Contact and Explicit and Implicit Bias Towards Latinos/as

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Bachelor of Arts, West Virginia University, 2014

A Thesis presented to the Graduate Faculty
of the College of William and Mary in Candidacy for the Degree of
Master of Arts

Department of Psychology

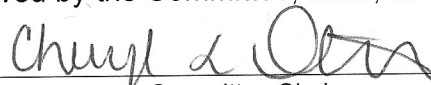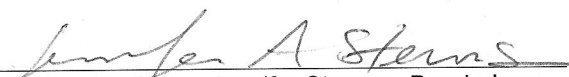The College of William and Mary
August, 2016

APPROVAL PAGE

This Thesis is submitted in partial fulfillment of
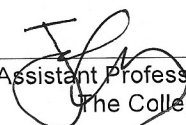the requirements for the degree of

Master of Arts

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COMPLIANCE PAGE

Research approved by

<u>Protection of Human Subjects Committee (PHSC)</u>

<u>Protection of Human Subjects Committee (PHSC)</u>

Protocol number(s): PHSC-2014-09-23-9818-cldickter

PHSC-2016-02-18-10948-cldickter

Date(s) of approval: 2014-10-06 through 2015-10-06

2016-03-02 through 2017-03-02

ABSTRACT

The positive effects of intergroup contact on prejudice reduction have been well established, with prior research demonstrating that real or imagined contact with outgroup members can reduce implicit and explicit racial bias (e.g., Pettigrew & Tropp, 2006; Turner, Crisp, & Lambert, 2007). The current research assessed non-Latino participants to more closely examine the relationship between contact and explicit bias (Study 1) and implicit bias (Study 2) towards Latinos. Additionally, this work examined if imagining a contact scenario with a Latino stranger was sufficient in reducing bias compared to those imagining contact with a stranger of unspecified race/ethnicity and if this effect could be mediated by alleviation of each integrated threat theory classifications (realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes; Stephan & Stephan, 1996). Study 1 results indicated that the individuals with more close, current contact with Latinos exhibited lower explicit bias towards this racial/ethnic group. Study 2 replicated Study 1's finding that current, close contact predicted explicit bias to an extent, although Study 2 provided little evidence to support that current, close contact is a predictor of implicit bias (i.e., stereotypic associations, attention allocation, and affect) towards Latinos. Study 3's manipulation of imagined contact did not yield differences in biases (either implicit nor explicit) between the two groups. However, there were significant relationships between implicit associations, explicit biases, and each of the four threat classifications. This research has broad implications for the contact hypothesis literature and for non-Latino/Latino interactions in everyday life. Future research should continue examining non-Latino and Latino intergroup interactions to help determine mechanisms to reduce bias.

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"Contact and Explicit and Implicit Bias Towards Latinos/as"

Individuals automatically separate others into ingroups and outgroups based on "who is like me, who is not like me" classification questions (Sumner, 1906). People generally choose to interact with ingroup members, because ingroup members are more likely to affirm the individual's beliefs, more easily understand the individual, and provide support and guidance (Mullin & Hogg, 1999). Although surrounding oneself with ingroup members may be beneficial to the individual, there are some negative consequences. Separation into groups can lead to an unwillingness to interact with outgroup members and the development of a preference for one's ingroup over outgroups (Allport, 1954; Sumner 1906). This phenomenon is known as ingroup bias and can result in seeing one's ingroup as superior to outgroups, which can also influence mental representations of the outgroups (Machunsky, Meiser, & Mummendey, 2009). For example, without the direct exposure to outgroup members this can lead individuals to rely upon stereotypes to gain information about the outgroup (Machunsky, Meiser, & Mummendey, 2009). There is also evidence of a relationship between ingroup bias and prejudice towards outgroup members (e.g., Brewer, 1999). The tendency to rely on stereotypes could create a barrier that interferes with peaceful intergroup contact (Bigler & Liben, 2007; Tajfel & Turner, 2001), a problem that deserves recognition and attention as the U.S. continues to become more diverse.

One avenue of research focusing on the reduction of stereotyping and conflict known to occur during intergroup contact is the contact hypothesis, a

theoretical approach (Allport, 1954; Amir, 1976; Pettigrew, 1997; Williams, 1947). The underlying assumption of the contact hypothesis is that many intergroup biases, prejudices, and stereotypes are present because of a lack of contact between these groups. By increasing constructive contact individuals gather information and knowledge about the outgroups, which helps to alleviate the tendency to rely on prejudices and stereotypes. With more information, inaccurate stereotypes can be corrected and individuals can rely on knowledge about the individual to understand them instead of relying on group stereotypes. Thus, by essentially creating constructive contact between groups, biases, prejudices, and stereotypes should weaken and conflict should be reduced. Specifically, the contact hypothesis has six mechanisms that, when all are present, function to maximize prejudice reduction: equal status, working together cooperatively, common goals, institutionally supported, sincere interactions, and time sensitivity (Allport, 1954; Amir, 1976; Pettigrew, 1997; Williams, 1947). Research has continued to test the contact hypothesis and found evidence that increasing intergroup contact leads to prejudice reduction in a number of different situations including roommate relationships (e.g., Shook & Fazio, 2008; Van Laar, Levin, Sinclair, & Sidanius, 2005) and workplace settings (e.g., Hean & Dickinson, 2005).

Over the last 65 years, a considerable amount of research has focused on the contact hypothesis (see Pettigrew & Tropp, 2006, for a review) and concluded that all six mechanisms, while ideal, do not necessarily need to be present to help alleviate prejudice (Jackman & Crane, 1986). A noted criticism of

the contact hypothesis is that not all contact can be institutionally structured (Pettigrew, 2008), or supervised by a higher authority. In other words, contact that occurs in every day life (e.g., at the grocery store) may still function to reduce prejudice over time even though there is not a higher institution monitoring and supporting the contact. Much research has applied the contact hypothesis in assessing the effects of casual, non-institutionalized intergroup contact can have on prejudice (e.g., Dixon, Durrheim, & Tredoux, 2005). For example, Levin et al. (2003) examined the contact hypothesis in a college population across four years in regards to social network developments. At the beginning and end of the students' undergraduate career, students' explicit, self-reported ingroup bias and intergroup anxiety (i.e., discomfort in the anticipation of the interaction with outgroup members) were measured. During their undergraduate years, participants were asked to report the number of new friends they made and whether these new friends were members of their ingroups or outgroups. The composition of students' friendship networks correlated with ingroup bias and intergroup anxiety at the end of their undergraduate tenure. That is, the formation of more outgroup friendships predicted lower ingroup bias and less intergroup anxiety. Thus, intergroup contact was associated with less prejudice.

A contributing line of research in the explanation of the development, and persistence of, prejudice is the role of threat. One leading threat theory, integrated threat theory (ITT, Stephan & Stephan, 1996, 2000), describes four major types of threats: realistic threat, symbolic threat, intergroup anxiety, and

negative stereotypes. Realistic threat includes, for example, perceptions of threat related to resources, economic wellbeing, or competition towards the ingroup whereas symbolic threat is more related to threats to cultural norms, practices, or beliefs between groups (for a review see Riek, Mania, & Gaertner, 2006). It has been posited that realistic threat and symbolic threat are related to biases against outgroup members in that those who view the outgroup as more threatening also exhibit more biases towards that group (Stephan et al., 2002). Previous research has identified intergroup anxiety to not only be a predictor or outgroup attitudes and bias (Ho & Jackson, 2001; Islam & Hewstone, 1993; Voci & Hewstone, 2003), but also those higher in intergroup anxiety tend to be higher in prejudicial attitudes (Hassan, 1978). Negative stereotypes can promote prejudice by providing unrealistic and inaccurate expectations for outgroup members' behaviors (Riek, Mania, & Gaertner, 2006). It is also well established that negative stereotypes are related to negative outgroup attitudes (Eagly & Mladinic, 1989; Spencer-Rodgers & McGovern, 2002).

For intergroup contact and threat, there is evidence that the relationship between contact and threat may not function the same for each ITT classification. Specifically, quantity of, or amount of, contact with minorities and biases towards minorities is mediated by realistic and symbolic threat (e.g., Stephan et al., 2002; Tausch et al., 2007; Velasco González, Verkuyten, Weesie, Poppe, 2008). However, when considering *quality* of contact, evidence suggests intergroup anxiety as the mediator between contact and biases (e.g., Islam & Hewstone, 1993; Stephan et al., 2000; Velasco González, Verkuyten, Weesie, Poppe, 2008;

Voci & Hewstone, 2003). Or rather, the effect of the value, or degree of authenticity, of contact on biases towards outgroup members is mediated by intergroup anxiety. Given that each of these four aspects can predict biases towards outgroup members as well as mediate the effect of contact on biases, it's vital to conduct research using measures of all four to more comprehensibly report threat towards outgroup members and the implications on intergroup contact.

Direct contact is not always feasible or obtainable (e.g., Phinney, Ferguson, & Tate, 1997; West, Holmes, Hewstone, 2011). To combat this occurrence, research has examined imagining contact scenarios with outgroup members and has found many positive effects of imagined contact lowering biases towards outgroup members in ways similar direct contact (Turner, Crisp, & Lambert, 2007; West, Holmes, Hewstone, 2011). Research has since continued examining a positive (versus a neutral) imagined contact scenario's role in reducing bias towards a number of groups throughout different social scenarios (e.g., Crisp, Stathi, Turner, & Husnu, 2008; West & Bruckmüller, 2013). It is posited that imagining contact is sufficient to reduce bias, improve intergroup attitudes, and reduce intergroup anxiety (Turner, Crisp, & Lambert, 2007). Investigation of the mechanisms behind the effectiveness of imagined contact has identified aspects related to integrated threat theory (e.g., intergroup anxiety; West, Holmes, & Hewstone, 2011), without testing the four classifications simultaneously. Therefore, further research is needed to determine how

imagined contact can influence biases through ITT classifications as potential

mediators.

Arguably, since increasing contact between groups can reduce conflict,

individuals should have lower prejudice towards groups with which they have had

more past interactions. For example, those from more diverse areas (e.g., cities,

highly populated towns) may have an easier time interacting with outgroup

members, as they are more accustomed to having the opportunity to experience

an intergroup interaction (Bowman & Denson, 2011). Some research has tested

this reframing of the contact hypothesis considering familiarity relating to

attitudes and found empirical support. For example, Jackman and Crane (1986)

found that, for White individuals, the greater the number of close friends or

acquaintances who were Black, the more favorable explicit attitudes towards

Blacks. While it is important to demonstrate the relationship between contact and

explicit bias, a deeper examination of the relationship between contact and

implicit bias is also needed.

