and government agencies that oversee this type of research may have access to research data and records in order to monitor the research. Research records provided to authorized, non-CUNY individuals will not contain identifiable information about you. Publications and/or presentations that result from this study will not identify you by name.

Participants' Rights:

Your participation in this research study is entirely voluntary. If you decide not to participate, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled.

You can decide to withdraw your consent and stop participating in the research at any time,
without any penalty.

Questions, Comments or Concerns:
If you have any questions, comments or concerns about the research, you can contact the Principal Investigator, Brian M. Johnston, at bjohnston1@gradcenter.cuny.edu.

If you have questions about your rights as a research participant, or you have comments or concerns that you would like to discuss with someone other than the researchers, please call the CUNY Research Compliance Administrator at 646-664-8918. Alternately, you can write to:

CUNY Office of the Vice Chancellor for Research
Attn: Research Compliance Administrator
205 East 42nd Street
New York, NY 10017

Statement of Consent:
I have read the above description of this research and I understand it. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions that I may have will also be answered by the principal investigator of the research study. I voluntary agree to participate in this study.

By checking the box below I have not waived any of my legal rights to which I would otherwise be entitled. Please print or save a copy of this consent form for your records.

[ ] Please check here to indicate that you have read this consent form, fully understand the nature and consequences of participation, have had all questions regarding participation in this study answered satisfactorily, and agree to the Statement of Consent.
After the recession, *Job Growth for Hispanics / Latinos is Outpacing Other Groups*

After the recession in the United States, racial / ethnic groups have competed for jobs. Looking at recent Census data, we see that *Hispanics / Latinos* are gaining more jobs than other groups. The following graph illustrates this pattern.

![Hispanic / Latino Job Growth](image)

Please summarize how this article relates to your own experiences.
After the Recession, Job Growth for Whites / Caucasians is Outpacing Other Groups

After the recession in the United States, racial / ethnic groups have competed for jobs. Looking at recent Census data, we see that Whites / Caucasians are gaining more jobs than other groups. The following graph illustrates this pattern.

Please summarize how this article relates to your own experiences.
[No threat condition for White and Latino participants. Approximately 50% of White participants and 50% of Latino participants were randomly assigned to this page.]

Job Growth in the United States

In the United States, there has been economic recovery. Looking at recent Census data, we see job growth. The following graph illustrates this pattern.

Please summarize how this article relates to your own experiences.
[Questionnaire items (regulatory focus) for White and Latino participants. The following items were presented in a random order.]

The following items describe different feelings and attitudes. Please respond to the following items by considering how much you experience these feelings and attitudes.

I am more focused on preventing job loss, rather than achieving job gains.

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

I am more focused on achieving successful employment, rather than preventing unemployment.

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

I am focused on the jobs that I ought to have.

( ) 1. Not at all
( ) 2.
I am focused on the jobs I should ideally have.

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

I worry about unemployment.

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

I imagine successes in gaining jobs.

( ) 1. Not at all
I feel that the major goal should be to prevent unemployment.

I feel that the major goal should be to promote job growth.

I am afraid of what unemployment will look like in the future.
I hope that successful employment will occur in the future.

[Questionnaire items for White and Latino participants. These items measured outgroup contact orientations for White participants, but ingroup contact for Latino participants. The following items were presented in a random order.]

For the following questions, please indicate to what extent you want to behave in this manner toward Hispanics / Latinos.

To what extent do you want to avoid Hispanics / Latinos?

( ) 1. Not at all
( ) 2.
To what extent do you want to have nothing to do with Hispanics / Latinos?

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

To what extent do you want to approach Hispanics / Latinos?

( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

To what extent do you want to get to know Hispanics / Latinos?

( ) 1. Not at all
To what extent do you want to increase the amount of time you have contact with Hispanics / Latinos?

( ) 1. Not at all

( ) 2.

( ) 3.

( ) 4. Moderately

( ) 5.

( ) 6.

