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Attitudes Toward Immigrants as a Function of National Identity Distinctiveness Threat and Imagined Contact

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Approval of the Dissertation Committee

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Alicia S. Davis as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Psychology.

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Abstract

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As immigration rises, frequent and positive intergroup interactions with immigrants are increasingly necessary to ensure smooth and harmonious societal and community functioning. However, immigrants are often perceived to threaten the host population's distinctive national group identity, motivating negative reactions including dehumanization, ethnocentrism, and a shift toward extremism, reducing opportunities for positive intergroup interaction. Researchers have shown that intergroup contact has been effective in improving outgroup attitudes by reducing intergroup anxiety. However, with increasing polarization, more recent research has indicated that contact interventions may not be effective in all cases. Given research identifying social identity based distinctiveness threat as a driver of negative attitudes to immigrants, this threat was targeted as a way to improve contact effects. In a two study series, distinctiveness threat was measured (Study 1; $N = 231$) and manipulated (Study 2; $N = 272$) to test its moderating role in the relationship between imagined contact and attitudes toward immigrants. Results showed that distinctiveness threat when measured was predictive of attitudes where imagined contact was not (Study 1), and that the effect of imagined contact was significant only when distinctiveness threat was reduced (Study 2). This research suggests a potential intervention that can prepare host communities to accept and integrate immigrants.

Dedication

To my mentors at SUA, CGU, and CMC who taught me the value of using science as a tool to serve others. To my family (in Australia and the United States), especially my Mum, Dad, and brother, who selflessly demonstrated what hard work looks like and supported me unconditionally in my pursuit of emulating their example. To my friends who kept me sane and smiling throughout the journey. And to my partner and our pup, thank you for the love and laughs that kept me going through the late nights and early mornings. This would not have been possible without each of you, thank you.

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CHAPTER ONE

Introduction

Immigration is a consequential policy issue, especially as the world grapples with climate change's current and future effects. With millions of "climate refugees" emigrating across the globe and modeling suggesting numbers will only grow (Zong et al., 2019), a plan to relocate and support these immigrants is becoming increasingly necessary. However, political polarization and the rising appeal of right wing populism, associated with extremist ideals that encourage negative views toward outgroups (Hogg, 2021b; Hogg & Gøtzsche-Astrup, 2021), has harmed progress toward community integration. In the context of immigration in the United States, polarization and extremist beliefs have led to increased perceptions of threat to the United States and its national identity posed by immigrants, breeding uncertainty about continued identity distinctiveness (Davis & Hogg, in preparation).

Uncertainty caused by perceived national identity distinctiveness threat has manifested in several negative reactions toward immigrants. These include dehumanization, extreme ingroup identification, and support for anti-immigration policies, impairing intergroup relations. To prevent these reactions, it is important to understand how and why negative attitudes develop and what can be done to improve them. Various social psychological interventions have been proposed, including contact theories (i.e., Pettigrew & Tropp, 2006) to address these issues. However, recently, these contact interventions have been called into question (e.g., Paluck et al., 2019), with their efficacy potentially reduced by a lack of focus on the underlying social identity based reasons for negative attitudes. Examining the identity-based motivations behind intergroup contact and negative outgroup attitudes through the lens of social identity theory (Tajfel & Turner, 1986; Turner et al., 1987), and applying these ideas to the context of interventions to improve attitudes toward immigrants may help improve the effects of intergroup contact.

The present research examines potential interventions to promote positive intergroup contact by reducing national identity distinctiveness threat. Two experiments measured and manipulated distinctiveness threat and imagined contact to investigate the moderating effect of threat reduction on the relationship between contact and outgroup. This research provides new information about the effects of social identity interventions on attitudes towards immigrants, which can help to inform interventions to improve immigrant integration within communities.

Literature Review

Social Identity Theory and Threat

Several key features of social identity theory (Tajfel & Turner, 1986; also see Abrams & Hogg, 2010; Hogg 2018) explain enduring intergroup conflicts (see Hogg, 2016) and specifically conflicts surrounding immigration. The first of these is the notion of group identities that inform entitativity, structure, and the beliefs and values of groups we belong to. These identities inform how individuals evaluate and think of themselves (i.e., their self-esteem and self-concept), and their ingroups and outgroups (Abrams & Hogg, 1988). When people feel certain about their group identities, especially ones they feel are most central to their image of themselves (Jung et al., 2019; Oakes, 1987), they also feel certain and affirmed in their sense of who they are in the world.

According to the self-esteem hypothesis (see Abrams & Hogg, 1988), individuals are highly motivated to maintain a positive image of their group (e.g., strong, highly moral) as this, in turn, reflects positively on themselves as members of the group. Because individuals strive to think about their ingroup positively, when an outgroup threatens this positive image, they are motivated to mitigate and protect against any threats to the group's status in order to enhance and protect their self-concept. To protect against status threats, individuals engage in self-

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enhancement or enhancement of the group identity to increase perceptions of high group status. Self-enhancement is achieved by emphasizing accomplishments of the group or by derogating or dehumanizing an outgroup to demonstrate the superiority of the ingroup (Haslam, 2006). Dehumanizing the outgroup allows individuals to feel as though self- and group-enhancement, and prejudice are justified because the outgroup is less than human compared to the ingroup.

Individuals are also highly motivated to belong to clearly defined and distinctive groups, as this increases certainty in their identities and about their place within their ingroups. As proposed by uncertainty identity theory (Hogg, 2007, 2012, 2021a, 2021b), when an outgroup threatens the distinctive nature of the ingroup, individuals can become uncertain about the group, and therefore who they are as a person. To protect against outgroup threats, individuals are motivated to reduce uncertainty about the group's concept by creating a clearer and distinctive image about the ingroup as separate from the outgroup. This is achieved through a process of social categorization of group members, which can increase prejudice towards those categorized as outgroup members (Dovidio & Gaertner, 2010). This ingroup-protective action can become dangerous when groups move towards extreme distinctiveness to become more certain about their group and what it stands for. In these cases, groups can be motivated to engage in extremist behaviors to reduce uncertainty about their social identity (Hogg, 2021b; Hogg & Gøtzsche-Astrup, 2021).

Negative reactions to perceived threats can degrade intergroup relations, reducing the potential and desire for intergroup interaction. Through less contact with the outgroup, individuals are less likely to expand their views, counter their stereotypes about the outgroup, or develop positive attitudes about and experiences with the outgroup – thus dooming future intergroup relationships (Pettigrew, 1998). These components of perceived threat have been

shown to extend to the context of immigrants, with similar negative consequences for intergroup relations.

Immigrant Threat

To understand how to mitigate perceptions of threat, it is necessary to first understand how false images of immigrants as a threat are constructed and reinforced. The portrayal of immigrants as threats by society and the media fuels the perception of immigrants as invaders who bring diseases and are a drain on the government's resources (Jacobs, 2018; Marshall & Shapiro, 2018). Often, host populations are exposed to negatively toned news and social media coverage breeding distrust and negative views of immigrants (e.g., Jacobs, 2018; Marshall & Shapiro, 2018). Research has also shown that strict immigration policies supported by governments can encourage host populations to perceive immigrants as threats to be contained (Esses et al., 2017, 2013). The effects of negative exposure to immigrants through media and policy are compounded by the fact that a majority of host country populations grow up in environments where they do not have significant contact with outgroup members, presenting no opportunities to challenge threatening images (Plant & Devine, 2003). All of these factors can encourage host populations to embrace false ideas of who immigrants are, and perceive immigrants as threat.

The literature has defined several key perceived threats that immigration poses to national identity. These include a status threat, or the idea that immigrants threaten the prestige of one's ingroup and its associated social identity (Abrams & Hogg, 1988), and a distinctiveness threat where immigration is perceived to cause the national group identity to become indistinct from outgroup identities (Hogg, 2021b), similar to an entitativity threat (see Jung et al., 2019). However, some recent research has argued that distinctiveness threat produces the most self and

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group identity uncertainty when compared to other outgroup threats (Jetten et al., 2005; Schmid et al., 2009), including in the context of a distinctiveness threat posed by immigration (Davis & Hogg, in preparation). Immigration based distinctiveness threat is rooted in the idea that multiple immigrant outgroups present new customs, beliefs, and behaviors that are foreign to the host nation's established identity, and may cause unwanted changes. This perception of threat can encourage negative reactions aimed at protecting the distinctiveness of the national ingroup identity.

Consequences of Distinctiveness Threat

Individuals who perceive a distinctiveness threat posed by immigrants, as with any outgroup threat to a group identity, are often motivated to protect their identity (Dovidio et al., 1996). In the case of immigration expressing negative attitudes becomes a way for people to clearly define their own beliefs as separate from the immigrant outgroup's, and to enhance behaviors considered distinct to ingroup identity. For example, under perceived threat, conservative groups have expressed more extreme beliefs about and actions toward immigration, including supporting reductions in legal immigration and even assaults on immigrants (Espinosa et al., 2018; Falomir-Pichastor & Frederic, 2013). Similarly, groups that feel threatened by immigration display enhanced ingroup favoritism and can engage in derogation and dehumanization of immigrants. This has been demonstrated in the forms taken by ethnocentrism – expression of beliefs of superiority over the immigrant outgroup (i.e., favoring US citizens over immigrants in employment situations; Espinosa et al., 2018), and dehumanization (i.e., likening immigrants to vermin; Marshall & Shapiro, 2018). These reactions have resulted in little positive contact between the two groups, and even the development of intergroup anxiety (Crisp & Abrams, 2008), reducing the likelihood of future interaction. In fact, research has shown that

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less than half of U.S. citizens report intergroup interactions with immigrants (Pew Research Center, 2018).

These ideas about negative reactions to perceived distinctiveness threat have been documented in the literature. For example, Falomir-Pichastor and Frederic (2013) investigated whether the threat of national identity heterogeneity (i.e., loss of distinctiveness) would affect attitudes towards immigrants. They found that participants in the heterogeneous condition perceived significantly more threat from outgroups and exhibited more prejudice towards immigrants than those in the homogenous condition. Additionally, research has shown that when individuals who maintain little contact with immigrant outgroups perceive a threat, anxiety and negative attitudes can be exacerbated (Plant & Devine, 2003). Given these findings about the negative effects of threat on outgroup attitudes, literature has focused heavily on uncovering ways to improve immigrant outgroup relations, specifically through increased contact with the outgroup.

Mitigating Perceptions of Immigrant Threat Through Contact

Intergroup contact theories that suggest ways to improve intergroup relations have attracted significant attention and support. Research has found that the effectiveness of contact can differ markedly depending on the context of the interaction. Intergroup contact theory posits that intergroup relations can be improved by contact that reduces prejudice (Pettigrew & Tropp, 2006), especially under conditions equal group status, societal support, and common goals that require groups to work cooperatively together (Allport, 1954). Extended to a social identity context, social identity-based mechanisms of contact and intergroup relations such as social categorization and intergroup anxiety have been investigated (Crisp & Abrams, 2008; Pettigrew, 1998). Abrams et al. (2006) found that those who had previously experienced positive contact

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were no longer motivated to increase ingroup identification or prejudice when experiencing intergroup threat and anxiety in subsequent contact situations. Expanding on this idea, Abrams et al. (2008) found that previous positive contact provides a "threat inoculation" where individuals are protected from perceiving threat, thereby reducing negative attitudes toward the outgroup and anxiety about interactions. Similarly, other examinations of contact interventions have expanded on this model to investigate the effects of social categorization of ingroup and outgroup members. Brown and Hewstone (2005) demonstrated that contact can reduce negative feelings towards outgroup members through recategorization and decategorization processes.

Contact theory has been well-tested in the context of attitudes towards racial outgroups. Pettigrew and Tropp (2006) conducted a meta-analysis showing that in over 713 samples, intergroup contact reduced intergroup prejudice across various racial and ethnic groups, especially in settings where Allport's optimal conditions were satisfied. Promisingly, research has also shown that any change in attitudes toward individual outgroup members generalized to meaningful changes in attitudes towards the outgroup as a whole (Pettigrew & Tropp, 2006; Stathi et al., 2011). This finding has been further substantiated by Lemmer and Wagner (2015), who meta-analyzed contact interventions that have been conducted outside a laboratory environment. Using studies employing real-life contact interventions, they demonstrated improved ethnic attitudes, even over time, giving support for the generalizability of the effect.