Research has demonstrated that for sensitive topics (i.e., prejudice),

individuals may be hesitant to respond honestly in favor of a response that they

assume will make them more well liked, a theory referred to as social desirability

(Holmes, 2009). Implicit measures involve accessing the more automatic

responses that individuals are not able to alter or control and thus can be

particularly informative when examining sensitive topics that may be affected by

social desirability. Research has demonstrated that not only can there be a

disparity between explicit attitudes and implicit attitudes, but they can influence

behaviors in different ways (Bargh, 1999; Dovidio & Fazio, 1992; Dovidio, Kawakami, & Gaertner, 2002; Fazio, 1990). Specifically, while explicit attitudes commonly shape deliberate, or more considered responses, implicit attitudes are expressed in situations where it is difficult to monitor, or be aware of, responses such as nonverbal behaviors (Chen & Bargh, 1997; Dovidio, Kawakami, & Gaertner, 2002; Wilson, Zanna, & Cooper, 1974). Therefore including both explicit and implicit measures to study biases is important.

Past research has examined the relationships between previous contact with outgroup members and current implicit attitudes. Much work has measured implicit prejudice through examining automatic associations, in which differences in reactions times to pairings of targets with valenced words are measured and are thought to be indicative of implicit associations that individuals have with certain target groups (Greenwald, McGhee, & Schwartz, 1998). For example, a stronger association between words relating to the White racial category and positive words versus words relating to the Black racial category and positive words would be indicative of an implicit association of the combination of the White racial category with good thus indicating a bias. Differences in associations have been shown to be related to contact. For example, compared to individuals without African American friends, individuals with African American friends had less of a negative implicit bias demonstrated by a smaller difference in associations of White-good words with Black-good words (Aberson, Shoemaker, Tomolillo, 2004). Additionally, there is evidence that for non-Muslims, imagining

contact with a Muslim is sufficient to reduce implicit association biases towards that outgroup (Turner & Crisp, 2010).

In addition to implicit associations, research has examined the implicit affective responses to target groups as another measure of bias. This construct has been assessed in the past through a priming paradigm known as the Affect Misattribution Procedure (Payne, Cheng, Govorun, & Stewart, 2005). This task involves briefly presenting individuals with an image followed by a neutral stimulus which the participants rate as either pleasant or unpleasant. The initial image acts as a prime to evoke either positive or negative affect at an implicit level; therefore, participants are not consciously aware that the image is affecting their ratings of the ideograph which is an affectively neutral stimulus. For example, if an individual is presented with an image that evokes positive affect (e.g., smiling babies), they would be more likely to rate the following ideograph as pleasant. On the other hand, if an individual is presented with an image that evokes negative feelings (e.g., a snake in a striking position), he or she would be more inclined to rate the following ideograph as unpleasant. Evidence of ingroup bias has been reported (Payne, Cheng, Govorun, & Stewart, 2005) in that individuals tend to rate images from their ingroup more positively than images from their outgroup. It is possible that more contact with outgroup members can reduce this tendency and thus make the ratings more equitable, although this has not been tested.

Recent work has looked at attention allocation as another construct related to prejudice. It has been posited that differences in initial attention

allocation to Black compared to White faces could be occurring due to the automatic activation of threatening stereotypes associated with stereotypes about Blacks which would direct an individual to focus on potentially threatening stimuli – in this case outgroup members faces (Trawalter, Todd, Baird, & Richeson, 2008). However, other research has focused on the role of contact and attention allocation. For example, research has indicated that close contact with outgroup members can moderate initial attention allocation to outgroup faces (Dickter, Gagnon, Gyurovski, & Brewington, 2014). Specifically, the more close contact reported between White participants and Black outgroup members, the less of a difference for initial attention to Black versus White faces. Interestingly, these findings were replicated for White participants and Asian outgroup members indicating that contact moderated attention to a group without threatening stereotypes. Therefore a focus on close contact and attention allocation should be elaborated further in a new group (Latinos). Furthermore, research should include an imagined contact scenario to determine whether there is a causal relationship between contact and implicit attention allocation. Examining attentional bias towards racial groups is important to study as research has supported that greater attention allocation can be related to severity of evaluations of outgroup members (Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997; Dickter, Gagnon, Gyurovski, & Brewington, 2014).

Although this previous work sheds some light on the relationship between implicit bias and outgroup contact, the vast majority of this research primarily focuses on White-Black relations (Levin et al., 2003; Shook & Fazio, 2008; Van

Laar et al., 2005). This is problematic in that there is no guarantee that other intergroup contact pairings will function the same as White-Black relations function. As Latinos now make-up the largest minority group in the U.S. (Gandara, 2010), it is important to understand how Latino and non-Latino relations occur and to identify barriers that could create conflict during interactions. Preliminary work has begun to illuminate these relations. For example, Ellison, Shin, and Leal (2011) examined contact with Latinos through various mediums (e.g., friendships, family members, high school) and identified closer contact as the best predictor of a rejection of negative stereotypes towards Latinos. While this study identified the unique importance of closer contact, it did not include a validated explicit measure to assess attitudes towards Latinos. This is an issue as it prevents generalizability and makes it more difficult to replicate the results. Using a validated measure will also make it easier to compare how results are similar or different from current research findings. Therefore, it is necessary to continue work to more clearly understand the relationship between degrees of contact and validated explicit prejudicial measurements. Previous research has indicated that exposure to outgroup members can also influence implicit biases towards this ethnic group. For example, Brannon and Walton (2013) demonstrated (Experiments 2 and 3) that for White participants, increasing feelings of social connectedness with a Mexican American peer (Experiment 2) and having White participants engage in a Mexican cultural task (Experiment 3), decreased Whites' implicit prejudice towards Latinos (measured with the IAT). Therefore, this study demonstrated that by increasing social

connectedness or participating in cultural tasks, outgroup members can decrease negative implicit associations. While this expands the research examining a form of bias towards Latinos, it does not demonstrate the relationship between various contact forms and other implicit biases such as affect and attention allocation.

The purpose of this project was to examine the relationship between various forms of contact with Latinos and implicit and explicit bias towards Latinos. Three studies were conducted using multiple validated contact measures, explicit measures, and implicit measures assessing affect, associations and attention allocation. Based on previous contact hypothesis work, it is hypothesized that more reports of closer contact (e.g., Ellison, Shin, & Leal, 2011; Jackman & Crane, 1986) with Latinos will be predictive of less implicit prejudice (e.g, Brannon & Walton, 2013) and less explicit prejudice (e.g., Ellison, Shin, & Leal, 2011). It is also hypothesized that imagining a positive contact scenario with a Latino stranger will yield less implicit bias (e.g., Turner & Crisp, 2010) and explicit bias (e.g., West, Holmes, Hewstone, 2011) compared to a control condition. It is expected that those who imagined contact with a Latino stranger will exhibit less threat in each ITT category compared to those who did not. Finally, it was hypothesized that the four ITT aspects (realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes) would mediate the effect contact has on bias reduction (e.g., Velasco González, Verkuyten, Weesie, Poppe, 2008). These hypotheses were examined using two correlational studies and one experimental study. The first will establish a relationship between contact with Latinos and explicit bias demonstrating the importance of closer,

current contact in predicting prejudicial self-reported attitudes towards Latinos. The second study implements three implicit measures relating current close contact with Latinos to various prejudicial constructs (i.e., affect, associations, and attention allocation). The third study manipulated contact (via an imagined contact scenario) to assess the effect of positive contact on implicit bias and explicit bias (including threat).

Study 1

The purpose of this study was to examine the relationship between previous contact with Latinos and current explicit prejudice towards Latinos. This was tested using multiple contact measures and multiple explicit prejudice measures. By including multiple measures, it allowed for a more complete understanding of the relationship. The multiple measures of contact experiences will also function to represent different levels of contact, bringing to light which contact situation is related to the lowest prejudicial attitudes. There are two measures of prejudicial attitudes that will be used, one a direct rating of the Hispanic/Latino ethnic group, and the second measure of the bias towards the Hispanic/Latino group. Based on previous work, it was hypothesized that the closer the contact reported (i.e., spending more time with Latinos, more close friends with Latinos) the less prejudicial attitudes towards Latinos will be self-reported on both measures. It was also hypothesized that there will be a relationship among the contact variables and a relationship among the explicit prejudicial measures, separately indicating construct validity.

Study 1 Method

Participants

William and Mary undergraduates (*n* = 656) completed a mass testing survey as part of psychology course requirements through the SONA online testing system. The majority of the participants self-identified their ethnicity as White (69.1%) and participants were predominantly female (65.5%). Anyone who indicated they were under 18 years of age, or identified as Hispanic/Latino was excluded from the analyses.

Measures

Contact. Contact with Latinos was measured with two explicit measures: prior diversity exposure (α = .79; Shook & Fazio, 2008) and an altered familiarity with outgroups measure (α = .94; Walker, Silvert, Hewstone, & Nobre, 2008). Prior diversity exposure is a 25-item questionnaire that functions as a method of reporting previous exposure to two racial categories (i.e., White and Latino) in various environments (e.g., "What proportion of people in the neighborhood where you grew up was White/Caucasian?") on a scale of 0 (Zero) to 6 (All). Higher numbers indicate a higher proportion of that racial category. Categories include: "the neighborhood where you grew up," "the high school from which you graduated," "your high school class," "your close friends from high school," and "your casual friends from high school." For the purposes of this research, only the 5 items regarding Latinos will be considered for analyses. Familiarity with outgroups (FWO) is a 13-item questionnaire that ascertains, in two subscales, the amount or frequency that individuals generally interact with a member of a social group. The original scale has been altered in that "Latino" has replaced

"Black" for each item. In the first subscale, participants rate their agreement with statements regarding current social contact (e.g., "I often talk to Latino people in college") from 1 (Strongly Disagree) to 5 (Strongly Agree). In the second subscale, participants indicate the frequency of individuating experiences (e.g., "How often do you have Latino friends over to your place") from 1 (Never) to 5 (Frequently). Averages are computed for each subscale, where higher numbers indicate more contact with this racial group.