( ) 7. Extremely

[Questionnaire items for White and Latino participants. These items measured ingroup contact orientations for White participants, but outgroup contact for Latino participants. The following items were presented in a random order.]

For the following questions, please indicate to what extent you want to behave in this manner toward Whites / Caucasians.

To what extent do you want to avoid Whites / Caucasians?

( ) 1. Not at all

( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

To what extent do you want to have nothing to do with Whites / Caucasians?
( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

To what extent do you want to approach Whites / Caucasians?
( ) 1. Not at all
( ) 2.
( ) 3.
( ) 4. Moderately
( ) 5.
( ) 6.
( ) 7. Extremely

To what extent do you want to get to know Whites / Caucasians?
( ) 1. Not at all
To what extent do you want to increase the amount of time you have contact with Whites / Caucasians?

1. Not at all
2. 
3. 
4. Moderately
5. 
6. 
7. Extremely

To what extent do you want to increase the amount of time you have contact with Whites / Caucasians?

1. Not at all
2. 
3. 
4. Moderately
5. 
6. 
7. Extremely

[Demographic questionnaire items for White and Latino participants. The first three items were on perceptions of group status, with the Likert end points randomly in the presented order, or in the reverse order.]

For each of the following statements please indicate the number that best describes how much you disagree or agree with each statement, or your response to the question.

In America, which racial / ethnic group do you feel has more resources to get ahead in life - Whites / Caucasians or Hispanics / Latinos?

1. Whites / Caucasians have far more resources to get ahead in life
2. 
3. Whites / Caucasians and Hispanics / Latinos have the same resources to get ahead in life

5.

6.

7. Hispanics / Latinos have far more resources to get ahead in life

When you think about how America tends to treat Whites / Caucasians vs. Hispanics / Latinos, which group is at a greater disadvantage compared to the other?

1. Whites / Caucasians are at a greater disadvantage

2.

3.

4. Whites / Caucasians and Hispanics / Latinos are at the same disadvantage

5.

6.

7. Hispanics / Latinos are at a greater disadvantage

When you think about how America tends to treat Whites / Caucasians vs. Hispanics / Latinos, which group has greater privilege compared to the other?

1. Whites / Caucasians have greater privilege

2.

3.

4. Whites / Caucasians and Hispanics / Latinos have the same privilege

5.

6.

7. Hispanics / Latinos have greater privilege

Belonging to my racial / ethnic group is an important part of who I am.
( ) 1. strongly disagree
( ) 2. disagree
( ) 3. slightly disagree
( ) 4. neither disagree or agree
( ) 5. slightly agree
( ) 6. agree
( ) 7. strongly agree

I am proud to be a member of my racial / ethnic group.

( ) 1. strongly disagree
( ) 2. disagree
( ) 3. slightly disagree
( ) 4. neither disagree or agree
( ) 5. slightly agree
( ) 6. agree
( ) 7. strongly agree

What is your gender?

[ ] Male
[ ] Female
[ ] Other: ________________________________

Do you consider yourself to be heterosexual or straight; homosexual, gay, or lesbian; or bisexual?

[ ] Heterosexual or straight
[ ] Homosexual, gay, or lesbian
[ ] Bisexual

[ ] Other: _________________________________________________

I am proud to be an American.

( ) 1. strongly disagree
( ) 2. disagree
( ) 3. slightly disagree
( ) 4. neither disagree or agree
( ) 5. slightly agree
( ) 6. agree
( ) 7. strongly agree

Being an American is an important part of who I am.

( ) 1. strongly disagree
( ) 2. disagree
( ) 3. slightly disagree
( ) 4. neither disagree or agree
( ) 5. slightly agree
( ) 6. agree
( ) 7. strongly agree

We hear a lot of talk these days about liberals and conservatives. Here is a scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale?

( ) 1. Extremely liberal
( ) 2. Liberal
( ) 3. Slightly liberal
( ) 4. Moderate, middle of the road

( ) 5. Slightly conservative

( ) 6. Conservative

( ) 7. Extremely Conservative

( ) 8. Don't know

Which political party do you identify with?