Contact interventions have also been shown to increase support for outgroups, even from those who typically hold strongly negative outgroup attitudes. Graf and Sczesny (2019) investigated the effect of contact with migrants on improving intergroup attitudes and support for migrants. They discovered that contact improved attitudes toward support of migrants, with participants rating themselves more likely to donate to an organization that supports immigrants,

indicating a change in attitudes that may extend to behavioral outcomes (i.e., supporting immigrant charities, voting in favor of immigrants). In fact, research has demonstrated that contact can have a positive effect on behavioral intentions towards outgroups (e.g., Bagci et al., 2022; Turner et al., 2013), with a meta-analysis demonstrating significant effects of contact on behavioral intentions to outgroups over time (Maunder & White, 2019).

Although intergroup contact in its original face-to-face form is effective in improving intergroup attitudes and reducing prejudice and discrimination, especially in racial contexts, the method is somewhat restrictive with limited generalizability (i.e., it is not always feasible to introduce those with strongly negative attitudes to outgroup members, face-to-face; Amichai-Hamburger & McKenna, 2006). This is especially true in a post-pandemic world where everyday social transactions (e.g., work, shopping) have become overwhelmingly virtual and impersonal – people increasingly rarely interact face-to-face with a real person in the same physical space. Thus, research on adapting contact interventions to a more accessible context has progressed the field's understanding of the effects of contact on intergroup relations.

Imagined Contact

Taking the limitations of previous research into consideration (e.g., difficulties in facilitating face-to-face interactions), new iterations of contact theory have been developed. These iterations include extended contact (i.e., simulating a scenario where a participant's friend has favorable contact with an outgroup member; Wright et al., 1997) and vicarious or mass-mediated contact (i.e., observing a positive interaction between an ingroup member and outgroup member or witnessing such an interaction through a form of media; Dovidio et al., 2011; Visintin et al., 2017), both improving positive regard for outgroup members. However, one form of contact that has wide-ranging effectiveness, particularly in the context of social identity threat, is

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imagined contact, where participants are asked to imagine a positive interaction with an outgroup member (Crisp & Turner, 2009). Research has shown this form of contact to be effective in promoting tolerance for many different outgroups (Crisp & Turner, 2012), and its methods have been emphasized in the contact literature due to the key qualities of convenience and generalizability to real-life contact events (Stathi et al., 2011).

Research finds that imagined contact has numerous benefits, over and above direct contact. In addition to providing contact opportunities in situations where it is not possible to have face-to-face contact, imagined contact has been shown to comprehensively target attitude processes by augmenting both implicit and explicit attitudes. Targeting both attitude components has been linked to more attitude-behavior consistency (Jaccard & Blanton, 2007; Miles & Crisp, 2014), leading to a higher likelihood of a corresponding change in how the individual treats the outgroup member. For example, Turner and West (2012) have shown that imagined contact with an outgroup member positively changes future behaviors towards outgroup members as a whole. Participants who imagined positive contact with Muslim individuals proceeded to place their chair closer to a Muslim individual than those who did not imagine prior contact. These effects were observed in addition to positive changes in attitudes toward the outgroup member.

Not only is imagined contact promising for attitude and behavior change, but researchers have demonstrated its importance as a preparation or inoculation for future contact. Imagined contact has been described as an anxiety buffer (Stathi & Crisp, 2008) or "inoculation" (Abrams et al., 2008) against threat-based anxiety during a direct contact event. As threat is a key predictor of negative attitudes toward immigrants (Davis & Hogg, in preparation), which increases intergroup anxiety and reduces the effects of contact (Crisp & Abrams, 2008), imagined contact presents a solution to improve attitudes and support positive direct contact.

However, questions remain as to the longevity of contact effects and whether there are moderators of these effects. Additionally, there is scope for more research attempting to understand the group processes (e.g., intergroup threat, intergroup anxiety, etc.) underlying outcomes related to contact and whether group membership, salience, or norms play a role in the effectiveness of contact for reducing intergroup prejudice and discrimination. With limited research aimed at understanding and improving the effectiveness of contact, there is increasing evidence of the waning effects of traditional contact in the literature.

Reduced Effectiveness of Contact

As the political climate becomes more polarized and charged with uncertainty (Hogg, 2021b), it becomes increasingly difficult to create conditions that facilitate positive contact that entirely erases feelings of intergroup threat and anxiety. Additionally, with unlimited access to media and accompanying echo chambers that breed extreme attitudes and beliefs (Hogg, 2021b), negative immigrant attitudes are easily reinforced and biases confirmed (Wirz et al., 2018), making it difficult to generate positive attitudinal and behavioral change through contact. As such, recent meta-analyses have found that modern-day contact is not as effective at reducing racial prejudice as earlier studies have suggested (Paluck et al., 2019).

Studies are also demonstrating the potential for a curvilinear relationship between contact and attitude change – people with extreme (typically negative) intergroup attitudes are largely unaffected by positive contact. For example, Dhont and Van Hiel (2011) investigated whether direct contact moderated the relationship between extended contact and prejudice reduction. Those who reported stronger, previously established attitudes toward the outgroup did not demonstrate significant changes in prejudice with high extended contact, indicating stability at the extreme ends of the attitude dimension. Similarly, Borinca et al. (2022) found that those with

liberal political ideologies who already reported a high degree of support for immigrants did not experience significant improvements in support of immigrants after experiencing positive contact, suggesting a ceiling effect.

Alarmingly, studies are demonstrating that under sub-optimal contact conditions, contact can even reinforce negative attitudes. Barlow et al. (2012) investigated the concept of the "contact caveat," where negative contact (i.e., contact conditions that prevent the individual from experiencing a positive and constructive interaction with an outgroup member) can produce strong negative effects including increased prejudice. Indeed, in some cases, negative contact can strengthen prejudice more effectively than positive contact can reduce it. While Wang et al. (2019) found positive effects of extended contact for minority group members, they also found that negative extended contact contributed to outgroup attitudes, negatively affecting intentions to engage in future contact, and increasing intergroup anxiety.

Thus, contact contexts that promote negative contact such as perception of a distinctiveness threat posed by outgroup members will likely negatively affect contact outcomes, including increasing intergroup anxiety and negative attitudes (Crisp & Abrams, 2008). To prevent negative outcomes, it is important to mitigate causes of negative contact, with researchers suggest that imagined contact could be effective when combined with other measures to reduce anxiety and prepare individuals for direct contact (Stathi et al., 2011). Research conducted from the social identity perspective supports this idea, in that *reducing threat* before a contact intervention can protect against potential moderators of contact effectiveness. Árnadóttir et al. (2022) found that those who had protective factors that mitigated social identity threat were more open to and experienced more positive effects of intergroup contact. Thus, lower threat effectively produced optimal conditions for contact to reduce intergroup prejudice and anxiety.

However, past researchers who have attempted to take a social identity approach to improving the effects of contact have uncovered challenges in producing positive effects. Wojcieszak et al. (2020) investigated whether presenting the idea of outgroup similarity was enough to reduce immigrant threat and improve contact effects, but did not find significantly different effects of contact. Taking the opposite approach, Igartua et al. (2019) discovered that those who perceived the immigrant they had imagined contact with as very distinctive to the ingroup in their customs, beliefs, and values, reported significantly less positive effects of contact. These contrasting findings support Brewer's (1991) idea of "optimal distinctiveness" from immigrant outgroups, where the middle ground between similar but different enough to not affect the ingroup's identity distinctiveness may be the optimal way to frame immigrants during contact. Therefore, if not approached carefully, a social identity based intervention in addition to contact may not improve the positive effects of contact on outgroup attitudes. The present research was designed to fill this gap by investigating and testing an effective social-identity based intervention to improve the results of contact.

Current Research

Although contact has been presented as an effective way to improve attitudes to outgroup members, its effectiveness for improving outgroup attitudes has been questioned recently. Despite evidence that contact can prevent threat (inoculation; Abrams et al., 2008) and precontact anxiety (Stathi & Crisp, 2008), when people already experience high degrees of threat and anxiety they are likely to experience negative contact. This is especially true in situations where high distinctiveness threat produces intergroup anxiety, negative expectations for positive intergroup contact, and increased prejudice (Wang et al., 2019). Employing social identity theory to understand the mechanisms behind the effects of contact may help to improve the design of

contact interventions that more reliably and strongly improve intergroup attitudes and behaviors (Sherman et al., 2017). Social identity research has found that the pre-contact context can impact contact outcomes (Abrams et al., 2008; Brown & Hewstone, 2005); however, interventions to mitigate negative contexts have been limited (Igartua et al., 2019; Wojcieszak et al., 2020). Therefore, it is possible that an intervention that reduces perceptions that immigrants threaten the distinctiveness of American national identity before contact can improve its effects on attitudes to immigrants.

The current research investigated whether a reduction in pre-contact social-identity based distinctiveness threat (i.e., national identity) can improve positive contact outcomes. We expected that reducing distinctiveness threat before exposure to a positive intergroup contact event would improve outgroup attitudes. This pair of studies tested these ideas across a mixed manipulation/measurement study and a purely manipulation-based experiment, with data collected online. In Study 1, perceived distinctiveness threat was measured before an imagined contact intervention to determine the threat's effects on positive outgroup outcomes and behavioral intentions. Study 2 manipulated both contact and threat level with a distinctiveness threat reduction intervention in a true experiment to test the causal relationships between these variables and their effect on attitudes toward immigrants.

CHAPTER TWO - Study 1

Given the evidence presented for distinctiveness threat's potential moderating role in the relationship between imagined contact and positive attitudes toward immigrants (e.g., Árnadóttir et al., 2022; Davis & Hogg, in preparation), Study 1 centered on an examination of these relationships as a potential explanation for the reported waning effectiveness of contact (Paluck et al., 2019). To investigate these relationships, we measured participants' national identity distinctiveness threat before an imagined contact intervention, then measured attitudes toward immigrants. Because of the potential confound of other social identity factors such as identity centrality and political ideology (Borinca et al., 2022; Jung et al., 2019; Wagoner et al., 2018), these variables were also measured to explore their role as boundary conditions or as covariates.

We hypothesized 1) a main effect of the contact intervention, such that those who received the intervention would express more positive attitudes toward immigrants, 2) a main effect of distinctiveness threat predicting less positive attitudes, and 3) an interaction effect, such that those with low distinctiveness threat would report more positive attitudes towards immigrants after a contact intervention, whereas those with high distinctiveness threat would report negative attitudes after contact. We also proposed that these hypotheses would hold under the boundary condition of high national identity centrality.

Method

Participants and Design

In an experimental design, the independent variable of imagined contact (no contact control, imagined contact) was manipulated and distinctiveness threat was measured. The dependent variables were attitudes towards (a) immigrants and (b) immigration policy. An a priori power analysis (G*power analysis; Faul et al. 2009) concluded that approximately 233

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subjects were required to obtain an effect size of $d = .41$ (i.e., standard effect size for the imagined contact intervention; Miles & Crisp, 2014) with alpha = .05 and power = .80 for this design. A total of 294 subjects began the study, with 57 removed for catastrophic missing data (over 50% missing), and six removed for missed attention checks, leaving a final sample of $N =$ 231.

Subjects were American residents over the age of 18 ($M_{age} = 39.42$, $SD_{age} = 11.49$) who identified as English speakers, recruited through Amazon Mechanical Turk using CloudResearch (Litman et al., 2017). Of these participants, 61.47% identified as men, 75.32% identified as White, 51.51% as Democrats, 48.05% had attained a bachelor's degree, 52.38% were non-religious, and the median income range was $40,000 – $59,999. High identification with their national identity was assessed as a boundary condition. Participants completed an online survey that took approximately seven minutes, with the subjects compensated $1.10 for their time.

Procedure

Participants were told that the researchers were studying attitudes to contemporary social issues, and were asked to answer questions about whether they perceived a distinctiveness threat posed by immigrants to their national identity. They then answered an immigrant group check measure. Participants were then randomly assigned to an imagined contact condition asking them to either imagine a scenario where they were interacting with an immigrant (contact), or walking outdoors (control). Timers on the manipulation checked whether participants read and internalized the imagined contact scenario. As a manipulation check, participants were asked to write about what they imagined. Finally, participants answered questions about their attitudes towards immigration and immigrants, and then provided demographic information. Due to the sensitive nature of the topic and manipulations, an extensive debrief was provided.