Racial Attitudes. Two measures were used to assess explicit prejudicial attitudes towards Latinos. The first was a feeling thermometer ($\alpha = .85$; Converse & Presser, 1986), a measure where individuals rate 19 societal groups from 0-100 with instructions that numbers 0-50 are more negative ratings and numbers 51-100 are more positive ratings. Although other societal groups are included (e.g., Habitat for Humanity, Doctors) for the purpose of this study, only the Hispanic/Latino racial and ethnic group rating will be used in analyses. Higher numbers indicate a more positive attitude toward Hispanics/Latinos. The second was the Modern Ethnicity Bias Scale (MEB; $\alpha = .92$; Segrest Purkiss, Perrewé, Gillespie, Mayes, & Ferris, 2006), a 12-item measure that indicates bias towards Latinos by rating statements (e.g., "Latinos should not push themselves where they are not wanted") from 1 (Strongly Disagree) to 7 (Strongly Agree). Three items are reverse coded and then an average was taken to create the composite variable. Higher numbers for this composite variable indicate more bias towards Hispanics.

Study 1 Results

Of the 656 participants who completed the mass testing survey, 185 were excluded from analyses for not completing all measures (*n* = 138), completing the survey multiple times (*n* = 11), or for identifying as Hispanic/Latino (*n* = 36). The final participant count was 471 (M_{age} = 18.56, *SD* = 1.27) with the majority being female (65.8%). The data were prepared for analysis by reverse coding select items and creating composite variables (see Methods for process). Means and standard deviations for each of the measures are presented in Table 1. Due to the strength of the significant relationships (evidence of colinearity) between the contact measures, correlations were used in place of regressions. Correlations were run to assess the relationships among the two contact variables and the two explicit prejudice measures (see Table 2). The MEB scale was negatively correlated with the two familiarity with outgroups subscales. Specifically, the more frequent contact with Latinos reported, the lower the bias towards Latinos. However, the MEB scale was not significantly related to any of the five prior diversity exposure items. With regard to the feeling thermometer rating for the Hispanics/Latinos societal group, there were significant positive correlations for both FWO subscales in that more frequent contact with Latinos was predictive of more positive ratings. Unlike the MEB, the feeling thermometer was significantly positively related to each of the five prior diversity exposure items.

Study 1 Discussion

The relationship between contact and prejudice affirmed the hypotheses for Study 1. More contact was predictive of less bias overall, with closer more

frequent contact being the strongest predictor of bias. Specifically, individuals who had more current contact and more frequent contact with Hispanics/Latinos reported less negative attitudes against this group. The relationship of current, meaningful contact with Hispanics/Latinos and prejudicial attitudes support the contact hypothesis research (e.g., Pettigrew, 2008; Shook & Fazio, 2008) emphasizing that mere exposure is not enough to predict prejudice, but rather closer, more intimate contact.

However, this effect was not consistent throughout the study. Specifically, previous contact was not predictive of general bias towards this group while current contact was predictive. This could be that current contact affects attitudes and biases towards this racial group beyond past contact. In other words, there is something unique about current closer contact methods that can be used to more clearly understand the relationships between contact and explicit prejudice.

Study 2

Research has demonstrated that for sensitive topics (i.e., prejudice), individuals may be hesitant to respond honestly in favor of a response that they assume will make them more well liked, a concept referred to as social desirability (Holmes, 2009). Implicit measures involve assessing the more automatic responses that individuals are not able to alter or control. By implementing implicit measures into studies that examine sensitive topics, it can combat the social desirability tendency and provide more inclusive understandings of an individual's attitudes. Previous research has indicated that exposure to outgroup members can influence implicit attitudes. For example, by

increasing feelings of social connectedness between Whites and Latinos, Whites'

implicit prejudice has been shown to decrease (Brannon & Walton, 2013).

Study 2 examined the relationship between contact with Latinos and bias

towards Latinos including three implicit measurements. Each implicit task

measures a construct related to prejudice that can provide insight into the implicit

processing that perceivers engage in towards target members. Including all three

(e.g., affective priming, associations, and attention allocation), a comprehensive

picture of the relationship between contact and outgroup bias will be revealed. It

is first expected that the relationship between the amount of contact with Latinos

and explicit biases towards Latinos found in Study 1 will be replicated in Study 2.

It hypothesized that this relationship will be consistent for each implicit measure,

in that more contact will be predictive of less bias. Additionally, those who have

more indications of being prejudiced towards Latinos on the explicit measures

will also have this effect on the implicit measure.

Study 2 Methods

Participants

William and Mary undergraduates (n = 172) who did not identify as

Hispanic/Latino came into the lab to complete three implicit computer tasks and

several questionnaires. Participants received partial course credit in exchange for

their participation.

Materials

For the dot-probe and AMP tasks, the same sixteen face images were

used as in Study 1. The photographs each depicted a single individual from

shoulders up in a gray sweatshirt with a blue background. Eight images were of Latino faces (4 female, 4 male) and eight images were of White faces (4 female, 4 male).

Measures

Contact. Close contact was the strongest predictor of explicit prejudice in Study 1. As a result, Study 2 replaced the measure of prior diversity exposure (Shook & Fazio, 2008) with a friends list task to more accurately measure the race/ethnicity of participants' closest contacts (Greenwald, McGhee, & Schwartz, 1998). Participants first indicated the initials of their 20 closest friends and then were asked to identify the race/ethnicity of the individuals they listed. The number of Latino/a friends listed was added up for each participant.

Explicit Measures. In addition to the Study 1 measures (i.e., Feeling Thermometer and Modern Ethnicity Bias Scale) two measures were also included in Study 2. The first is the Motivation to Control Prejudiced Reactions scale (MCPR; Dunton & Fazio, 1997) and the second is the Social Dominance Orientation scale (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994).

The MCPR (α= 0.80) is a 17-item questionnaire for which participants indicate their agreement with each statement on a scale from -3 (strongly disagree) to +3 (strongly agree). Statements include thoughts or emotions (e.g., "I get angry with myself when I have a thought or feeling that might be considered prejudiced.") as well as behavior (e.g., "If someone who made me uncomfortable sat next to me on a bus, I would not hesitate to move to another seat."). The MCPR is scored by reverse coding specific items to get an average

of the motivation an individual has to control prejudiced behaviors where higher numbers indicate more motivation and lower numbers indicate less motivation. There are two sub-scales: restraint and concern. The concern subscale involves the examination of the extent to which an individual is concerned with appearing prejudice. Commonly these individuals hold more egalitarian views. The restraint subscale involves the examination of the extent to which an individual restrains, or attempts to control, their prejudice.

SDO was examined to determine whether intergroup contact affected general beliefs about group equality, not just specific prejudicial attitudes. The SDO scale (α= 0.86) is a 14-item questionnaire involving statements that participants rate on a scale from 1 (Very Negative) to 7 (Very Positive). SDO is the extent to which an individual believes in an egalitarian versus a hierarchical society. This questionnaire includes items that emphasize inequality (e.g., "some groups of people are simply not the equals of others.") as well as items emphasizing equality (e.g., "in an ideal world, all nations would be equal."). Higher numbers indicate a preference for inequality in society whereas lower numbers indicate a preference for equality. SDO is highly correlated with prejudice (Ho et al., 2012; Guimond et al., 2013), in that the more a person reports being prejudiced, the more they are also in favor of a hierarchical society.

Implicit Measures. Three implicit measures were included in Study 2: the Affect Missattribution Procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005), the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), and the dot-probe task (MacLeod, Mathews, & Tata, 1986). Each implicit

measure looks at different facets related to prejudice allowing for a more comprehensive view of contact's relationship with prejudice. The AMP assesses implicit affect, the IAT uses differences in reaction times to indicate implicit associations, and the dot-probe captures automatic relative attention allocation between two types of stimuli.

The AMP script was programmed on Inquisit. The procedure includes briefly presenting an image before presenting a Chinese ideograph on a computer screen. Participants are asked to rate the ideograph as either pleasant or unpleasant with pre-identified keys on a standard keyboard. The initial image acts as a prime to evoke either positive or negative feelings at an implicit level; therefore, the ratings of the ideographs are influenced by the feeling response elicited by the presented image. For the purpose of this study, the AMP will use images of human faces as primes before presenting the ideographs. Therefore, the ratings of the images will allow for racial biases to be detected more reliably than self-reported measures (Oikawa, Oikawa, & Aobayashi, 2009). The face flashes for 75ms (consciously recognizable) followed by a black screen for 125ms. Then, the ideograph appears for 100ms, and the participant has 5000ms (5 seconds) to rate the ideograph as pleasant or unpleasant. There were two categories of faces separated by ethnicity: White and Latino. Each ethnic category had four male and four female faces totaling eight images. These 16 images were presented at random 48 times, serving as a block, with each image being rated 3 times. Participants were presented with four blocks, thus rating images a total of 192 times with each image being rated 16 times. Scoring of the

AMP entails calculating the proportion of trials for which participants rated ideographs as pleasant. Thus, higher numbers indicate a more positive implicit attitude.

The IAT script was taken from Inquisit's Brief IAT (Sriram & Greenwald, 2009) used eight Latino surnames and eight White surnames, respectively. Names were selected by the top eight reported surnames according to the 2010 US Census for each ethnic group. Therefore the list of names used represented the most frequent surnames for each racial category, and thus the most recognizable. This measure involved the participant first being introduced to the association task by indicating which names are typically White (e.g., Smith) and which names are typically Latino (e.g., Garcia) using pre-marked keys on a standard keyboard. Next participants indicated which words are typically pleasant (e.g., laughter) and which words are typically negative (e.g., hatred) using the same keys. The third section combined the previous two sections in which participants were required to indicate if words were either White/pleasant or Latino/unpleasant. The words that appeared are selected at random from the word list (8 good words, 8 bad words, 8 Latino surnames, 8 White surnames) and participants categorize with these pairings for 60 trials. Participants were then to be accustomed to the keys for White and Latino categorizations being reversed (the pleasant and unpleasant keys remained the same). In the final section participants indicated if words are White/unpleasant or Latino/pleasant. Again the words were selected at random, and participants categorized the words for another 60 trials. The word pairing order was reversed for half the participants to

counteract any effects of initial pairings. Duration between word presentations varied (100ms, 400ms, 700ms) in accordance with the original IAT design (Greenwald, McGhee, & Schwartz, 1998). Difference scores were automatically calculated for each participant where positive numbers indicated a preference for Latino/pleasant pairings and negative numbers indicated a preference for White/unpleasant pairings.