[ ] Democrat

[ ] Republican

[ ] Independent

[ ] Other: _________________________________________________

[ ] Don't Know

_________________________________________________

[The following was used to verify that questionnaires were not completed by computer programs.]

Please type the word "complete", in all lower case letters, into the text box below.*

_________________________________________________

[Debriefing]

Thank you for your time! In order to receive payment, please copy and paste the following code into the box on the Amazon MTurk page from which you accessed this survey.

[A random code was presented to participants.]

The present research is concerned with how perceptions of economic data are related to group processes. In particular, this study examines how people might react to economic data if it is about a particular group. Aspects of a group were manipulated. For example, some people focused economic data in reference to a particular group, whereas others focused on economic
data in the absence of a group. We then examined a number of dependent variables, including perceptions, motivations, and likelihood of behaviors toward these groups. Some of these data presentations were obtained from U.S. economic data reports. However, these data are in reference to general job growth, not job growth for any particular group. Thus, any data presentations you may have seen about particular groups were altered for the purposes of this research. Please feel free to contact the Principal Investigator Brian Johnston (bjohnston1@gradcenter.cuny.edu) if you have any additional questions about this study. If you have any questions regarding your rights as a research participant please feel free to contact the John Jay Institutional Review Board Office at jj-irb@jjay.cuny.edu, or (212) 237-8961.
Appendix C

Study 2 Materials

[The following are Study 2 materials, which were presented to groups of participants in a laboratory setting. All materials were presented in writing, unless otherwise noted (there were some verbal instructions). Text in brackets are notes, which were not presented to participants.]

[Informed Consent]

THE CITY UNIVERSITY OF NEW YORK

John Jay College

Department of Psychology

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Research Study: Estimation & Decision Making

Principal Investigator: Brian M. Johnston, MA

Faculty Advisor: Demis E. Glasford, PhD

You are being asked to participate in a research study because you are 18 years of age or older and meet demographic inclusion criteria.

Purpose:

The purpose of this research study is to understand how people make estimations and decisions in group settings. Research designs often require that the full intent of the study not be explained prior to participation. Although we have described the general nature of the tasks that you will be asked to perform, the full intent of the study will not be explained to you until after the completion of the study. At that time, you will be given an opportunity to ask any questions you might have about the hypotheses and the procedures used in the study.

We plan to enroll approximately 750 participants into this study.

Procedures:

If you volunteer to participate in this research study, we will ask you to do the following:

- Participants in this study will be required to make estimations (e.g., counting dots),
complete a questionnaire, and make decisions in group settings.

**Time Commitment:**
Your participation in this research study is expected to last for a total of twenty to thirty minutes.

**Potential Risks or Discomforts:**
The foreseeable risks of participation in this study are minimal. Some participants may become upset or uncomfortable by writing or reading about topics presented in this study. We anticipate that this uncomfortable feeling, however, will be short-lived. In order to minimize these risks you may withdraw from this study at any time without any penalty.

**Potential Benefits:**
- The possible benefits to you are that you will learn how psychology studies are conducted.
- The potential benefits to society are a greater understanding of how people make decisions in group settings.

**Payment for Participation:**
You have a chance to be entered into a raffle for a $100 Amazon gift card.

**Confidentiality:**
We will make our best efforts to maintain confidentiality of any information that is collected during this research study, and that can identify you. We will disclose this information only with your permission or as required by law.

We will protect your confidentiality by doing the following. The data obtained from you will be collected via a questionnaire. Data will be protected by not collecting identifying information in the questionnaire and securely storing the data in a file, on a password protected computer, in secure areas.

The research team, authorized CUNY staff, and government agencies that oversee this type of research may have access to research data and records in order to monitor the research. Research records provided to authorized, non-CUNY individuals will not contain identifiable information about you. Publications and/or presentations that result from this study will not identify you by name.
Participants’ Rights:

- Your participation in this research study is entirely voluntary. If you decide not to participate, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled.