Manipulation

Imagined Contact

Immigrant Group Check. There is no standard approach in the literature as to whether imagined contact scenarios should address a contact event with immigrant groups in general (i.e., Shamloo et al., 2018; Vezzali et al., 2015), or a specific immigrant group salient to the population of study (i.e., Borinca et al., 2022; Stathi et al., 2011), with both methods well published. In a diverse US sample, we did not expect that each participant would feel threat from the same immigrant group, as each individual would have different experiences with and exposure to each immigrant group varying based on location, age, industry, etc. (Fussell, 2014) Therefore, we deemed it inappropriate to simply specify an immigrant group in the contact manipulation that may trigger a consistent distinctiveness threat response from everyone.

Likewise, we deemed it inappropriate to specify that participants should consider immigrants in general during contact due to variation in circumstances, customs, and beliefs that each immigrant group holds, introducing numerous confounds to the measurement of threat. Therefore, to control for the type of immigrant group, we measured which group the participant considered while answering the distinctiveness threat measure, and asked them to consider this immigrant group during their contact scenario using the following instructions:

> All of us encounter many people we feel comfortable or uncomfortable around, and some we are relaxed or nervous about interacting with. Think of an immigrant group you may feel uncomfortable about interacting with. Please indicate which immigrant group you are thinking about here.

Immigrant Contact Manipulation. Following the immigrant group check, in the imagined contact condition, participants were asked to read a paragraph introducing an imagined

scenario where the participant experienced a positive interaction with an immigrant from the immigrant group they previously mentioned. This scenario was closely modelled on the standard scenarios used in imagined contact research (Crisp & Turner, 2012; Stathi & Crisp, 2008; Stathi et al., 2011; Turner et al., 2007, etc.):

> We would like you to spend a few minutes imagining meeting and having a conversation with a new neighbor who moved onto your street. Imagine that in your conversation you find out your new neighbor is an immigrant to the United States from the group you mentioned earlier. Imagine that the interaction is relaxed, positive, and comfortable. Imagine three specific things that you learn about the life and experiences of new immigrants to the United States from your conversation partner.

To induce a balanced control that incorporated elements of the immigrant contact manipulation such as feelings of novelty, peasantness, relaxation, and comfort as suggested in Crisp and Turner (2012), participants in the standard no contact control condition read the following scenario:

> We would like you to spend a few minutes imagining you are walking in the outdoors in a new place. Try to imagine aspects of the scene (e.g., is it a beach, a forest, are there trees, hills, what's on the horizon). Imagine that the walk is relaxed, positive, and comfortable. Imagine three specific things that you experience in the scene.

Manipulation Checks. After completing the imagination task, participants were asked to report on the three things they imagined in the scenario that made it positive, relaxed, and comfortable to check and reinforce the event (Husnu & Crisp, 2010), which was analyzed to ensure compatibility with the scenario (i.e., pertain to an experience interacting with an immigrant, or with walking outdoors) [see Appendix A for complete study materials].

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Measures

National Identity Distinctiveness Threat

Participants were asked to indicate their disagreement or agreement with six statements related to their perceived national identity distinctiveness threat on a nine-point scale (1 - strongly disagree to 9 - strongly agree; adapted from Wagoner et al., 2018), including: (1) "I feel that the presence of immigrants in the United States changes the distinct beliefs, values, and customs of America," and "I feel uncertain about what America stands for." Factor and reliability analyses found that the single factor scale was reliable ($M = 3.62$, $SD = 1.94$; $\alpha = .90$).

Dependent Measures

A three-item attitudes towards immigrants measure was adapted for the study and measured on a nine-point scale (1 - strongly disagree to 9 - strongly agree; Davis & Chang, in preparation). Items include "I feel I am accepting of immigrants," and "I feel I would be friends with an immigrant." Although highly correlated, research has shown that attitudes towards immigrants and attitudes towards immigration differ as constructs (Ceobanu & Escandell, 2010), therefore questions about immigration policy were added to the scale. These items attempted to counter social desirability bias from asking direct questions about whether individuals are accepting of immigrants (Fussell, 2014; Janus, 2010). These six items included, "Immigrants should be given the chance to work as soon as possible," and "I would support more lenient checks for immigrants," measured on the same nine-point scale. Factor analyses found that the nine-item scale loaded onto a single factor with high reliability ($M = 6.90$, $SD = 1.95$; $\alpha = .96$).

American Identity Centrality

Participants completed a three-item measure of their American identity centrality on a nine-point scale adapted from Wagoner et al. (2018), to check their identification and assess

centrality as a boundary condition of the hypothesized effects. These items were, "How strongly do you identify with being 'American'?", "How important do you feel being American is to who you are?", and "Overall, how often do you think of yourself as American?" (1 - not very much, 9 - very much). Factor and reliability analyses found that the single factor scale was highly reliable ($M = 6.40$, $SD = 2.09$; $\alpha = .93$)

Demographics

Participant demographics including social status (Singh-Manoux et al., 2005), education level, income, gender, age, and religion were collected. Political ideology was also measured in consideration of previous links to threat and differences in the effects of contact (Borinca et al., 2022). Participants were also asked whether they were a US citizen or permanent resident, and whether they were born in the US, to assess differences in responses to the intervention between immigrants and non-immigrants.

Data Analysis Strategy

Scale construction for each of the three scales described in the measures section above was completed by conducting a principal components analysis with oblique rotation, and scree values were analyzed to determine number of factors above a value of one. Measures were then averaged by factor to form continuous scales for use in subsequent analyses. To test whether the American identity centrality boundary condition was met, descriptive statistics for the scale were examined to determine whether the median value was above the midpoint, indicating high overall centrality levels across participants. The relationship between centrality and the independent variable of imagined contact was also investigated by using an ANOVA analysis to determine if the variable needed to be included as a covariate or moderator of the relationship between the manipulated independent variables and the dependent variable. Given no significant

relationships, the boundary condition was considered met and American identity centrality was not used in further analyses.

Covariates were tested for inclusion in the model by conducting one-way ANOVAs with the imagined contact condition predicting each of the measured, continuous covariates (i.e., age, political identification, religious centrality, SES, education, and income). Each of the demographic variables were also tested for potential inclusion as covariates by testing for their effects on the outcome measure of attitudes toward immigrants. Continuous variables were analyzed by correlations with the outcome measure, and categorical measures (e.g., US citizenship status, whether the participant was born in the US, political party, gender) were analyzed by t-tests and one-way ANOVAs to indicate their effect on the outcome measure.

The effects of the imagined contact intervention and measured distinctiveness threat on attitudes to immigrants were analyzed by a hierarchical linear regression, with relevant controls entered in Model 1, the mean-centered distinctiveness threat variable entered into the regression with the imagined contact dummy variable in Model 2, and the product term of the contact dummy variable and centered threat variable entered in Model 3 to test their interaction.

Results

Scale Construction

National Identity Distinctiveness Threat

To determine the composition of the six-item distinctiveness threat scale, a principal components analysis with oblique rotation of the six items was conducted. The analysis indicated one factor clear of the scree (eigenvalue = 4.11) accounting for 68.45% of the variance in distinctiveness threat. Therefore, the items were averaged into a single scale with high reliability ($M = 6.90$, $SD = 1.95$; $\alpha = .96$), and centered prior to analyses to increase interpretability.

Attitudes toward Immigrants and Immigration

To determine the composition of the nine-item attitudes towards immigrants and immigration scale, a principal components analysis with oblique rotation of the nine items was conducted. The analysis indicated one factor clear of the scree (eigenvalue = 6.82) accounting for 75.72% of the variance in attitudes toward immigrants and immigrant policy. Therefore, the items were averaged into a single scale with a high reliability (M = 6.90, SD = 1.95; α = .96).

A Shaprio-Wilk test for normality performed on the attitudes measure indicated non-normality of the distribution of the scale (W = 0.89, p < .001) and negative skew was apparent in visualization of the distribution. However, analyses demonstrated that skew and kurtosis were within normal limits (*skew* = -1.14, *kurtosis* = 0.86), and q-q plots of the distribution of the residuals appeared normal, therefore the measure was not transformed.

American Identity Centrality

To determine the scale composition of the American identity centrality items, a principal components analysis with oblique rotation of the three items was conducted. The analysis revealed one factor clear of the scree (eigenvalue = 2.68) accounting for 89.16% of the variance in American identity centrality. Therefore, the items were averaged into a single scale with a high reliability M = 6.40, SD = 2.09; α = .93).

Covariate Testing

To determine whether random assignment successfully spread the effects of covariates across all conditions, the effect of the imagined contact manipulation on each of the measured demographic variables (i.e., gender, age, education, immigrant group check category, income, political identity, US citizenship status, whether the participant was born in the US, political party) was tested. No variables significantly varied depending on condition. Additionally,

correlation analyses found that only SES had a significant negative relationship with our

distinctiveness threat predictor ($r = -.21$, $p = .049$, 95% CI [.00, .25]), with higher SES related to

higher reported distinctiveness threat, and political identity with the attitudes toward immigrants

outcome variable ($r = -.58$, $p < .001$, 95% CI [-.66, -.49]), with more conservative ideology

related to less positive attitudes. Therefore, only SES and political identity were included in

further analyses as covariates (see Table 1 for correlations, alphas for constructed scales, means,

and standard deviations of variables of interest).

Boundary Condition Testing

Subjects were screened for high identification with their national identity as a boundary

condition. The median score was well above the midpoint of the scale (*Median* = 7), indicating

the boundary condition was met. To rule out the need to include the variable in the model as a

moderator or covariate, relationships with the manipulated variables and the outcome variable

were tested. The experimental manipulation had no significant effect on American Identity

centrality ($F(1, 229) = 2.10$, $p = .149$, $\eta_p^2 = .009$). Therefore, the boundary condition was

satisfied, and the variable was not included in further analyses.

Hypothesis Testing

Power and Assumption Tests

To ensure the data met the assumptions of an ANCOVA analysis, tests of normality of

the data, homoscedasticity, and multicollinearity were conducted. A Shapiro-Wilk test of

normality indicated non-normality of the data ($W = 0.97$, $p < .001$), however, skew and kurtosis

for each of the variables of interest and Q-Q plots of the residuals appeared to be within normal

limits, therefore analyses proceeded. To check the assumption of homoscedasticity, scatterplots

of the residuals were checked, and a Breuch-Pagan test was run. The residuals plotted appeared

Table 1

Means, Standard Deviations, Alphas, and Correlations for Variables of Interest in Study 1

Variable	*M*	*SD*	α	1	2	3	4	5	6
1. Imagined contact				–					
2. Distinctiveness threat (6 items)	3.62	1.94	0.90	-.05 [-.18, .08]	–				
3. American identity centrality (3 items)	6.40	2.09	0.93	.10 [-.03, .22]	-.22*** [-.34, -.10]	–			
4. Age	39.42	11.49		.04 [-.09, .16]	-.08 [-.21, .05]	.16* [.04, .29]	–		
5. Political identity	4.26	2.48		.03 [-.10, .16]	.11 [-.02, .23]	.31*** [.19, .42]	.14* [.01, .27]	–	
6. SES	4.55	1.64		.05 [-.08, .18]	.13* [.00, .25]	.23*** [.10, .35]	.03 [-.10, .16]	.14* [.01, .26]	–
7. Attitudes to immigrants (9 items)	6.90	1.95	0.96	.04 [-.09, .17]	-.21** [-.33, -.08]	-.20** [-.32, -.08]	-.02 [-.15, .11]	-.58*** [-.66, -.49]	.03 [-.10, .16]

Note. M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$, ** indicates $p < .01$, *** indicates $p < .01$. $N = 231$.

random, therefore, analyses proceeded despite a minor violation of the assumption indicated by a significant Breuch-Pagan test ($\chi^2(1) = 4.99$, $p = .025$). To check for multicollinearity between the predictors, variance inflation factor analyses were run, with all variables within normal limits. A post-hoc power analysis was conducted to investigate the observed power of the regression analysis with five predictors with $N = 231$ subjects, observed effect size of $R^2 = .38$, power was calculated as 1.00, indicating sufficient power was achieved for these analyses.