The dot-probe is a computer task that begins by having participants look at a fixation cross in the middle of the screen for approximately 2,000 ms. Then two pictures are simultaneously presented (one White face and one Latino face) for 100 ms, one on the left and one on the right of where the fixation cross appeared. Next a gray dot appeared where one of the faces (either the left or the right) had been. Participants were instructed to indicate on which side the dot appeared using predetermined keys on a standard keyboard as quickly as they can. The dot-probe task indicates whether initial attention is focused on a White face versus a Latino face. The White/Latino face images used for the dot probe task are identical to those used in the AMP task with four Latino male, four Latino female, four White male, and four White female. When the two simultaneously presented pictures are removed from the screen and a single dot replaces one of the images, reaction time to indicate which side of the screen the dot is on will be quicker for participants who were already looking at that side due to the image that was present (Dickter, Gagnon, Gyurovski, & Brewington, 2014). Therefore smaller reaction times will indicate attention allocation.

Procedure

Participants came into the laboratory to complete the experiment. Each session involved completing the three implicit tasks followed by the questionnaires last. To avoid potential ordering effects with the implicit tasks, they were counterbalanced by session, totaling six sessions. Participants received course credit as compensation for their participation.

Study 2 Results

Certain participants were removed from analyses due to not completing all implicit tasks (n = 43) or ID confusion (n = 2)[1]. The final sample size was 113 undergraduates (M_{age} = 19.69, SD = .96) with 56.2% self-reporting their race as White (11.2% Black/African American, 18% Asian/Asian American, 11.5% Other), and 54% being female. Composite variables were created for the explicit measures and contact measures as in Study 1 (see Table 3 for means and standard deviations). Correlations were conducted between the contact measures, implicit measures, and explicit measures (see Table 4).

Implicit Measures

The AMP variable involved creating a difference score by subtracting the pleasant ratings of ideographs following a Latino face from the pleasant ratings of ideographs following a White face. Positive difference scores indicated a higher proportion of pleasant ratings following White faces, negative difference scores indicated a higher proportion of pleasant ratings following Latino faces (M = 3.02, SD = 12.90). Two paired-samples t-tests were conducted to examine the potential effect of gender for Latino faces, $t(67)$=-1.01, p = 0.31, and White faces $t(67)$=-1.08, p = 0.28. As there were no significant differences for the proportion

of pleasant ratings following males versus females for either race, pleasant ratings were collapsed across genders. A one-sample t-test was conducted to determine if the difference scores were statistically different from 0, and the result was marginally significant (see Table 3), $t(67)= 1.93$, $p = 0.06$.

The IAT was composited by creating a d-score in accordance with the original IAT publication (Greenwald, McGhee, & Schwartz, 1998). This process involves five steps: first exclude the first two trials in the experimental blocks, second recode response latencies above 3,000 ms (as 3,000 ms) and below 300 ms (as 300 ms), third log-transform latencies before averaging data, fourth allow the analyzed data to include error-trial latencies, and finally exclude data identified as outliers (unusually high/low latencies or individuals with frequent error rates). For this study, IAT d-scores that were positive numbers indicated a stronger association between Latinos and words from the "good" category, and scores that were negative numbers indicated a stronger association between Whites and words from the "good" category. A one-sample t-test was conducted to determine if the difference scores were statistically significantly different from 0, $t(101)=-9.77$, $p < 0.01$. These results demonstrated that there is a significant difference between the associations of Latinos with good words and Whites with good words.

The dot-probe difference score variable was composited by subtracting the reaction times from when the dot was behind the White face (with the other face a Latino face) from when the dot was behind the Latino face (with the other face a White face). Only correct trials were included in the dot-probe difference

scores (*M* = -0.24, *SD* = 67.34). Positive difference scores indicate more attention allocation to White faces while negative difference scores indicate more attention allocation to Latino faces. A one-sample t-test was conducted to determine if the difference scores (see Table 3) were statistically significant from 0, $t(111)=-0.04$, $p > 0.05$. In this case the differences was not significantly different from 0 indicating no evidence of attention allocation to either race. A paired-samples t-test was conducted to test if reaction times were statistically different when a dot was behind a White face and the other face was White from when a dot was behind a White face and the other face was Latino, $t(111)=1.35$, $p = 0.18$. Another paired-samples t-test was conducted to test if reaction times were statistically significant when a dot was behind a Latino face and the other face was Latino from when a dot was behind a Latino face and the other face was White, $t(111)=0.88$, $p = 0.38$. In both cases, there were no significant differences between presentations of faces of the same race or presentations of two different races.

Correlations

   Contact and Implicit Measures. As depicted in Table 4, the FWO Agree subscale was not significantly related to any of the three implicit measures' difference scores. The FWO Frequency subscale was significantly negatively related to the dot-probe difference score indicating more frequent contact with Latinos was predictive of more attentional allocation to Latino faces. The list of friends variable was also not significantly related to any of the implicit measures'

difference scores. These results suggest that close contact is not a consistent predictor of implicit bias for this sample.

Contact and Explicit Measures. The FWO Agree subscale was not significantly related to MEB, but was significantly positively related to the Hispanics/Latinos Feeling Thermometer rating indicating more contact was predictive of higher ratings for this social group. The FWO Frequency subscale was also not significantly related to MEB, but was significantly positively related to the Hispanics/Latinos Feeling Thermometer rating. In other words, more frequent contact was predictive of higher ratings for this social group. The list of friends variable was not significantly related to MEB. The list of friends variable was however significantly positively related to the Hispanics/Latinos Feeling Thermometer rating indicating more proportions of Latinos in participants' friends groups was predictive of higher ratings for this social group. Therefore, close contact was a significant predictor for direct higher ratings of this group although not a reliable predictor for overall bias towards this group.

The FWO Agree subscale was not significantly related to SDO or the Restraint MCPR subscale. The FWO Agree subscale was significantly positively related to the Concern MCPR subscale indicating more contact was predictive of an individual being concerned of appearing prejudiced. The FWO Frequency was also not significantly related to SDO or the Restraint MCPR subscale, but was significantly positively related to the Concern MCPR subscale indicating more frequent contact was predictive of an individual being concerned with appearing prejudiced. The list of friends variable was not significantly related to SDO or

either subscale of MCPR. These results suggest that close contact can be predictive of a concern to not appear prejudiced.

Implicit Measures and Explicit Measures. The AMP difference scores were significantly negatively related with MEB. In other words, a higher proportion of pleasant ratings following White faces was predictive of more bias towards Latinos. The AMP difference scores were not significantly related to the Hispanics/Latinos Feeling Thermometer ratings, SDO, or either MCPR subscale. These findings support the hypothesized predictive relationship between implicit affect and explicit bias towards Hispanics/Latinos.

The IAT difference scores were not significantly related to MEB, Hispanics/Latinos Feeling Thermometer ratings, SDO, or the Concern MCPR subscale. The IAT difference scores were significantly negatively related to the Restraint MCPR subscale indicating the higher associations of Latinos with good words, the more an individual attempts to restrain, or control, their prejudice. This suggests that attempts to restrain prejudice can be predictive of more implicit positive associations.

The dot-probe difference scores were not significantly related to MEB, Hispanics/Latinos Feeling Thermometer ratings, SDO, or either MCPR subscale.

Study 2 Discussion

In this study, reported contact with Latinos was not a sufficient predictor of current attitudes (either self-reported or automatic) towards this ethnic group. It is possible that these combined findings were inconsistent with Study 1 due to the extremely low reports of close contact with these outgroup members in Study 2.

Although William and Mary is becoming an increasingly diverse campus every year (currently reporting 32% students of color), the racial composition of the campus is still very much majority members. Therefore undergraduate students have a low possibility of interacting with Hispanics/Latinos and potentially could not have had opportunities for sufficient close contact that would allow for the benefit of predicting lower prejudice.

However, there were a few noteworthy findings. First, contact was related to the free ratings of the Hispanic/Latinos social groups indicating that individuals with more close contact, more frequent contact, and those with more current contact with Hispanics/Latinos, view this social group more positively. This finding is consistent with Study 1 and supportive of the contact hypothesis (Allport, 1954; Amir, 1976; Pettigrew, 1997; Williams, 1947). However, frequency of contact was related to the attempt to restrain or to control prejudiced behavior. This relationship between contact with outgroup members and attempting to restrain or control prejudiced behavior is consistent with previous research finding that a desire to avoid dispute stems from a lack of experience with the outgroup (Towles-Schwen & Fazio, 2003). This lack of contact with Latinos is evident in the low reports of frequency of contact in this sample. Therefore, it is possible that with a sample having more contact experience, the relationship between contact and restraining prejudiced behaviors would no longer occur.

There was little evidence of a relationship between current, close contact and the implicit bias measures. One finding indicated that more frequent contact with Latinos was related to more attentional allocation to Latino faces. This could

be because the contact experiences may not have been positive (or met the guidelines for the contact hypothesis), therefore images of the outgroup faces could have resulted in a fear response of attributing more attention to the outgroup member's images (Donders, Correll, & Wittenbrink, 2008; Koster, Crombez, Verscheuere, & DeHouwer, 2004). A further analysis of the relationship between attention allocation concerning Latino faces should be examined. Additionally, there was a significant relationship between implicit associations and a motivation to restrain prejudiced behavior. Specifically, those with a higher association of White with good reported more motivation to restrain prejudiced behavior. Although previous research has noted that restraint and automatically activated racial attitudes are not correlated (Fazio & Hilden, 2001; Towles-Schwen & Fazio, 2001), these studies did not use a measure of implicit associations. Therefore future research should more closely examine why this relationship uniquely occurred.

Interestingly, the self-reported attitudes towards Latinos were all correlated amongst each other as well as with the concern to not appear prejudiced. This may be evidence of social desirability in that participants could be attempting to inflate their responses in such a way that they do not appear prejudiced to alleviate their concern (e.g., Plant & Devine, 1998). Indeed, past research has identified that when individuals have adequate time to consider their responses, such is the case with self-reported attitudes, concern to not appear prejudiced has influenced responses (e.g., Dovidio, Kawakami, & Gaertner, 2002; Wilson, Lindsey, & Schooler, 2000).