- You can decide to withdraw your consent and stop participating in the research at any time, without any penalty.

Questions, Comments or Concerns:

If you have any questions, comments or concerns about the research, you can contact the Principal Investigator, Brian M. Johnston, at bjohnston1@gradcenter.cuny.edu.

If you have questions about your rights as a research participant, or you have comments or concerns that you would like to discuss with someone other than the researchers, please call the CUNY Research Compliance Administrator at 646-664-8918.

Alternately, you can write to: CUNY Office of the Vice Chancellor for Research, Attn: Research Compliance Administrator, 205 East 42nd Street, New York, NY 10017
**Signature of Participant:**

If you agree to participate in this research study, please sign and date below. You will be given a copy of this consent form to keep.

If you agree to participate in this research study, please sign and date below. You will be given a copy of this consent form to keep.

____________________  _________________________________
Printed Name of Participant

____________________  _________________________________  
Signature of Participant  Date

**Signature of Individual Obtaining Consent**

____________________
Printed Name of Individual Obtaining Consent

____________________  _________________________________  
Signature of Individual Obtaining Consent  Date
“In this study, we are interested in how estimation is related to decision making in group settings. To start, we will have you estimate how many dots are in images, which is an indicator of perceptual style. We will use this information to place you into groups for decision making tasks. With your group, you will make decisions and earn points. If you can make it to ten points, you will be entered in the raffle for the $100 Amazon gift card. We’ll discuss this in more detail soon. First, please count the dots on the images in this handout. You have one minute to complete this task.”
Please count the dots in the following images. You have one minute to complete this task. Please try to be as accurate as you can.

Write your estimate for the first image here: ___________________

Write your estimate for the second image here: ___________________

Write your estimate for the third image here: ___________________
[Then, the experimenter randomly placed participants into groups, ostensibly based on their performance in dot estimation.]

“With these types of tasks, people tend to either underestimate or overestimate with their dot counting. So we’ll have is an Under-Estimator group and an Over-Estimator group. And I’ll tell you which group you are in.”

[Participants were then placed in groups and asked to stand with their group on a side of the room. Order of assignment to the Under-Estimator or Over-Estimator group was counterbalanced.]

“This group includes those that underestimated in their dot counting and will be called the Under-Estimators. And this group includes those that overestimated and will be called the Over-Estimators. As I previously mentioned, you’ll be working with your group to earn points. If you can make it to ten points, you’ll be entered in the raffle for the $100 Amazon gift card.”

[The following verbal instructions were then used to manipulate high or low group status. This was ostensibly based on performance, but assigned at random to either the Under-Estimator or Over-Estimator group. These group names were counterbalanced across the high and low status groups. This resulted in one group of higher status and one group of lower status for each session of data collection.]

“Your group won’t be starting at zero points though. We used the estimation accuracy of your group to assign you starting points. It turns out that the [Under-Estimators or Over-Estimators] were more accurate with their estimations. So the [Under-Estimators or Over-Estimators] will be starting with seven points, but the [Under-Estimators or Over-Estimators] will be starting with four points.”

[These status instructions were emphasized by writing group names and their number of points on a white board at the front of the room. Then, verbal instructions were administered that manipulated threat. This was manipulated from one session of data collection to another. In the threat sessions, participants receive the following verbal instructions.]

“You’ll have the opportunity to work with your group to earn more points with several decision making tasks. This will involve a competition between groups. For each task, if your group comes to the correct decision in the fastest time, your group will be rewarded one point. If your group is the first to get to ten points, your group wins the competition and will be entered in the $100 gift card raffle.”

[However, in the no threat condition sessions, participants instead received the following verbal
instructions.]

“You’ll have the opportunity to work with your group to earn more points with several decision making tasks. This is not a competition between groups. For each task, if your group comes to the correct decision in the allotted time, your team will earn one point, regardless of how well the other group does. If your group can make it to ten points, you will be entered in the $100 gift card raffle. And both groups can be entered in the raffle.”