Main Analyses

To test the main effect of contact (Hypothesis 1) and its interaction with distinctiveness threat on attitudes toward immigrants (Hypothesis 2 and 3), we conducted a hierarchical multiple regression. In Model 1, covariates were entered with both SES ($\beta = -.60$, $p < .001$, 95% CI [-0.71, -0.49]), and political identity ($\beta = .11$, $p = .040$, 95% CI [0.01, 0.22]) significantly predicting attitudes ($R^2 = .35$, $F(2, 227) = 62.28$, $p < .001$). In Model 2, the independent variables of imagined contact and distinctiveness threat were entered, where the overall model was significant ($R^2 = .38$, $F(4, 225) = 34.69$, $p < .001$) and contributed significantly more variance in attitudes explained compared to Model 1 ($\Delta R^2 = .03$, $F(2, 225) = 4.94$, $p = .008$). Imagined contact was not a significant predictor of attitudes ($\beta = .05$, $p = .391$, 95% CI [-0.06, 0.15]), however, distinctiveness threat was a strong predictor ($\beta = -.16$, $p = .003$, 95% CI [-0.26, -0.05]), with a one unit increase in threat predicting a .16 unit decrease in attitudes.

The interaction between the imagined contact condition and distinctiveness threat variable was entered into Model 3. Although the overall model was significant ($R^2 = .38$, $F(5, 224) = 27.69$, $p < .001$; See Table 2 for all regression statistics), the interaction variable was not a significant predictor of attitudes ($\beta = -.03$, $p = .662$, 95% CI [-0.18, 0.11]), and the overall model did not contribute significantly more variance in attitudes explained when compared to

Table 2

Hierarchical Linear Regression of the Effects of Imagined Contact and Distinctiveness Threat on Attitudes Toward Immigrants

	Model 1				Model 2				Model 3			
	B	SE	β [95% CI]	p	B	SE	β [95% CI]	p	B	SE	β [95% CI]	p
Intercept	8.32	0.34		<.001	8.10	0.34		<.001	8.09	0.35		<.001
Political Identity	-0.47	0.04	-.60 [-0.71, -0.49]	<.001	-0.46	0.04	-.59 [-0.69, -0.48]	<.001	-0.46	0.04	-.59 [-0.59, -0.69]	<.001
SES	0.13	0.06	.11 [0.01, 0.22]	.040	0.15	0.06	.13 [0.02, 0.23]	.018	0.15	0.06	.13 [0.13, 0.02]	.017
Imagined Contact					0.18	0.21	.05 [-0.06, 0.15]	.391	0.18	0.21	.05 [0.05, -0.06]	.394
Distinctiveness					-0.16	0.05	-.16 [-0.26, -0.05]	.003	-0.14	0.07	-.14 [-0.14, -0.28]	.066
Imagined Contact x Distinctiveness									-0.05	0.11	-.03 [-0.03, -0.18]	.662
R^2			.35***				.38***				.38***	
ΔR^2							.03**				.00	
F Statistic		$F(2, 227) = 62.28, p < .001$				$F(4, 225) = 34.69, p < .001$				$F(5, 224) = 27.69, p < .001$		

Note. $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$. $N = 231$.

Model 2 ($\Delta R^2 = .00$, $F(1, 224) = 0.19$, $p = .662$). Confirming the non-significance of the interaction effect, exploratory simple slopes analyses revealed that the effect of imagined contact was not significant at either level of distinctiveness threat (Low: $B = 0.26$, $SE = 0.29$, $p = .371$, 95% CI [-0.31, 0.83]; High: $B = 0.07$, $SE = 0.29$, $p = .799$, 95% CI [-0.50, 0.65]; see Figure 1 for graph).

Figure 1

Attitudes Toward Immigrants at Different Levels of Distinctiveness Threat as a Function of Imagined Contact
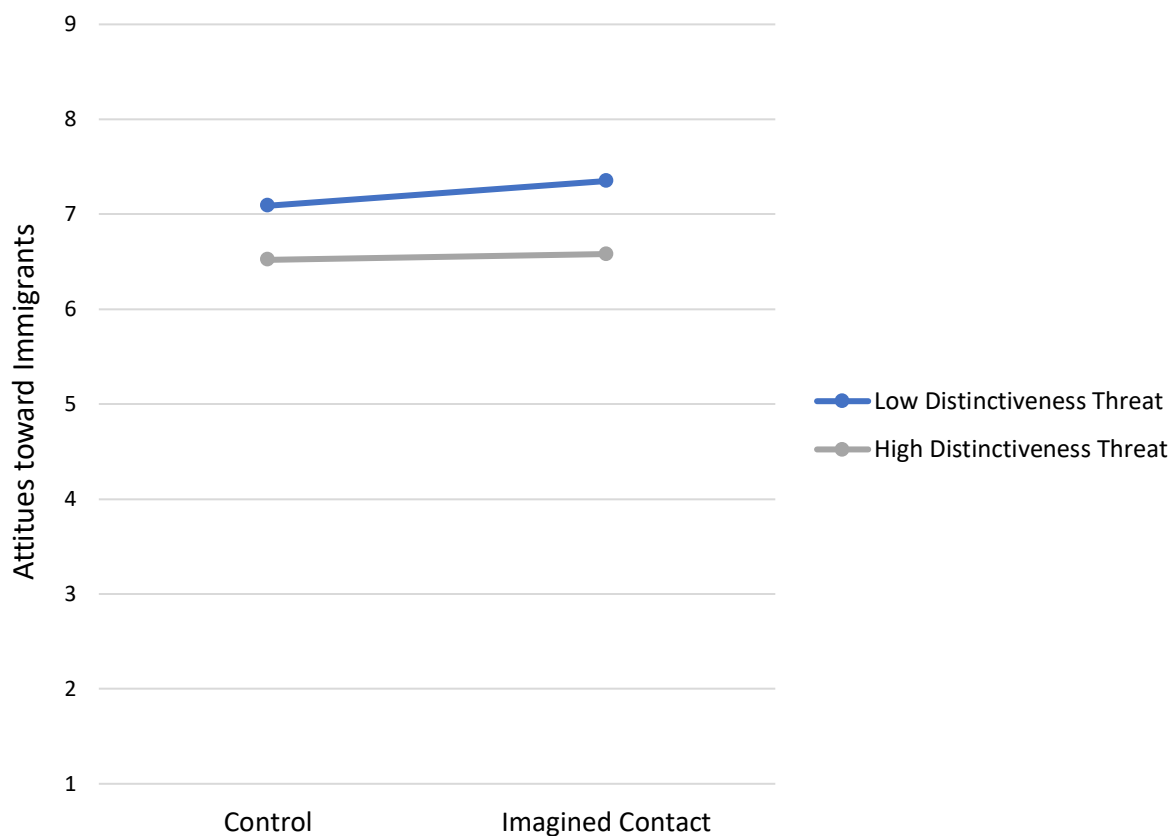
Note. Low and high distinctiveness threat conditions were comprised of subjects who responded one standard deviation below and above the mean threat score.

Discussion

Following from research indicating the waning effectiveness of imagined contact (Paluck et al., 2019) and the effects of distinctiveness threat on attitudes to immigrants (Davis & Hogg, in preparation), Study 1 investigated the moderating role of national identity distinctiveness threat in the relationship between imagined contact and immigrant attitudes. We found that although there was no effect of imagined contact, distinctiveness threat was a significant predictor of attitudes to immigrants (supporting Hypothesis 2). Participants higher in threat reported significantly less positive attitudes to immigrants than those reporting lower threat. There was no interaction between the two variables, leaving Hypotheses 1 and 3 unsupported. However, there was a stronger, but still non-significant, relationship between imagined contact and attitudes to immigrants when participants reported low distinctiveness threat rather than high. This result provided some evidence that the interaction effect was moving in the hypothesized direction, which was explored further in Study 2.

These results suggest that imagined contact may not improve attitudes to immigrants. However, the relationships between threat and imagined contact remain ambiguous due to the mixed measurement and manipulation design of Study 1. Because causality cannot be established, Study 1 cannot confirm whether imagined contact was ineffective by itself or because of the priming of distinctiveness threat through its initial measurement. Thus, in Study 2, we examined these relationships causally by testing whether the effects of imagined contact were improved by manipulating rather than measuring distinctiveness threat.

CHAPTER THREE – Study 2

As Study 1 found that distinctiveness threat was a predictor of attitudes to immigrants regardless of imagined contact, Study 2 examined the relationships between these variables by manipulating threat as well as contact, and testing their interaction. Although these studies used very similar procedures, the difference of manipulating rather than measuring distinctiveness threat is key to understanding the casual relationships between contact, threat, and attitudes, and the underlying social identity based mechanisms of contact. Research has demonstrated that distinctiveness threat can be mitigated by enhancing perceptions of ingroup distinctiveness, therefore, this study focused on the effects of reducing threat before contact. Although the effects of distinctiveness threat manipulation have been tested in the past by affirming the American identity and highlighting immigrant outgroup conformity to these ideals (i.e., Wojcieszak et al., 2020), this approach by itself has not proven to effectively improve attitudes. Therefore, Study 2's manipulation centers on demonstrating that immigrant groups are not changing or causing ambiguity about the identity, thereby reducing uncertainty around what the identity represents and improving perceptions of identity distinctiveness (Hogg, 2018).

We hypothesized 1) a main effect of the contact intervention, 2) a main effect of the distinctiveness threat reduction intervention, and 3) an interaction between these conditions, such that those who received a threat reduction intervention before engaging in imagined contact would express more positive attitudes toward immigrants than those who did not. We also examined exploratory hypotheses related to behavioral intentions towards immigrants to assess potential applicability of the interventions. Although behavioral measurement of contact outcomes are sparce, and generally restricted to laboratory experiments (e.g., sitting closer to an outgroup member; Turner & West, 2012; behavioral games; Scacco & Warren, 2018), some

researchers have investigated behavioral outcomes by measuring desired interaction with an outgroup member (i.e., talking, spending time, etc.; Turner et al., 2013). Therefore, the above hypotheses were also tested for these outcomes; however, our exploratory predictions were not firm due to the lack of robust testing of the enduring, behavioral effects of contact.

Method

Participants and Design

In a 2x2 two-way between-subjects experimental design, the independent variables of contact (imagined contact, no contact control) and distinctiveness threat reduction (threat reduction, threat confirmation) were orthogonally manipulated to determine their effect on the dependent variables of attitudes towards (a) immigrants and (b) immigration policy. An a priori power analysis (G*power analysis; Faul et al. 2009) concluded that approximately 264 subjects were required to obtain a standard effect size of $d = .41$ for the imagined contact intervention (Miles & Crisp, 2014), with alpha = .05 and power = .80 for this design. A total of 412 subjects began the study, with 97 removed for catastrophic missing data (over 50% missing), 38 removed for missed attention or manipulation checks, and 5 removed for poor quality data (i.e., straight lining, random responding), leaving a final sample size of $N = 272$. There were no significant relationships between whether a participant was removed and the imagined contact condition ($\chi^2(1) = 0.00$, p > .999), the distinctiveness threat condition ($\chi^2(1) = .42$, p = .516), or between the four experimental conditions ($\chi^2(3) = .79$, p = .851). There were also no significant differences on the attitudes to immigrants outcome variable between those who were removed ($M = 6.86$, $SD = 1.93$) and those in the final sample ($M = 6.90$, $SD = 1.94$; $t(313) = 0.12$, $p = .914$, $d = 0.02$), therefore removal of participants did not confound analyses.

Subjects were American residents over the age of 18 (M_{age} = 39.21, SD_{age} = 11.18) who identified as English speakers, recruited through Amazon Mechanical Turk using CloudResearch (Litman et al., 2017). Of these participants, 51.83% identified as men, 79.33% identified as White, 41.70% as Democrats, 47.23% had attained a bachelor's degree, 52.57% were non-religious, and the median income range was $40,000 – $59,999. High identification with their national identity was assessed as a boundary condition. Participants completed an online survey that took approximately seven minutes, with the subjects compensated $1.10 for their time.

Procedure

Participants were told that the researchers were studying participants' attitudes to contemporary social issues. Participants were randomly assigned to read either the immigrant-related distinctiveness threat reduction intervention or distinctiveness threat confirmation condition, and asked to answer a manipulation check item and an attention check. They were then asked to report on an immigrant group that they may have felt uncomfortable about interacting with in the past. Participants were then randomly assigned to an imagined contact condition asking them to either imagine a scenario where they are interacting with an immigrant (contact), or walking outdoors (control). Timers on the manipulation were used to ensure participants read and internalized the imagined contact manipulation, and as a manipulation and attention check, participants were asked to write about what they imagined. Finally, participants answered questions about their attitudes towards immigration and immigrants, as well as some demographic information. To ensure that the participants were not adversely harmed by the manipulations, we endeavored to ensure the content of the manipulations were similar to those experienced by participants naturally, as suggested by Rios et al. (2018), and ensured participants were provided with an extensive debrief and materials for additional reading.