This relationship also implies a consistency across various measures in the self-reported attitudes. Past research has also noted a significant relationship between explicit measures in that higher explicit racial bias on one measure is predictive of similar explicit racial bias on another measure (McConnell & Leibold, 2001). A similar relationship amongst the implicit bias measures was not found. One potential explanation could be that each implicit measure is uniquely related to prejudicial attitudes (i.e., affect, associations, attention allocation) and these aspects do not necessarily predict one another, but rather assess different constructs (e.g., Kuppens & Spears, 2014). This finding reiterates the importance of including multiple implicit measures for a more thorough understanding of the relationship to these constructs.

Study 3

Study 3 sought to investigate if imagined contact with Latinos is sufficient to reduce implicit and explicit bias, and if this process is mediated by threat alleviation. Given the expanding presence of this racial/ethnic group in the US, this would be an ideal group to expand on previous literature by examining all four classifications of integrated threat theory (realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes) in relation to biases simultaneously, an endeavor that has not previously been assessed. By including each aspect of ITT, there is also opportunity to determine if threat alleviation functions as a mediator for imagined contact's effect on biases. Self-report measures were included to measure differences in explicit bias towards Latinos/Hispanics and the four ITT threat categories determining if imagining

contact with a Latino stranger versus imagining contact with a stranger of unspecified race/ethnicity affected explicit biases. Two implicit measures were included to compare how imagined contact affected differential attention and implicit associations. It has been posited that due to cognitive functioning related to threat, initial automatic attention is directed to novel, potentially harmful, stimuli (Öhman, Flykt, & Esteves, 2001). Therefore, it is expected that participants who are imagining a positive conversation with a stranger will have more initial attention allocated to Latino faces compared to individuals imagining a positive conversation with a Latino stranger (Donders, Correll, & Wittenbrink, 2008; Koster, Crombez, Verscheuere, & DeHouwer, 2004). Previous research has examined imagined contact and implicit associations. Specifically, Turner and Crisp (2010) found that imagining contact with a Muslim stranger was sufficient to reduce implicit bias towards this group compared to those who did not imagine contact with a Muslim stranger. As a result, it is hypothesized that those imagining contact with a Latino stranger will have less of a bias for the White/pleasant association than those in the control condition. For intergroup contact and threat, there is evidence that the relationship between quantity of contact with minorities and biases towards minorities is mediated by realistic and symbolic threat (e.g., Stephan et al., 2002; Tausch et al., 2007; Velasco González, Verkuyten, Weesie, Poppe, 2008); When considering quality of contact, evidence suggests intergroup anxiety as the mediator between contact and biases (e.g., Islam & Hewstone, 1993; Stephan et al., 2000; Velasco González, Verkuyten, Weesie, Poppe, 2008; Voci & Hewstone, 2003). Given this

research, it is expected that those imagining contact with a Latino stranger will have lower perceptions of threat in all four ITT threat classifications than those imagining contact with a stranger of unspecified race/ethnicity and that each threat classification will mediate the effect of contact on bias reduction.

Study 3 Method

Participants

William and Mary undergraduates (n = 192) who did not identify as Hispanic/Latino came into the lab to complete the imagery task, two implicit computer tasks, and several questionnaires. Participants received partial credit in psychology courses for participation. The majority of the participants self-identified their ethnicity as White (60.7%) and participants were predominantly female (71.4%). Anyone who indicated they were under 18 years of age were not permitted to participate. Before the beginning of the experiment participants were randomly assigned to either the control condition (n = 94) or the experimental condition (n = 98).

Measures

Imagined Contact. In accordance with previous imagined contact literature (e.g., Crisp, Stahi, Turner, & Husnu, 2008; West & Bruckmüller, 2013), participants in the control condition were given the following instructions: *"We will now begin the imagery task. You are going to imagine meeting a stranger for the first time. Imagine an interaction that is positive, relaxed, and comfortable. Please spend the two minutes imagining the conversation. I will notify you when the two minutes are up. Please begin now."* Participants in the experimental condition

received identical instructions with the added ethnic specification of the stranger (e.g., Latino stranger). An experimenter timed the two minutes and immediately proceeded to the first computer task.

Implicit Measures. Two implicit measures from Study 2 were included in Study 3: the IAT and the dot-probe task. These two tasks were identical to the tasks in Study 2.

Explicit Measures. Study 3 included three measures of explicit attitudes all present in Study 2: Feeling Thermometer (Converse & Presser, 1986), Modern Ethnicity Bias Scale (Segrest Purkiss, Perrewé, Gillespie, Mayes, & Ferris, 2006), and the Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth, & Malle, 1994).

Threat Measures. Measures were included to determine threat alleviation in the four classifications of integrated threat theory: realistic threats (Maddux, Galinsky, Cuddy, & Polifroni, 2008; Stephan et al., 2002), symbolic threats (Duckitt, 2006), intergroup anxiety (Stephan et al., 2002), and negative stereotypes (Curseu, Stoop, & Schalk, 2007).

The Realistic Threat Scale (α = 0.96; Maddux et al., 2008) is a 12-item questionnaire for which participants select their agreement on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree) with each statement. Responses indicate how threatening they view Hispanics/Latinos in terms of resources (e.g., "Education benefits Latinos/Hispanics over non-Latinos/Hispanics more than it should"), economic wellbeing (e.g., "Latinos/Hispanics have more economic power than they deserve in this country."), or competition (e.g.,

"Latinos/Hispanics make it harder for non-Latinos/Hispanics to get into good schools"). Item responses are averaged together with higher averages indicating more realistic threat.

Participants completed the Perceived Social Threat scale (α = 0.76; Duckitt, 2006) to determine how social threatening they view Hispanics/Latinos. This measures is 8 items with participants rating from 1 (Strongly Disagree) to 10 (Strongly Agree) how much they agree with various statements with non-threatening framed statements (e.g., "Latinos/Hispanics strengthen values, norms, and traditions that are important to people in America.") or threatening framed statements (e.g., "Latinos/Hispanics seem to reject moral values that are important to America."). Non-threatening framed statements are reverse coded and then all items are averaged together with higher numbers indicating more perceived social threat.

Intergroup anxiety was measured with the Intergroup Anxiety Scale – Modified (α = 0.94; Stephan et al., 2002), a 12-item questionnaire where individuals select from 1 (Not at All) to 10 (Extremely) how they feel during an interaction with a member of the Latino/Hispanic ethnic group. Adjectives provided are either unpleasant (e.g., "Worried") or pleasant (e.g., "Trusting"). Pleasant adjective responses are reverse coded. Then, all items are averaged together with higher numbers indicating more intergroup anxiety.

To measure negative stereotypes, participants completed the Negative Stereotypes questionnaire (α = 0.84; Curseu, Stoop, & Schalk, 2007). This is a 12-item measure in which individuals indicate the percentage of

Latinos/Hispanics they think posses the listed traits in 10% increments. The items present both negative traits (e.g., "Undisciplined") and positive traits (e.g., "Hard-working). Positive trait scorings are reverse coded and items are averaged to indicate the overall rating of negative stereotypes with higher numbers indicating more negatively applied stereotypes.

Procedure

Participants came into the laboratory in a group of at maximum 4 people. Participants were randomly assigned to either the experimental condition (imagining contact with a Latino stranger) or the control condition (imagining contact with a stranger) prior to the start of the study. Participants were given two minutes (timed by the experimenter) to imagine a contact scenario involving a conversation that is positive, relaxed and comfortable (West & Bruckmüller, 2013; West, Holmes, and Hewstone, 2011). Following the two minutes, participants in both conditions completed the dependent measures on provided computers. Finally, participants completed the questionnaires. No additional materials were required for Study 3 that were not included in Study 2.

Study 3 Results

Two participants were identified as outliers on multiple measures for being 2 or more standard deviations from the mean on four or more measures. The final sample size was 190 undergraduates (M_{age} = 19.34, SD = 1.18) with 60.8% self-reporting their race as White (12.2% Black/African American, 18% Asian/Asian American, 9% Other), and 71.6% being female. Participants were randomly assigned to either the control condition (n = 93) or the experimental

condition (*n* = 97). Composite variables were created for the explicit measures as in Study 1 and Study 2 and for implicit measures as in Study 2 (see Table 5 for means and standard deviations split by condition). Correlations were conducted between all the Study 3 measures (see Table 6).

Implicit Measures

The dot-probe difference score variable was composited identically to Study 2 where positive difference scores indicate more attention allocation to White faces while negative difference scores indicate more attention allocation to Latino faces. Only correct trials were included in the dot-probe difference scores (*M* = 3.88, *SD* = 12.46). A one-way ANOVA was conducted to determine differences between the control condition and the experimental condition yielding a non-significant result, $F(1, 159) = 2.54$, *p* = .11. Therefore, there were no significant differences in attention allocation to either race between the group that imagined contact with a Latino stranger (experimental, *M* = 2.28, *SD* = 11.31) and the group that imagined contact with a stranger of unidentified race/ethnicity (control, *M* = 5.40, *SD* = 13.35). A mixed-model ANOVA was conducted, in which condition was the between-subjects variable and stimulus race pairing was the with-in subjects variable, to determine if reaction times were statistically different when a dot was behind a White face and the other face was White from when a dot was behind a White face and the other face was Latino. There was not a significant main effect of condition or an interaction (*F*s < 1). However, there was a significant difference in attention allocation between presentations of both White faces with presentations of one White and one Latino face (p < .001).

Another mixed-model ANOVA was conducted, in which condition was the between-subjects variable and stimulus race pairing was the with-in subjects variable, to test if reaction times were statistically significant when a dot was behind a Latino face and the other face was Latino from when a dot was behind a Latino face and the other face was White. There were no significant main effects or interactions (Fs < 1).

For Study 3, IAT d-scores were calculated identically to Study 2 in that positive numbers indicated a stronger association between Latinos and words from the "good" category, and negative numbers indicated a stronger association between Whites and words from the "good" category (M = -.12, SD = 0.37). A one-sample t-test determined there was a significant difference when comparing the difference score to 0, t(161)= -4.40, p < .001, demonstrating a difference between the associations of Latinos with good words and Whites with good words. A one-way ANOVA was conducted to determine differences between the control condition and the experimental condition yielding a non-significant result, F(1, 183) = 0.20, p = .65. Therefore, there were no significant differences in associating Latinos with good words or Whites with good words between the group that imagined contact with a Latino stranger (experimental, M = -0.14, SD = 0.41) and the group that imagined contact with a stranger of unidentified race/ethnicity (control, M = -0.11, SD = 0.34).