[Threat or no threat instructions (depending on the session) were emphasized by writing a summary of the above verbal instructions on a white board at the front of the room. Participants were then directed to sit at one of two tables (on the left or right side of the room) with their group. The left or right table was counterbalanced across the Under-Estimator or Over-Estimator group names, as well as the status conditions. Sheets with their group names were also placed on their table. This served as a behavioral measure of outgroup and ingroup contact orientations (see Figure 9).]

“Before we get to the decision making tasks though, you need to complete a brief questionnaire.”

[Each participant (individually, not as a group) then completed the following questionnaire.]
Please write down the name of your group. ______________________________________

How many points must your group earn to be enrolled in the gift card raffle? _________

How many starting points does your group have? _________________________________

How many points does the other group have? _________________________________

Please circle your response for each of the following.

<table>
<thead>
<tr>
<th></th>
<th>The Under-Estimators</th>
<th>The Over-Estimators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which group do you feel has more resources to get ahead?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which group is at a greater disadvantage compared to the other?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which group has greater privilege compared to the other?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is this a competition between groups?  
No | Yes

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Disagree Nor Agree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the other group earns points, it will not influence my group’s points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>If the other group earns points, my group will lose points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>The following items describe different feelings and attitudes. Please respond to the following items by considering how much you experience these feelings and attitudes.</td>
<td>Not At All</td>
<td>Moderately</td>
<td>Extremely</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I am more focused on preventing loss of points, rather than achieving gains of points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am more focused on achieving successful gains of points, rather than losing points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am focused on the points that I ought to have.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am focused on the points I should ideally have.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I worry about losing points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I imagine successes in gaining points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel that the major goal should be to prevent loss of points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel that the major goal should be to promote gains of points.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
For the following questions, please indicate to what extent you want to behave in this manner toward your group in this study.

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>Moderately</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do you want to avoid your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to approach your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to have nothing to do with your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to get to know your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to keep away from your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to increase the amount of time you have contact with your group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the following questions, please indicate to what extent you want to behave in this manner toward the other group in this study.

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>Moderately</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do you want to avoid the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to approach the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to have nothing to do with the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to get to know the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to keep away from the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you want to increase the amount of time you have contact with the other group?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is your age (in years)? ______________________________________________

What is your gender?

[ ] [ ] [ ] Please specify: ______________________________________________

[Male] [Female] [Other]

What racial / ethnic group best describes you?

[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Asian Black / White / Hispanic Native Arab Multi-Racial / Other
African Caucasian / Latino American American
American

Please specify your race / ethnicity. ______________________________________

Here is a scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale?

[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Extremely Liberal Slightly Liberal Slightly Moderate, Middle of the Road Slightly Conservative Conservative Extremely Conservative Don’t Know

Which political party do you identify with?

[ ] [ ] [ ] [ ]
Democrat Republican Independent Don’t Know
Do you have any comments?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

In order to be notified if you win the $100 gift card raffle, please provide us with your email address (or other contact information, such as a phone number or physical address):

_____________________________________________________________________

When you are finished, please close your packet and wait for the researcher to give you instructions.
“That is the end of the study. All of you will be entered into the $100 gift card raffle. We will not be going through the decision making tasks. We are primarily interested in how this situation influenced your reaction to the questionnaire.
Does anyone have any questions about the study?
Does anyone want to say anything about the study?
Was anyone aware that we wouldn’t be going through with the decision making tasks?”

[On a handful of occasions, follow-up questions were also administered. For example, “Why did you think we wouldn’t do the decision making tasks?”]

[Lastly, participants were individually given the following written debriefing.]

**Estimations & Decision Making**

**Debriefing Form**

Thank you for your time!