Manipulations

National Identity Distinctiveness Threat Reduction

The distinctiveness threat reduction intervention was designed to reduce uncertainty about the American national identity, and perceptions that immigrants were causing any changes to the distinctiveness of the identity. Participants in the threat reduction condition read the following paragraph adapted from Davis and Hogg (in preparation):

> The number of immigrants in the US is steadily rising. Recent public opinion surveys have shown that many Americans believe that although there are more immigrants in the country, this increase in immigrants is not eroding the distinctive nature of what it means to be an American – the beliefs, values, and customs that Americans share and make them different to other nations. Although the immigrants may look, act, and think slightly differently, these differences are not likely to change the wider American society, especially as immigrants integrate and learn more about the American culture. These distinct characteristics of the American national identity are remaining unchanged, and are easily identifiable in America today.

Participants in the threat confirmation condition read the following paragraph:

> The number of immigrants in the US is steadily rising. Recent public opinion surveys have shown that many Americans believe that because there are more immigrants in the country, this increase in immigrants is eroding the distinctive nature of what it means to be an American – the beliefs, values, and customs that Americans share and make them different to other nations. Because immigrants look, act, and think slightly differently, these differences are likely to change the wider American society, especially as immigrants integrate and learn more about the American culture. These distinct

characteristics of the American national identity are changing, and are no longer easily

identifiable in America today.

Immigrant Group Check. Participants were asked to report the immigrant group they

imagined while reading the threat manipulation using the same methods described in Study 1.

Imagined Contact

Study 2 replicated Study 1's contact manipulation and manipulation check methods

(please see Appendix B for complete materials).

Measures

Distinctiveness Threat Manipulation Check

To check national identity uncertainty after the distinctiveness threat intervention,

participants indicated their disagreement or agreement from 1- strongly disagree to 9 - strongly

agree to the same six-item distinctiveness threat scale used in Study 1, adapted from Wagoner et

al. (2018). These items were again averaged to form a single-factor composite that was found to

be highly reliable after factor and reliability analyses ($M = 3.55$, $SD = 1.83$; $\alpha = .87$). Given a

failed distinctiveness threat manipulation, we intended to use the full scale to investigate threat.

Dependent Measures

The same nine-item attitudes towards immigrants and immigration policy scale from

Study 1 was answered by participants on a nine-point scale from 1 - strongly disagree to 9 -

strongly agree, and averaged to form a composite. Factor and reliability analyses found that the

single factor scale was highly reliable ($M = 6.90$, $SD = 1.94$; $\alpha = .96$).

Behavioral Outcomes. To test our exploratory hypothesis related to behavioral

intentions towards immigrants, a six-item measure of behavioral intentions adapted from Turner

et al., (2013) was used as a dependent variable. Items included, "I want to share a meal with an

immigrant person," and, "I want to have nothing to do with an immigrant person." These items were measured on a nine-point scale from 1 - strongly disagree to 9 - strongly agree, and the scale was then averaged into a composite measure of behavioral intentions toward immigrants after reverse-coding negatively worded items. Factor and reliability analyses found that the single factor scale was highly reliable (M = 6.84, SD = 1.92; α = .95).

American Identity Centrality

Participants completed the same three-item measure of their American identity centrality from Study 1. The three items measured on a nine-point scale from 1 – not very much to 9 – very much, were averaged to form a single-factor composite that was found to be highly reliable after factor and reliability analyses (*M* = 6.17, *SD* = 2.25; α = .91).

Demographics

Demographics including social status (Singh-Manoux et al., 2005), education level, income, gender, age, political ideology, political party, and religion will be collected. Subjects were also asked whether they were born in the US and whether they were a US citizen.

Data Analysis Strategy

Scale construction for each of the four scales described in the measures section above was completed by conducting a principal components analysis with oblique rotation, and scree values were analyzed to determine number of factors above a value of one. Measures were then averaged by factor to form continuous scales for use in subsequent analyses. To test whether the American identity centrality boundary condition was met, descriptive statistics were examined to determine whether the median value of the scale was above the midpoint, indicating high overall centrality levels across participants. The effect of the independent variables on centrality were also investigated by using an ANOVA analysis to determine if the variable needed to be included

as a covariate or moderator of the relationship between the manipulated independent variables and the dependent variable. Given no relationships were identified and the boundary condition was considered met, American identity centrality was not used in further analyses.

Covariates were tested for inclusion in the model by conducting two-way ANOVAs with the imagined contact and distinctiveness threat conditions and their interaction predicting each of the measured, continuous covariates (i.e., age, political identification, religious centrality, SES, education, and income). The effects of each of the demographic variables on the outcome measure were tested for potential inclusion as covariates. Continuous variables were analyzed by correlations with the outcome measure, and categorical measures (e.g., US citizenship status, whether the participant was born in the US, political party, gender) were analyzed by t-tests and one-way ANOVAs to indicate their effect on the outcome measure. If these tests identified significant effects, further covariate testing was conducted to determine inclusion in analyses. If the covariate was of statistical but not theoretical significance, relationships with other theoretical covariates were tested to identify which covariates should be included in analyses.

For hypothesis testing, the effects of the imagined contact intervention, distinctiveness threat reduction intervention, and their interaction were each analyzed by conducting a two-way ANCOVA and examining the simple main effects on attitudes toward immigrants. To test the exploratory hypotheses of the effects of the interventions on the behavioral intentions toward immigrants measure, an additional two-way ANCOVA was conducted.

Results

Manipulation Checks

To determine the success of the distinctiveness threat manipulation, a t-test was conducted examining differences in ratings of the manipulation check item between conditions.

Subjects in the distinctiveness threat reduction condition rated threat significantly lower (M = 3.61, SD = 2.50) than those in the confirmation condition (M = 4.90, SD = 2.66; $t(270)$ = 4.20, p < .001, d = 0.50), with the median value for the reduction condition well below the midpoint of the scale (*Median* = 2.00), and the median value for the confirmation condition higher than the midpoint (*Median* = 6.00), indicating a successful check. Therefore, the dichotomous threat condition variable was used in further analyses in place of the scale or check item.

Scale Construction

Attitudes toward Immigrants and Immigration

To determine the composition of the nine-item attitudes towards immigrants and immigration scale, a principal components analysis with oblique rotation of the nine items was conducted. The analysis indicated one factor clear of the scree (eigenvalue = 6.88) accounting for 76.45% of the variance in attitudes toward immigrants and immigrant policy. Therefore, the items were averaged into a single scale with a high reliability (M = 6.90, SD = 1.94; α = .96).

Although a Shaprio-Wilk test indicated non-normality of the distribution of the scale (W = 0.89, p < .001) and negative skew was apparent in visualizations, analyses demonstrated that skew and kurtosis were within normal limits (*skew* = -1.05, *kurtosis* = 0.42), and q-q plots of the distribution of the residuals appeared normal, therefore the measure was not transformed.

Behavioral Intentions

To determine the scale composition of the behavioral intentions toward immigrants items, a principal components analysis with oblique rotation of the six items was conducted. The analysis revealed one factor clear of the scree (eigenvalue = 4.79) accounting for 79.84% of the variance in behavioral intentions toward immigrants. Therefore, the items were averaged into a single scale with a high reliability (M = 6.84, SD = 1.92; α = .95).

American Identity Centrality

To determine the scale composition of the American identity centrality items, a principal components analysis with oblique rotation of the three items was conducted. The analysis revealed one factor clear of the scree (eigenvalue = 2.56) accounting for 85.19% of the variance in American identity centrality. Therefore, the items were averaged into a single scale with a high reliability $M = 6.17$, $SD = 2.25$; $\alpha = .91$).

Covariate Testing

To determine whether random assignment was able to successfully spread the effects of covariates across all four conditions, the effects of the manipulations and their interaction were tested on each of the measured demographic variables (i.e., gender, age, education, immigrant group check category, income, political identity, US citizenship status, whether the participant was born in the US, political party). Of all demographic variables, only age significantly varied depending on condition, with the interaction between the manipulations significantly predicting age ($F(1, 268) = 7.54$, $p = .006$, $\eta_p^2 = .03$), albeit with a small effect and minimal differences between estimated marginal means (Contact control, distinctiveness confirmation: $M_{age} = 36.04$; contact control, distinctiveness reduction: $M_{age} = 39.22$; imagined contact, distinctiveness confirmation: $M_{age} = 40.32$; imagined contact, distinctiveness reduction: $M_{age} = 36.11$.

Although this result would suggest age should be included as a covariate, because age is not theoretically related to differences in distinctiveness threat, imagined contact, and especially with estimated marginal mean ages within a similar range of 36-42, we conducted further analyses to investigate relationships with age to other potential covariates. A correlation analysis found that age was statistically significantly related to political identity ($r = .17$, $p = .005$). As political identity is a theoretically significant covariate of the attitudes toward immigrants and

immigration policy outcome variable (Borinca et al., 2022), this variable was tested for statistically significant effects on the outcome variable. A regression analysis found that political identity was significantly related to attitudes (β = -.62, $p < .001$), predicting 38% of the variance in attitudes (R^2 = .38, $F(1, 269)$ = 166.79, $p < .001$), with conservative ideology negatively related to positive attitudes toward immigrants. Therefore, political identity was included in further analyses as a covariate (see Table 3 for correlations, alphas, means, and standard deviations of variables).

Boundary Condition Testing

Subjects were screened for high identification with their national identity as a boundary condition. The median score was above the midpoint of the scale (*Median* = 6.33), indicating the boundary condition was met. To rule out the need to include the variable in the model as a moderator or covariate, relationships with the manipulated variables and the outcome variable were tested. The experimental conditions had no significant interaction or main effects on centrality (Imagined Contact: $F(1, 268)$ = 0.23, p = .630, η_p^2 = .00; Distinctiveness Threat: $F(1, 268)$ = 0.32, p = .575, η_p^2 = .00; Interaction: $F(1, 268)$ = 0.86, p = .356, η_p^2 = .00). Therefore, the boundary condition was satisfied, and the variable was not included in further analyses.

Hypothesis Testing

Power and Assumption Tests

To ensure the data met the assumptions of an ANCOVA analysis, tests of homogeneity of variance and normality of the data were conducted. A Levene's test of homogeneity of variances was conducted which indicated that homogeneity was present, $F (3, 267)$ = 2.42, p = .066. A Shapiro-Wilk test of normality indicated non-normality of the data (W = 0.98, $p < .001$), however, skew and kurtosis for each of the variables of interest and Q-Q plots of the residuals

Table 3

Means, Standard Deviations, Alphas, and Correlations for Variables of Interest in Study 2

Variable	M	SD	α	1	2	3	4	5	6	7
1. Imagined contact				−						
2. Distinctiveness threat				.02 [-.10, .13]	−					
3. American identity centrality (3 items)	6.17	2.25	0.91	-.03 [-.15, .09]	-.03 [-.15, .09]	−				
4. Age	39.21	11.18		-.10 [-.21, .02]	-.02 [-.14, .10]	.20** [.08, .31]	−			
5. Political identity	4.39	2.5		-.03 [-.15, .09]	-.03 [-.15, .09]	.47*** [.37, .55]	.17** [.05, .28]	−		
6. SES	4.66	1.68		.00 [-.12, .12]	.00 [-.12, .12]	.26*** [.14, .37]	.04 [-.08, .16]	.21** [.09, .32]	−	
7. Attitudes to immigrants (9 items)	6.9	1.94	0.96	.15* [.03, .27]	.08 [-.04, .20]	-.36*** [-.46, -.25]	-.19** [-.30, -.07]	-.62*** [-.69, -.54]	-.14* [-.26, -.02]	−
8. Behavioral intentions (6 items)	6.84	1.92	0.95	.23*** [.11, .34]	.02 [-.10, .15]	-.24*** [-.36, -.12]	-.13* [-.25, -.01]	-.42*** [-.51, -.31]	-.05 [-.17, .08]	.82*** [.78, .86]

Note. M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$, ** indicates $p < .01$, *** indicates $p < .01$. $N = 272$.

were within normal limits, therefore analyses proceeded. A post-hoc power analysis was conducted to investigate the observed power of ANCOVA analysis of main effects and interactions with $N = 272$ subjects, observed effect size of $\eta_p^2 = .03$, and one covariate, power was calculated as .81, indicating sufficient power was achieved for these analyses.