Explicit Measures

Explicit Bias. One-way ANOVAs were conducted for each explicit bias measure and each threat measure to determine if there were significant

differences between the group that imagined contact with a Latino stranger and the group that imagined contact with a stranger of unidentified race/ethnicity. For the free ratings of the Hispanic/Latino group using the feeling thermometer, there was not a significant difference, $F(1, 188) = 0.02$, $p = 0.88$, between the experimental condition ($M = 72.31$, $SD = 19.08$) and the control condition ($M = 71.91$, $SD = 17.59$). When comparing the experimental ($M = 2.45$, $SD = 1.0$) and the control condition ($M = 2.48$, $SD = 0.89$) to examine differences in in MEB scores, there was also a non-significant result, $F(1, 188) = 0.06$, $p = 0.81$. An additional one-way ANOVA was conducted to compare the experimental condition ($M = 1.98$, $SD = 0.91$) and the control condition ($M = 1.99$, $SD = 0.79$) in SDO scores, $F(1, 188) = 0.00$, $p = 0.99$, yielding a non-significant result. Therefore, imagining contact with a Latino stranger did not influence overall explicit bias when compared to imagining contact with a stranger.

Threat Measures. Four threat measures were included to examine each aspect of Integrated Threat Theory: realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes. To determine if imagining contact with a Latino stranger influenced different resulting scores than imagining contact with a stranger, four one-way ANOVAs were conducted on each ITT aspect separately. A one-way ANOVA was used to compare the experimental condition ($M = 2.42$, $SD = 1.32$) and the control condition ($M = 2.43$, $SD = 1.26$) in realistic threat scores, $F(1, 188) = 0.01$, $p = 0.94$. Symbolic threat scores, $F(1, 187) = 0.25$, $p = 0.62$, were also examined between the experimental condition ($M = 2.37$, $SD = 1.04$) and the control condition ($M = 2.30$, $SD = 1.02$). Intergroup anxiety scores

for the experimental condition (M = 2.69, SD = 1.46) and the control condition (M = 2.97, SD = 1.36) were compared, $F(1, 188)$ = 1.81, p = 0.18, and were found to be not significantly different. Finally, negative stereotypes were compared, $F(1, 188)$ = 0.01, p = 0.95, to examine differences between the experimental condition (M = 25.48, SD = 12.05) and the control condition (M = 25.60, SD = 11.84). For all four aspects of integrated threat theory there were no significant differences between the group that imagined contact with a Latino stranger and those who imagined contact with a stranger of an unidentified race/ethnicity.

Correlations

Given that there were no significant differences between the imagined contact with a Latino (experimental) and imagined contact with a stranger of unidentified race/ethnicity (control) in neither implicit measure, nor the remaining explicit bias and threat measures, the between-subjects conditions were grouped together for correlations.

Implicit Bias and Threat. As demonstrated in Table 6 the IAT d-score was significantly negatively related to both realistic threat and symbolic threat indicating that stronger associations between White with words from the "good" category were predictive of higher reportings of Latinos/Hispanics being a realistic and symbolic threat. IAT scores were significantly negatively related to intergroup anxiety as well, demonstrating that those with a stronger association between White with "good" words reported more intergroup anxiety when interacting with Latinos/Hispanics. There was a significant negative relationship between IAT scores and negative stereotypes. In other words, a stronger

association between White with "good" words accompanied more attributions of negative stereotypes to Latinos/Hispanics.

The dot-probe difference scores were not statistically significantly related to any of the four integrated threat theory aspects.

Explicit Bias and Threat. Modern ethnicity bias was strongly positively related to both realistic threat and symbolic threat. In other words those who reported more bias to Latinos/Hispanics, reported Latinos/Hispanics to be more threatening both realistically and symbolically. There was a significant positive relationship between MEB and intergroup anxiety in that those with higher bias towards Latinos/Hispanics also had higher reports of intergroup anxiety. A significant positive relationship between MEB and negative stereotypes was observed, meaning individuals reporting more bias towards Latinos/Hispanics attributed more negative stereotypes towards Latinos/Hispanics.

Feeling thermometer scores were significantly negatively related to both realistic and symbolic threat, in that those with higher ratings for the Latino/Hispanic group exhibited less realistic threat and less symbolic threat. A negative relationship between feeling thermometer scores and intergroup anxiety indicated that those who rated Latinos/Hispanics higher reported less intergroup anxiety. Additionally, there was a significant negative relationship between free ratings for this ethnic group and negative stereotypes. This indicated that those who gave higher ratings also attributed less negative stereotypes to Latinos/Hispanics.

For social dominance orientation, there were significant positive relationships with realistic threat and symbolic threat indicating a general higher preference for inequality in society was predictive of viewing Latinos/Hispanics as more realistically and symbolically threatening. There was a significant positive relationship between SDO and intergroup anxiety, in that a preference for inequality accompanied a higher reporting of intergroup anxiety. SDO was also significantly positively related to negative stereotypes. Specifically, those with a higher preference for inequality also attributed more negative stereotypes to Latinos/Hispanics.

In this study, there was a consistent relationship across explicit bias measures and each aspect of the intergroup threat theory. These results show that those with more bias towards Latinos/Hispanics view the group as more realistically threatening, more socially threatening, exhibit more intergroup anxiety, and attribute more negative stereotypes to Latinos/Hispanics.

Implicit and Explicit Bias. There was a significant negative relationship between IAT d-scores and MEB, indicating that those with a stronger association with White and words from the "good" category reported more bias towards Latinos/Hispanics. IAT d-scores were also significantly positively related to free ratings for the Latino/Hispanics social group. Specifically, those with a stronger association of Latinos with words from the "good" category reported higher ratings of this social group. There was an observed significant negative relationship between IAT d-scores and SDO. In other words, those with a stronger association of White and words from the "good" category also indicated

more preference for a hierarchical society, or inequality within society. Within this study there was a consistent relationship that those with higher implicit association bias also reported more explicit bias on self-report measures. However, this was not the case with dot-probe difference scores as there were no significant relationships between implicit attention allocation and any of the explicit bias measures. Additionally, as with Study 2 there was not a significant relationship between IAT d-scores and dot-probe differences scores indicating they are measuring different constructs.

Amongst the explicit bias measures there were several significant relationships. MEB scores were significantly negatively related to free ratings for the Latino/Hispanic social group and significantly positively related to SDO. This indicates that less bias towards Latinos/Hispanics was related to higher evaluations for this social group as well as more preference for equality within society. In addition, free ratings for Latino/Hispanic social group was significantly negatively related to SDO meaning those with higher evaluations for this social group indicated more preference for equality within society.

Mediation Analyses

It has been posited to undergo four steps when testing for mediation (Baron & Kenny, 1986; James & Brett, 1984; Judd & Kenny, 1981). The first step includes demonstrating that the causal variable is correlated with the outcome. The second step should demonstrate the causal variable is correlated with the mediator. The third step is to show that the mediator affects the outcome variable. The fourth step is to establish that the mediator mediates the casual-

outcome relationship either completely or partially. In the case of Study 3, the causal variable would be a dichotomous condition variable (control = 0; experimental = 1), the mediator variables would be the threat measures (realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes), and the dependent variables would be the bias measures (IAT d-scores, dot-probe difference scores, MEB, feeling thermometer ratings, and SDO).

Step one yielded no significant relationships between condition and any bias measure. Step two also yielded no significant relationships between condition and any threat measure. The success of these two steps is crucial to determining either complete or partial mediation; as a result, it was determined that there was not enough evidence to continue with conducting meditational analyses.

Study 3 Discussion

The manipulation of imagined contact with a Latino stranger did not influence biases against Latinos when compared to imagining contact with a stranger of unidentified race/ethnicity. It is possible that extending the imagery task to five minutes (Turner, Crisp, & Lambert, 2007; West, Holmes, & Hewstone, 2011) or including a positive vignette to read about a member belonging to the outgroup prior to the imagery task (e.g., Stathi & Crisp, 2008; Turner & Crisp, 2010) could function to replicate previous findings of imagined contact and bias reduction. Although past research demonstrated a reduction in biases towards outgroup members with the two-minute imagined contact task (e.g., Crisp, Stahi, Turner, & Husnu, 2008), they additionally indicated that more crucial than timing

is the framing of the imagery task as a "positive" occurrence. As this research

was clear to instruct participants to imagine a positive interaction, it is possible

that the two-minute imagery task timing could not be generalizable with biases

towards Hispanics/Latinos. Therefore, future should include a more extensive

imagery task as has been done in the past when imagined contact manipulation

did not produce the desired reduction in biases (e.g., West, Holmes, &

Hewstone, 2011). With the effect present of imagined contact on bias reduction,

further analyses could be conducted to identify or exclude threat alleviation as a

potential mediator.

As predicted, there were several observed relationships between all four

classifications of ITT and bias measures. Realistic threat towards the outgroup

was predictive of an automatic association of White with positive words. In other

words, the more an individual viewed Hispanics/Latinos as being a threat to their

resources (e.g., economic, educational; Riek, Mania, & Gaertner, 2006), the

more they also favored a White-good pairing. Additionally, more realistic threat

was related to more general bias towards this outgroup and a preference for

social hierarchy. However, there was not an observed relationship for attention

allocation and realistic threat. Overall, the findings in this study between realistic

threat and biases towards an outgroup replicate previous findings (e.g., Stephan

et al., 2002).

Symbolic threat, which is more akin to threats towards cultural norms and

practices (Riek, Mania, & Gaertner, 2006), was also related to a stronger White-

good association. Symbolic threat was also predictive of general bias towards

Latinos/Hispanics as well as a preference for social hierarchy. The relationship of a threat to cultural norms/practices being related to bias towards the outgroup replicates previous research (e.g., Stephan et al., 2002). This research has expanded previous findings to include biases towards Latinos.

Intergroup anxiety is related to feelings of unease during actual or potential interactions with outgroup members (Stephan & Stephan, 1985); as a result, individuals may avoid contact with, or dislike, outgroup members (Stephan, Diaz-Loving, & Duran, 2000). It has been posited that intergroup anxiety is a predictor of outgroup bias (Ho & Jackson, 2001; Islam & Hewstone, 1993; Voci & Hewstone, 2003), but also that those higher in intergroup anxiety are higher in biases towards the outgroup as well (Hassan, 1978). This study functioned to replicate previous findings as more intergroup anxiety was related to White-good automatic associations, higher general bias towards Hispanics/Latinos, and a preference for social hierarchy.