The present research is concerned with how people react to group situations. In the present research, we manipulated group aspects, such as competition over points, and then examined a number of dependent variables, such as behaviors toward groups. Your participation will help us better understand how and why people react to group situations in certain ways. Please feel free to contact the Principal Investigator Brian Johnston (bjohnston1@gradcenter.cuny.edu) if you have any additional questions about this study. If you have any questions regarding your rights as a research participant please feel free to contact the John Jay Institutional Review Board Office at jj-irb@jjay.cuny.edu, or (212) 237-8961.
Appendix D

Study 2 Additional Results: Behavioral Contact Orientations

In Study 2, the SEM for the behavioral contact outcomes included largely redundant results (namely threat and regulatory focus path estimates pertaining to Hypothesis 2) compared to the self-report results that were fully reported. Therefore, to reduce repetition in text, detailed results for this behavioral model are present in this appendix.

**Hypothesis 1: Status-by-Threat \rightarrow Contact Orientations**

Hypothesis 1A was not supported as status and threat did not interact for outgroup contact ($\beta = -.01, p = .958$); there were not effects for high status groups ($\beta = -.03, p = .725$) or low status groups ($\beta = -.02, p = .809$). Hypothesis 1B was not supported as status and threat did not interact for ingroup contact ($\beta = .07, p = .620$); there were not effects for high status groups ($\beta = .17, p = .128$) or low status groups ($\beta = .08, p = .577$). Descriptively, outgroup and ingroup contact were correlated ($\beta = -.30, p < .001$), though this was not of direct relevance to hypothesis tests.

**Hypothesis 2: Status-by-Threat \rightarrow Regulatory Focus**

Hypothesis 2A was not supported as status and threat did not interact for prevention focus ($\beta = .06, p = .666$); there was a marginal effect for high status groups ($\beta = .20, p = .068$), but no effect for low status groups ($\beta = .13, p = .209$). The marginal high status effect was in line with Hypothesis 1A, but should be considered tentative given the lack of a significant interaction. For Hypothesis 2B on status and threat interacting for promotion focus, there was a significant interaction ($\beta = .368, p = .004$), but not in the predicted direction; there was an effect for high
status groups ($\beta = .32, p = .003$), but not low status groups ($\beta = -.10, p = .320$). This was the same pattern observed in the self-report model.

**Hypothesis 3: Regulatory Focus \(\rightarrow\) Contact Orientations**

Hypothesis 3A was supported with a negative relationship between prevention focus and outgroup contact ($\beta = -.20, p = .009$). Hypothesis 3B was not supported as there was no relationship between promotion focus and ingroup contact ($\beta = -.04, p = .658$). For alternate paths, there was no relationships between prevention focus and ingroup contact ($\beta = .02, p = .809$) or promotion focus and outgroup contact ($\beta = .04, p = .647$). Descriptively, prevention and promotion focus were correlated ($\beta = -.27, p = .004$), but this was not of direct relevance to hypothesis tests.

**Hypothesis 4: Status-by-Threat \(\rightarrow\) Regulatory Focus \(\rightarrow\) Contact Orientations**

Hypotheses 4A as not supported as there was not prevention focus mediation for high status groups (-.04, 95% CI [-.095, .015]). Hypotheses 4B as not supported as there was not promotion focus mediation for low status groups (.004, 95% CI [-.015, .023]). For high status groups, alternate path mediation results were not significant, including promotion focus for outgroup contact (.014, 95% CI [-.045, .073]), prevention focus for ingroup contact (.004, 95% CI [-.026, .033]), and promotion focus for ingroup contact (.012, 95% CI [-.064, .041]). For low status groups, alternate mediation results were also not significant, including prevention focus for ingroup contact (.002, 95% CI [-.018, .023]), prevention focus for outgroup contact (-.027, 95% CI [-.076, .023]), and promotion focus for outgroup contact (-.004, 95% CI [-.024, .016]).
References


Brewer, M. B., Manzi, J. M., & Shaw, J. S. (1993). In-group identification as a function of


check for the contact hypothesis. *American Psychologist, 60*(7), 697-711.


framework. In T. Heatherton, R. Kleck, M. Hebl, & J. Hull (Eds.), *The social psychology of stigma* (pp. 31-61). New York: Guilford Press.