Main Analyses

To test for main and interactive effects of the imagined contact intervention and the distinctiveness threat reduction intervention on attitudes toward immigrants (Hypotheses 1, 2, and 3), a two-way ANCOVA with political identity included as a covariate was conducted. There was a significant effect of the imagined contact condition on attitudes toward immigrants, $F(1, 266) = 7.93$, $p = .005$, $\eta_p^2 = .03$, supporting hypothesis 1. Those in the imagined contact condition reported significantly more positive attitudes toward immigrants ($M_2 = 7.15$, $SE = 0.13$) than those in the control condition ($M_1 = 6.63$, $SE = 0.13$; $M_2 - M_1 = 0.51$, $SE = 0.18$). There was no main effect of distinctiveness threat condition on attitudes, ($F(1, 266) = 1.66$, $p = .199$, $\eta_p^2 = .00$), leaving Hypothesis 2 unsupported.

There was a significant interaction between imagined contact condition and distinctiveness threat condition, supporting Hypothesis 3 ($F(1, 266) = 4.34$, $p = .038$, $\eta_p^2 = .02$; also see Table 4 for ANCOVA statistics). Simple main effects analyses revealed significant differences between participants in the contact control condition ($M_1 = 6.56$, $SE = 0.18$), and the imagined contact condition ($M_2 = 7.45$, $SE = 0.18$) when distinctiveness threat was reduced, with those who experienced imagined contact reporting more positive attitudes ($M_2 - M_1 = 0.89$, $M_2 - M_1$ 95% CI [0.39, 1.39], $SE = 0.25$, $F(1, 266) = 12.30$, $p < .001$, $\eta_p^2 = .04$). There was also a significant difference between participants in the distinctiveness threat confirmation condition ($M_1 = 6.84$, $SE = 0.19$), and the reduction condition ($M_2 = 7.45$, $SE = 0.18$) when imagined

Table 4

Two-way ANCOVA of the effects of Imagined Contact and Distinctiveness Threat Interventions on Attitudes to Immigrants

	SS	df	MS	F	p	η_p^2
Imagined contact	17.78	1	17.78	7.92	.199	.01
Distinctiveness threat	3.73	1	3.73	1.66	.005	.03
Political identity	376.98	1	376.98	167.92	< .001	.39
Imagined contact x Distinctiveness threat	9.74	1	9.74	4.34	.038	.02
Residuals	597.19	266	2.25			

contact was experienced, with those who had distinctiveness threat reduced before contact reporting more positive attitudes ($M_2 – M_1 = 0.61$, $M_2 – M_1$ 95% CI [0.10, 1.13], $SE = 0.26$, $F(1, 266) = 5.61$, $p = .019$, $\eta_p^2 = .02$). Results found no significant differences between control ($M_1 = 6.71$, $SE = 0.18$) and imagined contact conditions ($M_2 = 6.84$, $SE = 0.19$) when distinctiveness threat was confirmed ($M_2 – M_1 = 0.13$, $M_2 – M_1$ 95% CI [-0.38, 0.65], $SE = 0.26$, $F(1,266) = 0.26$, $p = .610$, $\eta_p^2 = .00$), or between distinctiveness reduction ($M_2 = 6.56$, $SE = 0.18$) and confirmation conditions ($M_1 = 6.71$, $SE = 0.18$) when no contact was present ($M_2 – M_1 = -0.15$, $M_2 – M_1$ 95% CI [-0.43, 0.24], $SE = 0.26$, $F(1, 266) = 0.32$, $p = .572$, $\eta_p^2 = .00$) [Also see tables 5 and 6 for group means and simple main effects; see figure 2 for bar plot].

Exploratory Analyses

To test the exploratory hypotheses of the main and interactive effects of the imagined contact intervention and the distinctiveness threat reduction intervention on behavioral intentions

Table 5

Simple Main Effects of Distinctiveness Threat Condition at each Imagined Contact Condition on Attitudes to Immigrants

Imagined Contact	Distinctiveness Threat Condition		*Mean Diff*	*SE*	*F*	*p*	η_p^2
Condition	Reduction *M*	Confirmation *M*	[95% CI]				[95% CI]
Control	6.56	6.71	-0.15 [-0.65, 0.36]	0.26	0.32	.572	.001 [.000, .015]
Contact	7.45	6.84	0.61 [0.10, 1.13]	0.26	5.61	.019	.021 [.002, .057]

Note. M indicates the estimated marginal mean of the condition, calculated with political identity as a covariate.

Table 6

Simple Main Effects of Imagined Contact Condition at each Distinctiveness Threat Condition on Attitudes to Immigrants

Distinctiveness Condition	Imagined Contact Condition		*Mean Diff* [95% CI]	*SE*	*F*	*p*	η_p^2 [95% CI]
	Contact *M*	Control *M*					
Confirmation	6.84	6.71	0.13 [-0.38, 0.65]	0.26	0.26	.610	.001 [.000, .017]
Reduction	7.45	6.56	0.89 [0.39, 1.39]	0.25	12.30	<.001	.044 [.013, .091]

Note. *M* indicates the estimated marginal mean of the condition, calculated with political identity as a covariate.

Figure 2

Effect of Imagined Contact Intervention on Attitudes to Immigrants at each level of the

Distinctiveness Threat Intervention
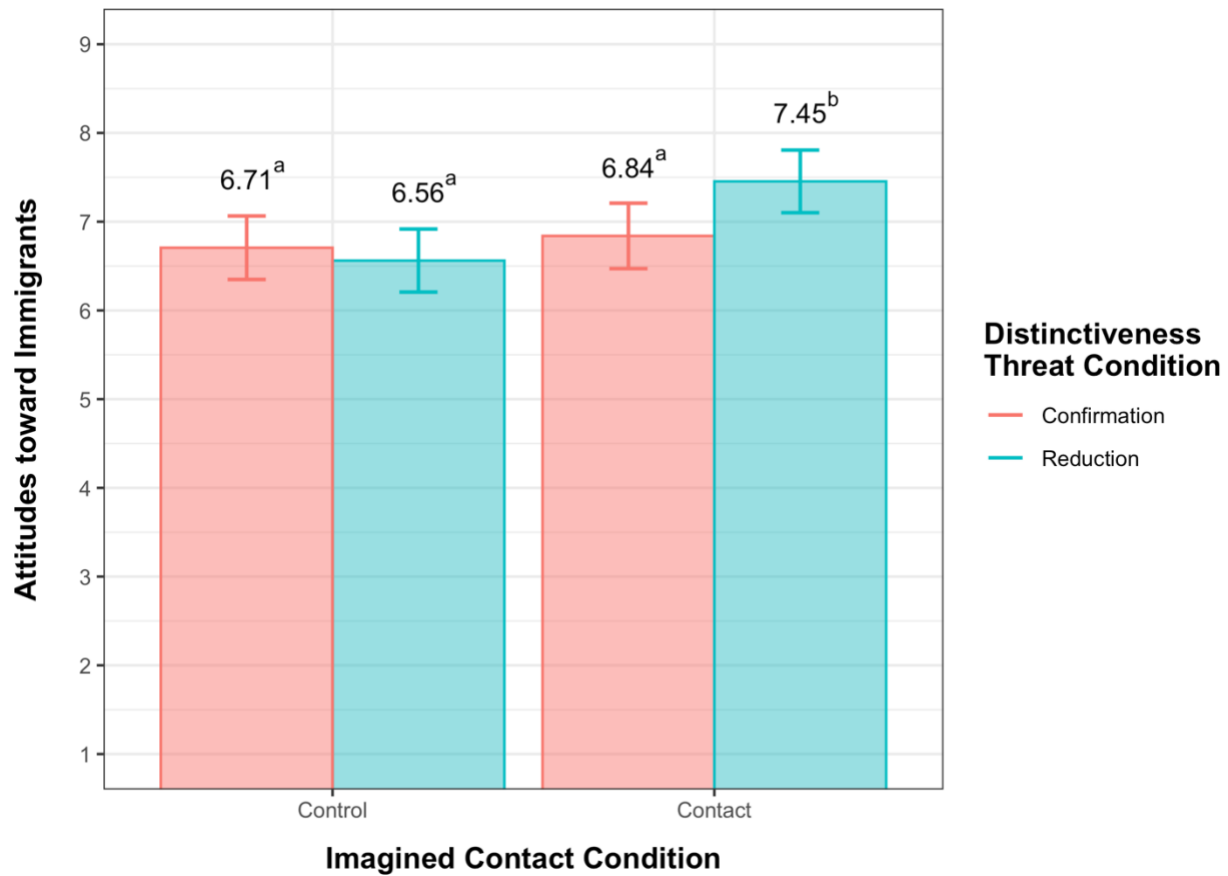
Note. Means that do not share a superscript differ significantly by simple main effect test. Error bars reflect 95% confidence intervals for the means.

toward immigrants (exploratory Hypotheses 1, 2, and 3), a two-way ANCOVA with political identity included as a covariate was conducted. There was a significant effect of the imagined contact condition on attitudes toward immigrants, $F(1, 247) = 42.85$, $p < .001$, $\eta_p^2 = .06$, supporting exploratory Hypothesis 1. Those in the imagined contact condition reported significantly more positive behavioral intentions toward immigrants ($M_2 = 7.26$, $SE = 0.15$) than

those in the control condition ($M_1 = 6.43$, $SE = 0.15$; $M_2 - M_1 = 0.83$, $SE = 0.21$). There was no

main effect of distinctiveness threat condition on behavioral intentions, ($F(1, 247) = 0.01$, $p =$

$.905$, $\eta_p^2 = .00$), leaving exploratory Hypothesis 2 unsupported. Finally, there was no significant

interaction between imagined contact condition and distinctiveness threat condition, leaving

exploratory hypothesis 3 also unsupported ($F(1, 247) = 2.70$, $p = .102$, $\eta_p^2 = .01$; also see Table 7

for additional ANCOVA statistics).

Table 7

Two-way ANCOVA of the Exploratory Effects of Imagined Contact and Distinctiveness Threat

Interventions on Behavioral Intentions Toward Immigrants

	SS	df	MS	F	p	η_p^2
Imagined contact	42.85	1.00	42.85	14.88	.000	.06
Distinctiveness threat	0.04	1.00	0.04	0.01	.905	.00
Political identity	151.10	1.00	151.10	52.46	< .001	.18
Imagined contact x Distinctiveness threat	7.77	1.00	7.77	2.70	.102	.01
Residuals	711.41	247.00	2.88			

Discussion

Following from Study 1's finding distinctiveness threat effects on attitudes to

immigrants, Study 2 investigated the causal effects of manipulating both imagined contact and

distinctiveness threat on immigrant attitudes when controlling for political identity, and with

identity centrality as a boundary condition. We found a significant effect of imagined contact

such that those who experienced contact reported more positive attitudes towards immigrants (supporting Hypothesis 1). Distinctiveness threat was not a significant predictor of attitudes to immigrants (Hypothesis 2 unsupported), however, there was a significant interaction between distinctiveness threat and imagined contact such that the effect of contact on attitudes to immigrants was only present for those who experienced the threat reduction intervention (supporting Hypothesis 3). These results suggest that imagined contact may only be able to improve attitudes toward immigrants when distinctiveness threat is reduced.

Exploratory analyses found a significant effect of imagined contact on behavioral intentions toward immigrants. However, no effects of distinctiveness threat or the interaction between these two variables was uncovered. This suggests that distinctiveness threat may not influence behaviors in the same way it does explicit attitudes.

CHAPTER FOUR

Overall Discussion

As interactions with immigrants becomes more frequent in our increasingly migratory world, interventions to improve intergroup relations will become essential to improve attitudes towards outgroup members and to thus ensure the effective functioning of communities (Silka, 2018). Although contact has long been seen as an effective intervention for improving attitudes toward outgroups (i.e., Allport, 1954; Miles & Crisp, 2014; Pettigrew & Tropp, 2006), recent research has discovered that the positive effects of contact may not be as strong (Paluck et al., 2019), especially under high anxiety and negative contact (i.e., the contact caveat; Barlow et al., 2012). However, research has shown that mitigating the negative effects of threat may improve contact outcomes (Árnadóttir et al., 2022). Therefore, the present research investigated whether reducing an immigrant specific identity threat (i.e., national identity distinctiveness threat; Davis & Hogg, in preparation) before contact can improve its positive effects.