Within Study 3, there were associations of negative stereotypes with biases towards Hispanics/Latinos. Specifically those who attributed more negative stereotypes to the outgroup also reported more general bias towards this group and a preference for social hierarchy. There was also the finding that the attribution of more negative stereotypes was related to a stronger White-good association. Numerous studies have found a link between negative stereotypes and biases (e.g., Esses et al., 1993; Stephan, Diaz-Loving, & Duran, 2000).

Additionally, as with the previous two studies, there was a demonstrated relationship between the explicit bias measures that did not occur with the two

implicit measures (attention allocation and associations). Again, this consistency in explicit bias reports has been observed in previous literature (McConnell & Leibold, 2001). The lack of relationship between the implicit measures provides additional support that they are measuring different constructs (e.g., Kuppens & Spears, 2014). Implicit associations were related to each explicit bias and threat measure while implicit attention allocation was not related to any variable. This is further evidence for the inclusion of multiple implicit measures assessing different constructs because it is observable how each construct is independently related to biases.

Future intergroup contact research would benefit from focusing on the reduction of biases towards the Latino/Hispanic group, potentially examining other possible mechanisms by which this effect is accomplished. Although this study could not provide support for threat alleviation as a mediator for the effect on imagined contact on biases, future work should reexamine this potential occurrence examining either a more extensive imagined contact task or incorporating direct contact experiences.

General Discussion

The primary goal of this research was to examine the relationship between various types of contact with Latinos and implicit and explicit bias towards Latinos. This work used multiple validated contact measures, explicit measures, and implicit measures assessing affect, associations and attention allocation. Three studies were conducted to examine the relationships between contact and biases using undergraduate students enrolled in psychology courses. The first

study indicated that more contact was predictive of less explicit bias overall, with closer more frequent contact being the strongest predictor of general explicit bias. Additionally, current contact was a reliable predictor of explicit bias, but past contact was not. Study 2 sought to re-examine current close contact's predictability of explicit bias towards Latinos, but also to expand to examine implicit bias towards Latinos using multiple constructs related to prejudice (associations, attention allocation, and affect). Results indicated that more current, close contact with Latinos was neither a reliable predictor of explicit bias, nor implicit bias, towards this ethnic group. Study 3 manipulated an imagined contact scenario to test the effect on implicit bias (attention allocation and associations), explicit bias, and measures of threat as well as attempted to demonstrate threat alleviation as a mediator for the imagined contact effect on biases. However, the manipulation failed to influence lower biases in a group that imagined contact with a Latino stranger compared to a group that imagined a stranger of unidentified race/ethnicity. Findings did indicate that implicit associations and explicit biases towards Latinos/Hispanics are strongly related to feelings of threat towards the outgroup.

Previous work has assessed a reframing of the contact hypothesis focusing on casual contact versus institutionally supported contact (e.g., Dixon, Durrheim, & Tredoux, 2005). Research has done so by investigating social network growths (e.g., Levin et al., 2003) or friendships (e.g., Jackman and Crane, 1986). These findings have indicated that those with more outgroup friends exhibit less intergroup anxiety and lower ingroup bias (Levin et al., 2003),

as well as less explicit bias (Jackman and Crane, 1986). Therefore, it was hypothesized that those with more interactions with outgroup members (i.e., Latinos) would exhibit less explicit bias towards this group in the first study. Findings supported this hypothesis and functioned to expand the contact hypothesis literature (see Pettigrew & Tropp, 2006, for a review) to examine a group pairing less focused on in prior research: non-Latino and Latino interactions. Findings also replicated support that closer contact is a stronger predictor of explicit bias (e.g., Jackman and Crane, 1986).

It has been posited that social desirability may influence responses on self-reported measures examining sensitive topics (Holmes, 2009). Given that this research includes examining a sensitive topic (racial/ethnic biases), implicit measures were included to assess automatic affect responses, associations of ingroups/outgroups with good/bad words, and attention allocation to ingroup/outgroup faces. Previous work has examined these different constructs in relation to biases towards outgroup members, specifically associations of outgroups with bad/negative words (Aberson, Shoemaker, Tomolillo, 2004), attention to outgroup members over ingroup members (Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997), and more positive affect towards ingroup members over outgroup members (Payne, Cheng, Govorun, & Stewart, 2005). Overall, this research has supported that contact with outgroup members has been related to lower biases against the outgroup. As a result of the previous work, it was hypothesized that close contact with Latinos would function as a predictor for implicit biases for each implicit construct uniquely. Specifically, it

was hypothesized that more contact with Latinos would predict less attention allocation to outgroup faces, less of a White-good association pairing, and less of a positive affect attribution towards ingroup members. However, this study does not support contact with Latinos as a sufficient predictor of implicit bias for any of the three constructs. It is possible that the lack of significant relationships is a result of the extremely low contact reports. Even though Study 2 did not support previous findings between contact and implicit biases, the findings observed included relationships among the explicit measures (indicating a consistency in self-reported bias responses).

These two studies taken together moderately support previous research addressing the impacting role close contact can play in predicting explicit biases. As the majority of research has emphasized examining White-Black relations (Levin et al., 2003; Shook & Fazio, 2008; Van Laar et al., 2005), this research broadens the contact hypothesis literature to inclusively examine biases towards Latinos. Additionally, this research implemented multiple implicit measures to assess various constructs each uniquely related to bias, a practice not commonly observed in previous contact hypothesis research. As prior research has examined each construct in relation to biases (attention allocation, Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997; associations, Aberson, Shoemaker, Tomolillo, 2004; affect, Payne, Cheng, Govorun, & Stewart, 2005) separately, examining all three constructs together allowed for a closer examination of the unique relationship between implicit biases and contact. What was determined is there is not a relationship of contact and automatic biases in

regards to affect, attention allocation, or associations. Without further research, this study would lead to the assumption that contact does not predict implicit biases which contradicts previous research findings for affect, attention allocation (e.g., Dickter, Gagnon, Gyurovski, & Brewington, 2014), and associations (e.g., Aberson, Shoemaker, Tomolillo, 2004). Additionally, the stimuli used in the implicit measures could explain the lack of relationships between contact and implicit biases as well. Specifically, for the attention allocation and affect measures, the same face images were used in both tasks (including eight images/group). It is possible the stimuli used was not sufficient to activate automatic processes associated with this group, as the Latino/Hispanic group is very diverse in terms of physical appearances (e.g., Gonzales-Backen & Umaña-Taylor, 2011; Sullivan, 2000). However, the automatic association task used the most frequent surnames for each racial group based on the U.S. Census, indicating these should be the most recognizable (and most commonly observed) surnames, which should have been sufficient to activate automatic processes. The inconsistency of findings with previous research demonstrates a need for further investigation to determine why the contact reported was not able to provide a replicated relationship with implicit biases in this study. In other words, further work should determine if contact is not a feasible predictor of implicit affect, associations, or attention allocation towards this group, or if contact is a significant predictor, but only for those with more contact experiences than this sample reported. Additionally further work should incorporate different stimuli to pinpoint which aspect (contact or stimuli) was the cause for a lack of significant

relationships between contact and implicit biases in this study. While there was

not substantial evidence of close contact's predictability of implicit bias, the lack

of relationships between the three implicit measures support previous work

arguing they are indeed measuring different constructs (e.g., Kuppens & Spears,

2014).

The first two studies focused on measuring previous and current contact

experiences as a predictor of biases towards the Latino/Hispanic outgroup. A

drawback of this method was the extremely low reports of contact experiences

from the participants in both studies, which may have contributed to non-

significant findings that contradicted previous literature. To combat this

occurrence of low reports of intergroup contact in the past, research has posited

that imagining a contact scenario with outgroup members can function to reduce

biases towards that outgroup similarly to actual intergroup contact experiences

(Turner, Crisp, & Lambert, 2007). Indeed, previous work has identified imagined

contact scenarios to decrease biases in several social scenarios (e.g., Crisp,

Stathi, Turner, & Husnu, 2008; West & Bruckmüller, 2013). Integrated threat

theory (ITT; Stephan & Stephan, 1996, 2000) has examined four classifications

(i.e., realistic threat, symbolic threat, intergroup anxiety and negative

stereotypes) to uniquely predict biases towards outgroup members; additionally,

the classifications are mediating the effect of contact on explicit bias (e.g., Islam

& Hewstone, 1993; Stephan et al., 2000; Stephan et al., 2002; Tausch et al.,

2007; Velasco González, Verkuyten, Weesie, Poppe, 2008; Voci & Hewstone,

2003). As a result of these findings, all four ITT classifications were included to

be examined as potential mediators for imagined contact's effect on implicit associations, implicit attention allocation, and explicit biases towards Hispanics/Latinos. It was hypothesized that imagining contact with a Latino stranger would cause less implicit associations between White-good word pairings (Turner & Crisp, 2010), less automatic attention allocation to Latino vs. White faces (Donders, Correll, & Wittenbrink, 2008; Koster, Crombez, Verscheuere, & DeHouwer, 2004), less general self-reported biases against Latinos (Turner, Crisp, & Lambert, 2007), and less self-reported threat responses to Latinos (e.g., Velasco González, Verkuyten, Weesie, Poppe, 2008), compared to a group that imagined contact with a stranger of unspecified race/ethnicity. Unfortunately, the imagined contact manipulation failed to influence a change in either implicit associations of White-good word pairings, or automatic attention to outgroup vs. ingroup faces. Additionally, the imagined contact manipulation failed to influence a reduction in explicit biases or threat responses to Latinos. These findings could be a result of the design of the imagined contact task or it could be that biases to this ethnic group functions differently than biases towards other groups tested in imagined contact literature (e.g., Turner, Crisp, & Lambert, 2007; West, Holmes, & Hewstone, 2011) However, there were several strong relationships between threat responses in each classification of ITT where higher threat responses were predictive of a higher occurrence of implicit ingroup-good word pairings and higher reports of explicit biases towards Latinos, which provides replication of previous findings showing threat's predictability of biases (e.g., Stephan et al., 2002).