Two studies with similar procedures were conducted to explore the general hypothesis that attitudes towards immigrants and immigration policies would be influenced by (a) feelings of national identity distinctiveness threat and (b) conditions of imagined intergroup contact. Study 1 measured distinctiveness threat and manipulated imagined contact to test whether threat played a significant moderating role in the relationship between contact and attitudes toward immigrants. Study 2 expanded our understanding of this moderated relationship by manipulating distinctiveness threat and causally testing the hypothesized relationships between contact, threat, and attitudes.

Study 1 found no significant difference between imagined contact conditions, suggesting that the intervention was not effective in producing more positive attitudes to immigrants than

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the control condition, leaving Hypotheses 1 and 3 unsupported. However, the results did find a significant effect of distinctiveness threat (Hypothesis 2), where those with higher threat reported more negative attitudes to immigrants. These results confirmed previous studies supporting the importance of distinctiveness threat in predicting attitudes to immigrants (Davis & Hogg, in preparation), and supported the idea that contact may not be as effective especially in extremely polarizing contexts such as contact with immigrants (Paluck et al., 2019; Schäfer et al., 2021). Study 2 investigated the effects of a distinctiveness threat reduction manipulation as well as imagined contact. We found a positive main effect of imagined contact on attitudes to immigrants (Hypothesis 1), which was moderated by distinctiveness threat such that the relationship was only present at low levels of distinctiveness threat (Hypothesis 3). However, there was no main effect of the distinctiveness threat manipulation (leaving Hypothesis 2 unsupported. The distinctiveness threat manipulation had a significant effect on our check variable, indicating a successful manipulation; therefore, we can confirm a causal relationship between contact, threat, and attitudes.

Study 2 also examined these same hypotheses for our exploratory outcome of behavioral intentions toward immigrants. Results showed that only imagined contact had a significant effect on intentions, with no effect of distinctiveness threat. Although Study 1 found that contact by itself may not be a strong predictor of attitudes toward immigrants, Study 2 found that imagined contact may be effective still for producing behavioral change intentions, as the main effect was significant with no interaction. As participants in the imagined contact condition indicated significantly more intentions to interact with outgroup members, these results support research finding that imagined contact can not only improve attitudes to the outgroup member with whom they had contact with, but also generalize the outgroup as a whole (Turner & West, 2012).

Across two studies with 1) an experimental design manipulating contact and measuring threat and 2) a true experimental design manipulating both variables, we were able to make novel conclusions about the effect of contact and its relationship with distinctiveness threat. These studies confirm the long-standing knowledge of the effectiveness of imagined contact for improving intergroup attitudes (Pettigrew & Tropp, 2006), but also contribute new ideas about a third variable (i.e., distinctiveness threat) that may be important to consider in order to strengthen the effects of contact. Results also confirmed research demonstrating the importance of contact for positive outgroup behavioral intentions (e.g., Bagci et al., 2022; Turner et al., 2013), but could not confirm any relationships with distinctiveness threat.

Testing these relationships in Study 1 by measuring distinctiveness threat resulted in high power to detect an effect and generalizability to true, unmanipulated attitudes to immigrants. Additionally, our true experimental design in Study 2 provided causal support for the relationships by manipulating both threat and contact. Through random assignment to each condition in Study 2, we were able was able to spread the effects of individual differences, with only political identity proving to be a significant covariate of the relationship between contact, threat, and attitudes. These methods helped gain a clearer picture of the causal effect of each manipulation on participants.

Although our results found a relatively small interaction effect, our findings still contribute important information to the literature about ways to potentially improve the effectiveness of contact. Especially given the fact that reported attitudes to immigrants were already quite high in our context, demonstrating an immediate effect after two short primes in a between-subjects design is a challenging feat (Rivers & Sherman, 2018), and presents a positive outlook for the generalizability and effectiveness of the interventions.

Limitations and Future Directions

A limitation to Study 1 is that no effects of imagined contact, or interaction between contact and distinctiveness, were found. It is possible that limited effects were due to the overwhelming effect of the measured distinctiveness threat variable when compared to the brief imagined contact manipulation which commands much less power to detect an effect on established attitudes towards outgroups. It is also possible that answering the distinctiveness threat variables at the beginning of the study primed participants with threat, regardless of their reported feelings which may have been different due to demand effects (e.g., Khademi et al., 2021), which overwhelmed the positive effect of the imagined contact intervention. In future studies, counterbalancing the threat measure and imagined contact intervention could help to parse out the effects due to the prime or to the actual intervention by removing ordering effects.

One limitation to Study 2 was that the distinctiveness threat intervention did not have a significant effect on the behavioral intentions toward immigrants, leaving our exploratory hypotheses unsupported. It's possible that although the distinctiveness threat intervention was able to demonstrate immediate changes to explicit attitudes toward immigrants, behavioral intention change by threat reduction may be a slower process that would take effect over time and continued contact and interaction, as suggested by research on behavioral changes after contact (Ioannou, 2019). Therefore, future studies should assess the effects of distinctiveness threat reduction before contact on behavioral outcomes longitudinally.

Finally, a limitation for both studies is that these relationships were tested under the boundary condition of high American national identity centrality. Although these results were found only under high centrality and, therefore, cannot be generalized to the entire population, given research that indicates American identity centrality is widespread (i.e., 69% of Americans

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are extremely or very proud of their national identity; Jones, 2021), we expect these findings to apply to a majority of the American population.

Future research could investigate whether the effects of threat reduction and contact on outgroup attitudes extend to other forms of contact, including extended contact and spontaneous imagined contact (Stathi et al., 2020), or other social identity based contact enhancing techniques other than distinctiveness reduction. Other forms of contact after threat is reduced could also be effective complements to prepare for direct contact as individuals progress along the "contact continuum" with outgroup members (Crisp et al., 2010; Crisp & Turner, 2009). Other avenues of research could investigate whether the effects of distinctiveness threat and contact vary by target outgroup, for example with political or regional subgroups (i.e., Wagoner et al., 2018). This research could expand to the minimal group paradigm (Tajfel, 1970) to test the effect of contact and threat reduction on outgroup attitudes based in pure categorization by controlling for outgroup differences.

Given Study 2's successful test of the causal relationships between our variables of interest, future studies could apply these findings to develop an intervention that prepares communities for incoming immigrants and real-life contact. Although these studies largely supported our predictions, because of the potential ramifications of large-scale social engineering that these interventions entail, it is important to continue to collect data and confirm a robust effect, and at the minimum no harmful effects, to justify continuing implementing these findings as an intervention. Once substantial confidence in the effects of these manipulations is obtained, conducting an application study could provide evidence for external validity of the effectiveness of the intervention. An application of the intervention could also provide a case study of how this intervention can be implemented in communities as part of public policy to improve attitudes and

acceptance of the welcoming community. Testing the current manipulations or adapting them to be applied over time, across different outgroups, or different types of contact would answer the call for more longitudinal research on prejudice reduction (Abrams, 2010; Stathi et al., 2020) and solidify our understanding of how contact can be used as a tool for long-term change in attitudes and behavioral intentions toward outgroups.

Conclusion

To address potential ways to smooth community integration of immigrants and the emergent need to consider ways to enhance contact effects, the present studies investigated the effects of contact and distinctiveness threat on attitudes toward immigrants, uncovering new ideas about how threat reduction can improve contact's effects. In Study 1 we confirmed the effects of distinctiveness threat on attitudes to immigrants, while Study 2 uncovered that reducing distinctiveness threat before contact was key to producing positive effects on outgroup attitudes. With this research, we broadened the understanding of how contact outcomes can be improved, and suggest ways to apply these findings to other paradigms in social psychology and to public policy surrounding immigrant integration. We hope future research can expand and test these interventions as a solution to prepare communities for future immigrant contact by reducing threat and laying the groundwork for future non-threatening intergroup interactions.

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Exclusion Criteria

"Are you 18 years or older?"

  _____ *Yes*

  _____ *No*

"Do you currently live in the United States?"

  _____ *Yes*

  _____ *No*

"Are you fluent in English?"

  _____ *Yes*

  _____ *No*

"Please click the sentence "I affirm that I will pay attention and answer honestly throughout this study."

  a. **I affirm** that I will pay attention and answer honestly throughout the study

  b. I do not affirm.

American Identity Check

"For each of the following statements, please indicate the extent to which you disagree or agree with the statement by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided."

Item	*Strongly disagree*								*Strongly agree*
"I strongly identify with being 'American'."	1	2	3	4	5	6	7	8	9
"I feel being American is important to who I am."	1	2	3	4	5	6	7	8	9
"I often think of myself as American."	1	2	3	4	5	6	7	8	9

General Instruction: *"We are measuring Americans' attitudes toward a contemporary social issue. You will be reading findings from surveys investigating one of these issues and will be asked about your own opinions. Please read the text and questions carefully."*

Distinctiveness Threat Measure

INSTRUCTIONS: *"For each of the following statements, please indicate the extent to which you disagree or agree with the statement by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided."*

Item	Strongly Disagree								Strongly Agree
"I feel uncertain about what it means to be an American"	1	2	3	4	5	6	7	8	9
"I feel uncertain about the characteristics that define being an American"	1	2	3	4	5	6	7	8	9
"I feel uncertain about what America stands for"	1	2	3	4	5	6	7	8	9
"I feel uncertain about the distinctiveness of America's identity compared to other countries"	1	2	3	4	5	6	7	8	9
"I feel that the presence of immigrants in the United States changes the distinct beliefs, values, and customs of America."	1	2	3	4	5	6	7	8	9
"I feel uncertain because the distinct beliefs, values, and customs of the American identity are changing,"	1	2	3	4	5	6	7	8	9

Immigrant Group Check

INSTRUCTIONS: *"All of us encounter many people we feel comfortable or uncomfortable around, and some we are relaxed or nervous about interacting with. Think of an immigrant group you may feel uncomfortable about interacting with. Please indicate which immigrant group you are thinking about in the box below."*

"Please indicate which immigrant group you are thinking about in the box below."

_____

Imagined Contact Manipulation

INSTRUCTIONS (this page will have a timer requiring them to remain on the page for 1 minute): *"Please read the following paragraph carefully, as we will be asking you to write about your thoughts later. *Contact Condition Only* Please think of a member from the immigrant group you just identified as you read this information"*

Imagined Contact Condition

*"We would like you to spend a few minutes imagining meeting and having a conversation with a new neighbor who moved onto your street. Imagine that in your conversation you find out your new neighbor is an immigrant to the United States from the group you mentioned earlier. Imagine that the interaction is **relaxed, positive, and comfortable**. Imagine three specific things that you learn about the life and experiences of new immigrants to the United States from your conversation partner."*

Control Condition
*"We would like you to spend a few minutes imagining you are <u>walking in the outdoors</u> in a new place. Try to imagine aspects of the scene (e.g., is it a beach, a forest, are there trees, hills, what's on the horizon). Imagine that the walk is **relaxed, positive, and comfortable**. Imagine <u>three</u> specific things that you experience in the scene."*

Imagined Contact Check
"In the box below, please write the three things you imagined in the scenario that made it positive, relaxed, and comfortable"

Dependent Variables
Attitudes Towards Refugees Scale - Adapted
INSTRUCTIONS:
"For each of the following questions indicate your answer by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided. <u>Please think of the immigrant group</u> that you wrote about earlier while answering these questions."

Item	Strongly disagree								Strongly agree
I feel I am accepting of immigrants	1	2	3	4	5	6	7	8	9
I would be friends with an immigrant	1	2	3	4	5	6	7	8	9
I feel immigrants should have a place in our community culturally	1	2	3	4	5	6	7	8	9
I feel the US government should accept immigrants	1	2	3	4	5	6	7	8	9
I would support a more lenient immigration policy where more immigrants were accepted	1	2	3	4	5	6	7	8	9
I feel immigrants should be able to live in our community	1	2	3	4	5	6	7	8	9
Immigrants should have immediate access to all social services such as education and healthcare	1	2	3	4	5	6	7	8	9
Immigrants should be given the chance to work as soon as possible	1	2	3	4	5	6	7	8	9
The government should do more to prevent discrimination against immigrants	1	2	3	4	5	6	7	8	9

Demographic Measures
Instructions: "You're almost done, thank you for your time so far! Now to complete the survey, please fill out the following demographics as they relate to you. Remember your answers are confidential."

Age: *"What is your age, in years?"* _____

Gender: *"What gender do you identify as?"*
　　_____ *Man*
　　_____ *Woman*
　　_____ *Non-Binary*
　　_____ *Other, please specify:* _____

Religious: *"Do you self-identify with a religion:"*
　　No _____
　　Yes _____

Religious identity: *If yes "Which religion do you identify with?"* _____
　　_____ Christianity (e.g., Protestants, Catholics, Baptists, LDS, etc.)
　　_____ Islam
　　_____ Judaism
　　_____ Hinduism
　　_____ Other (please specify which)_____

Religious centrality:

Item	Strongly disagree								Strongly agree
"How central do you feel your religion is to who you are"	1	2	3	4	5	6	7	8	9

Ethnicity" *"What is your ethnic background?"*
　　_____*Black American*
　　_____*Latinx American*
　　_____*White, European American*
　　_____*Middle Eastern American*
　　_____*Asian American*
　　_____*Native American*
　　_____*Other (Please Specify)*

Political Identity *"Please place yourself on this scale between very liberal and very conservative"*

Very liberal								Very conservative
1	2	3	4	5	6	7	8	9

Political Party: "Which political party do you self-identify with the most?"
　　_____*Democrat*
　　_____*Republican*
　　_____*Libertarian*
　　_____*Independent*
　　_____*Other (Please Specify)_____*

Born US: *"Were you born in the US?"*

    ____ *Yes*

    ____ *No (specify where you were born)_____*

US Citizen: *"Are you a US citizen or permanent resident (green card holder)?"*

    ____ *Yes*

    ____ *No*

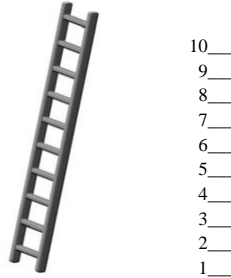   ____ *Do not wish to respond*

SES: *"Think of this ladder as representing where people stand in the United States.*
At the top of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the bottom are the people who are the worst off – who have the least money, least education and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the bottom.
Where would you place yourself on this ladder?
Please place a large "X" on the rung where you think you stand at this time in your life, relative to other people in the United States, from 1 (lowest status) to 10 (highest status)"


```
10___
 9___
 8___
 7___
 6___
 5___
 4___
 3___
 2___
 1__
```

Education: *"What is the highest level of education you have attained?"*

    _____*Some high school*

    _____*High school diploma or equivalency (GED)*

    _____*Bachelor's degree*

    _____*Graduate Degree*

    _____*Other specify*

Income: *"How much did you earn, before taxes and other deductions, during the past 12 months?"*

    _____*$0 through $19,999*

    _____*$20,000 through $39,999*

    _____*$40,000 through $59,999*

    _____*$60,000 through $79,999*

    _____*$80,000 through $99,999*

    _____*$100,000 and greater*

    _____Don't know

    _____No response

Appendix B: Study 2 Materials

Exclusion Criteria

"Are you 18 years or older?"
  ____ *Yes*
  ____ *No*

"Do you currently live in the United States?"
  ____ *Yes*
  ____ *No*

"Are you fluent in English?"
  ____ *Yes*
  ____ *No*

"Please click the sentence "I affirm that I will pay attention and answer honestly throughout this study."
   c. **I affirm** that I will pay attention and answer honestly throughout the study
   d. I do not affirm.

American Identity Check

"For each of the following statements, please indicate the extent to which you disagree or agree with the statement by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided."

Item	*Strongly disagree*								*Strongly agree*
"I strongly identify with being 'American'."	1	2	3	4	5	6	7	8	9
"I feel being American is important to who I am."	1	2	3	4	5	6	7	8	9
"I often think of myself as American."	1	2	3	4	5	6	7	8	9

Distinctiveness Threat Reduction Manipulations

General Instruction: *"We are interested in Americans' attitudes toward a contemporary social issue. You will be reading findings from surveys investigating one of these issues and will be asked about your own opinions. Please read the text and questions carefully."*

INSTRUCTIONS: *"Please read the following results of recent surveys about opinions on an important social issue. Study this carefully, you will be asked some questions about the material later."*

(1) Distinctiveness Threat Reduction Condition

*"The number of immigrants in the US is steadily rising. Recent public opinion surveys have shown that many Americans believe that although there are more immigrants in the country, this increase in immigrants **is not** **eroding** the distinctive nature of what it means to be an American – the beliefs, values, and customs that Americans share and make them different to other nations. Although the immigrants may look, act, and think slightly differently, these differences **are not likely to change** the wider American society, especially as immigrants integrate and learn more about the American culture. These distinct characteristics of the American national identity are remaining unchanged, and are easily identifiable in America today."*

(0) Distinctiveness Threat Confirmation Condition

*"The number of immigrants in the US is steadily rising. Recent public opinion surveys have shown that many Americans believe that because there are more immigrants in the country, this increase in immigrants **is** **eroding** the distinctive nature of **what it means to be an American** – the beliefs, values, and customs that Americans share and make them different to other nations. Because immigrants look, act, and think slightly differently, these differences **are likely to change** the wider American society, especially as immigrants integrate and learn more about the American culture. These distinct characteristics of the American national identity are changing, and are no longer easily identifiable in America today."*

Distinctiveness Threat Check

INSTRUCTIONS: "In the box below, please describe what the previous paragraph discussed."

INSTRUCTIONS: *"For each of the following statements, please indicate the extent to which you disagree or agree with the statement by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided."*

Item	Strongly Disagree								Strongly Agree
"I feel that the presence of immigrants in the United States changes the distinct beliefs, values, and customs of America."	1	2	3	4	5	6	7	8	9

Immigrant Group Check

INSTRUCTIONS:

"All of us encounter many people we feel comfortable or uncomfortable around, and some we are relaxed or nervous about interacting with. Think of an immigrant group you may feel uncomfortable about interacting with. Please indicate which immigrant group you are thinking about in the box below."

"Please indicate which immigrant group you are thinking about in the box below."

Imagined Contact Manipulation

INSTRUCTIONS (this page will have a timer requiring them to remain on the page for 1 minute):

"Please read the following paragraph carefully, as we will be asking you to write about your thoughts later. *Contact Condition Only* Please think of a member from the immigrant group you just identified as you read this information"

Imagined Contact Condition

*"We would like you to spend a few minutes imagining meeting and <u>having a conversation with a new neighbor</u> who moved onto your street. Imagine that in your conversation you find out <u>your new neighbor is an immigrant</u> to the United States from the group you mentioned earlier. Imagine that the interaction is **relaxed, positive, and comfortable**. Imagine <u>three</u> specific things that you learn about the life and experiences of new immigrants to the United States from your conversation partner."*

Control Condition

*"We would like you to spend a few minutes imagining you are <u>walking in the outdoors</u> in a new place. Try to imagine aspects of the scene (e.g., is it a beach, a forest, are there trees, hills, what's on the horizon). Imagine that the walk is **relaxed, positive, and comfortable**. Imagine <u>three</u> specific things that you experience in the scene."*

Imagined Contact Check

"In the box below, please write the three things you imagined in the scenario that made it positive, relaxed, and comfortable"

Dependent Variables
Attitudes Towards Refugees Scale - Adapted
INSTRUCTIONS:
"For each of the following questions indicate your answer by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided. Please think of the immigrant group that you wrote about earlier while answering these questions."

Item	Strongly disagree								Strongly agree
I feel I am accepting of immigrants	1	2	3	4	5	6	7	8	9
I would be friends with an immigrant	1	2	3	4	5	6	7	8	9
I feel immigrants should have a place in our community culturally	1	2	3	4	5	6	7	8	9
I feel the US government should accept immigrants	1	2	3	4	5	6	7	8	9
I would support a more lenient immigration policy where more immigrants were accepted	1	2	3	4	5	6	7	8	9
I feel immigrants should be able to live in our community	1	2	3	4	5	6	7	8	9
Immigrants should have immediate access to all social services such as education and healthcare	1	2	3	4	5	6	7	8	9
Immigrants should be given the chance to work as soon as possible	1	2	3	4	5	6	7	8	9
The government should do more to prevent discrimination against immigrants	1	2	3	4	5	6	7	8	9

Contact and Behavioral Outcomes
INSTRUCTIONS:
"For each of the following questions indicate your answer by clicking on a number on the scale provided, or entering a number. Please think of the immigrant group that you wrote about earlier while answering these questions."

	Strongly disagree								Strongly agree
"I want to talk to an immigrant person."	1	2	3	4	5	6	7	8	9
"I want to find out more about an immigrant person."	1	2	3	4	5	6	7	8	9
"I want to share a meal with an immigrant person."	1	2	3	4	5	6	7	8	9
"I want to avoid an immigrant person."	1	2	3	4	5	6	7	8	9
"I want to keep an immigrant person at a distance."	1	2	3	4	5	6	7	8	9
"I want to have nothing to do with an immigrant person."	1	2	3	4	5	6	7	8	9

Distinctiveness Threat Outcomes

INSTRUCTIONS: *"For each of the following statements, please indicate the extent to which you disagree or agree with the statement by clicking on the corresponding number from strongly disagree to strongly agree on the scale provided."*

Item	Strongly Disagree								Strongly Agree
"I feel uncertain about what it means to be an American"	1	2	3	4	5	6	7	8	9
"I feel uncertain about the characteristics that define being an American"	1	2	3	4	5	6	7	8	9
"I feel uncertain about what America stands for"	1	2	3	4	5	6	7	8	9
"I feel uncertain about the distinctiveness of America's identity compared to other countries"	1	2	3	4	5	6	7	8	9
"I feel that the presence of immigrants in the United States changes the distinct beliefs, values, and customs of America."	1	2	3	4	5	6	7	8	9
"I feel uncertain because the distinct beliefs, values, and customs of the American identity are changing,"	1	2	3	4	5	6	7	8	9

Demographic Measures

Instructions: "You're almost done, thank you for your time so far! Now to complete the survey, please fill out the following demographics as they relate to you. Remember your answers are confidential."

Age: *"What is your age, in years?"* _____

Gender: *"What gender do you identify as?"*
_____ *Man*
_____ *Woman*
_____ *Non-Binary*
_____ *Other, please specify:* _____

Religious: *"Do you self-identify with a religion:"*
No _____
Yes _____

Religious identity: *If yes "Which religion do you identify with?"* _____
_____ Christianity (e.g., Protestants, Catholics, Baptists, LDS, etc.)
_____ Islam
_____ Judaism
_____ Hinduism
_____ Other (please specify which)_____

Religious centrality:

Item	Strongly disagree								Strongly agree
"How central do you feel your religion is to who you are"	1	2	3	4	5	6	7	8	9

Ethnicity" *"What is your ethnic background?"*

_____Black American
_____Latinx American
_____White, European American
_____Middle Eastern American
_____Asian American
_____Native American
_____Other (Please Specify)

Political Identity *"Please place yourself on this scale between very liberal and very conservative"*

Very liberal								Very conservative
1	2	3	4	5	6	7	8	9

Political Party: "Which political party do you self-identify with the most?"

_____Democrat
_____Republican
_____Libertarian
_____Independent
_____Other (Please Specify)_____

Born US: *"Were you born in the US?"*

____ Yes
____ No (specify where you were born)_____

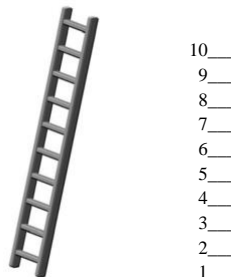**US Citizen:** *"Are you a US citizen or permanent resident (green card holder)?"*

____ Yes
____ No
____ Do not wish to respond

SES: *"Think of this ladder as representing where people stand in the United States.*
At the top of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the bottom are the people who are the worst off – who have the least money, least education and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the bottom.
Where would you place yourself on this ladder?
Please place a large "X" on the rung where you think you stand at this time in your life, relative to other people in the United States, from 1 (lowest status) to 10 (highest status)"

10___
9___
8___
7___
6___
5___
4___
3___
2___
1___

Education: *"What is the highest level of education you have attained?"*
_____*Some high school*
_____*High school diploma or equivalency (GED)*
_____*Bachelor's degree*
_____*Graduate Degree*
_____*Other specify*

Income: *"How much did you earn, before taxes and other deductions, during the past 12 months?"*
_____*$0 through $19,999*
_____*$20,000 through $39,999*
_____*$40,000 through $59,999*
_____*$60,000 through $79,999*
_____*$80,000 through $99,999*
_____*$100,000 and greater*
_____Don't know
_____No response