Other studies examining imagined contact have extended procedures in addition to the two-minute imagery task within this study. Specifically, West, Holmes, and Hewstone (2011) conducted a series of experiments ultimately identifying that including explicitly positively framed vignettes about individuals with schizophrenia prior to a five-minute imagined contact task with a stranger belonging to this outgroup, produced more positive attitudes towards individuals with schizophrenia than did those in the control condition. This study also identified intergroup anxiety to be a mediator of this effect. Given these findings, it is possible that extending the imagined contact experience to five minutes, and/or involving a reading element explicitly having a positive framing to Latino/Hispanic individuals (contradicting negative stereotypes against this group) to the procedure could function to replicate previously positive results of a reduction in biases towards the outgroup. Additionally, future work should consider that this group may function differently than group previously assessed, and adjust the imagined contact task accordingly (e.g., West, Holmes, & Hewstone, 2011).

When considering motivations to control and restrain prejudiced reactions, the second study observed findings that may indicate social desirability (Holmes, 2009). Pointedly, past research has noted that self-reported measures allow the individual opportunity to inflate their responses (Plant & Devine, 1998). The relationships between explicit biases and the motivations to control and restrain prejudiced reactions in this research support the implementation of implicit measures. Specifically, there were relationships between the concern of

appearing prejudiced and each explicit bias measure. Previous evidence focusing on West Germans' biases towards two separate outgroups (East Germans and Turks) suggests that individuals high in motivations to control prejudiced reactions, tend to respond in inflated manners on explicit bias scales (Hofmann, Gschwedner, & Schmitt, 2005). By implementing these three implicit measures, we can observe less restrained responses tapping into a more accurate depiction of individual biases (Chen & Bargh, 1997; Dovidio, Kawakami, & Gaertner, 2002; Wilson, Zanna, & Cooper, 1974).

Some limitations for this research include the sample pools. All studies were conducted with college students enrolled in psychology courses. Given the limited diversity on this predominantly white campus, current close contact with Latinos may not be as feasible to measure on this campus as other areas in the US. Specifically, the university is a medium-sized liberal arts school located in southeastern Virginia. While the demographics on campus are increasing in diversity over time, the current undergraduate population remains vastly, majorly White. In other words, non-Latino students on campus have very limited opportunities to interact with Latino students in terms of close friendships. Therefore, close current contact may be a reliable predictor of explicit and implicit bias when those contact experiences occur more often than the experiences these participants are reporting in the first two studies. Previous contact hypothesis literature (Allport, 1954; Amir, 1976; Pettigrew, 1997; Williams, 1947) would support future research continuing to examine current, closer contact's prediction of biases employing data collection from individuals with more

variation of contact with this racial, ethnic group. Additionally, past imagined

contact work (e.g., Turner & Crisp, 2007) would support future research

examining imagined contact scenarios effect on biases towards

Latinos/Hispanics.

An additional potential limitation is the length of the studies. While Study 1

was a brief self-report study easily accessible online for students, Studies 2 and

3 were much more extensive. Pointedly, they included multiple computer tasks

followed by several questionnaires. It is possible that reducing the number of

tasks participants are required to engage in, their responses could be more in

line with previous research. Regarding stimuli, using face images to represent

the Latino/Hispanic ethnic category may be difficult given the variety of physical

features that accompany this group. Future research could examine implicit

constructs that can be measured using words (such as the IAT), given its

success in relating to explicit biases (Study 2 and Study 3) and threat measures

(Study 3).

As the world is becoming more diverse and mobile it is increasingly

important to understand not only how intergroup relations function, but also what

factors promote peaceful contact. As prejudice and threat have been identified as

possible barriers preventing peaceful contact, these are good mechanisms to

begin analyzing for non-Latino and Latino interactions. This work allowed for an

expansion of current literature identifying close contact as a predictor of explicit

bias towards Latinos. However, this literature also indicates that contact may not

be a feasible predictor for implicit bias towards Latinos, evidence that further

work is needed. This work also allowed for strong replications of threat

responses' predictability of both implicit association bias as well as general

explicit bias; although further work is needed to more thoroughly examine the

effect of imagined contact on biases and to provide evidence for a potential

mediation through threat alleviation. Future research could continue to attempt

replicating results for other group interactions to determine if non-Latino and

Latino interactions function similarly or work differently than past groups

examined in this literature.

Table 1

Means and Standard Deviations for Study 1 Variables

Variable	Mean	Standard Deviation
Familiarity with outgroups - Agree Subscale	3.00	0.86
Familiarity with outgroups - Frequency Subscale	2.54	1.01
Neighborhood	2.01	1.18
High School	2.62	1.24
Classes	2.14	1.02
Casual Friends	2.13	1.23
Close Friends	1.84	1.25
Modern Ethnicity Bias	2.78	1.10
Feeling Thermometer Rating	71.23	22.21

Table 2

Correlations Amongst Study 1 Contact and Bias Variables

	Familiarity with outgroups - Agree	Familiarity with outgroups - Frequency	Neigh-borhood	High School	Classes	Casual Friends	Close Friends
Feeling Thermometer Rating	.30**	.28**	0.08	.14**	.15**	.18**	.15**
Modern Ethnicity Bias	-.21**	-.18**	-0.04	-0.07	-0.04	-0.08	-0.08

Note: p < .05*, p < .001**

Table 3

Means and Standard Deviations for Study 2 Variables

Variable	Mean	Standard Deviation
Hispanic Friends	1.16	1.24
Familiarity with outgroups - Agree Subscale	3.34	1.00
Familiarity with outgroups - Frequency Subscale	2.74	1.00
AMP Difference Score	3.02	12.90
IAT Difference Score	-0.41	0.42
Dot-Probe Difference Score	-0.24	67.34
Modern Ethnicity Bias	2.54	0.88
Hispanics/Latinos FT	66.86	16.98
Social Dominance Orientation	1.96	0.85
Concern MCPR Subscale	-0.01	1.02
Restraint MCPR Subscale	-0.04	0.97

Table 4

Correlations Between All Study 2 Variables

	2	3	4	5	6	7	8	9	10	11
1. Hispanic Friends	.39**	.48**	-0.06	0.16	-0.01	-0.12	.22**	-0.04	0.09	-0.06
2. Familiarity with outgroups - Agree Subscale		.63**	-0.04	-0.02	-0.1	-0.08	.24*	-0.09	.20*	-0.04
3. Familiarity with outgroups - Frequency Subscale			-0.11	0.07	-.25**	-0.13	.42**	-0.18	.31**	-0.1
4. AMP Difference Score				0.03	0.06	-.28*	0.15	-0.16	0.13	0.23
5. IAT Difference Score					-0.02	-0.15	0.06	-0.11	0.03	-.25*
6. Dot-Probe Difference Score						-0.07	0.03	0.02	-0.01	0.11
7. Modern Ethnicity Bias							-.38**	.63**	-.28**	-0.05
8. Hispanics/Latinos FT								-.25**	.36**	-0.12
9. Social Dominance Orientation									-.36**	-0.05
10. Concern MCPR Subscale										0.1
11. Restraint MCPR Subscale										

Note: p < .05*, p < .01**

Table 5

Means and Standard Deviations for Study 3 Variables

Variable	Control Condition		Experimental Condition	
	Mean	Std. Dev.	Mean	Std. Dev.
Dot-probe Diff. Score	5.40	13.35	2.28	11.31
IAT d-score	-0.11	0.34	-0.14	0.41
MEB	2.48	0.89	2.45	1.00
Feeling Thermometer	71.91	17.59	72.31	19.08
SDO	1.99	0.79	1.98	0.91
Realistic Threat	2.43	1.26	2.42	1.32
Perceived Threat	2.30	1.02	2.37	1.04
Intergroup Anxiety	2.97	1.36	2.69	1.48
Negative Stereotypes	25.60	11.84	25.48	12.05

Table 6

Correlations Between All Study 3 Variables

	2	3	4	5	6	7	8	9
1. Dot-probe Diff. Score	-0.06	0.05	-0.11	0.03	0.05	0.06	0.06	-0.01
2. IAT d-score		-0.25**	0.28**	-0.25**	-0.26**	-0.24**	-0.20**	-0.31**
3. MEB			-0.54**	0.64**	0.85**	0.72**	0.42**	0.50**
4. Feeling Therm.				-0.56**	-0.54**	-0.55**	-0.53**	-0.59**
5. SDO					0.57**	0.58**	0.41**	0.50**
6. Realistic Threat						0.66**	0.48**	0.52**
7. Symbolic Threat							0.51**	0.59**
8. Intergroup Anxiety								0.52**
9. Negative Stereotypes								

Note: p < .05*, p < .01**

References

Aberson, C. L., Shoemaker, C., & Tomolillo, C. (2004). Implicit bias and contact: The role of interethnic friendships. *Journal of Social Psychology*, *144*(3), 335-347.

Allport, G.W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Amir, Y. (1976). *The role of intergroup contact in change of prejudice in race relations*. In P. Katz (Ed.), Towards the elimination of racism (pp. 245-308). New York: Pergamon.

Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 361-382). New York: Guildord Press.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Bettencourt, B., Dill, K. E., Greathouse, S. A., Charlton, K., & Mulholland, A. (1997). Evaluations of ingroup and outgroup members: The role of category-based expectancy violation. *Journal of Experimental Social Psychology*, *33*(3), 244-275.

Bigler, R. S. & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, *16*, 162-166.

Bowman, N. A. & Denson, N. (2011). What's past is prologue: How precollege exposure to racial diversity shapes the impact of college interracial interactions. *Research in Higher Education*, *53*(4), 406-425.

Brannon, T. N. & Walton, G. M. (2013). Enacting cultural interests: How intergroup contact reduces prejudice by sparking interest in an out-group's culture. *Psychological Science*, *24*(10), 1947-1957.

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues*, *55*(3), 429-444.

Chen, M. & Bargh, J. (1997). Nonconscious behavioral confirmation processes: The self-fulfilling consequences of automatic stereotype activation. *Journal of Experimental Social Psychology*, *33*, 541-560.

Converse, J. M. & Presser, S. (1986). *Survey questions: Handcrafting the standardized questionnaire*. Beverly Hills: Sage Publications.

Crisp, R. J., Stathi, S., Turner, R. N., & Husnu, S. (2008). Imagined intergroup contact: Theory, paradigm and practice. *Social and Personality Psychology Compass*, *3*(1), 1-18.

Dickter, C. L., Gagnon, K. T., Gyurovski, I. I., & Brewington, B. S. (2014). Close contact with racial outgroup members moderates attentional allocation towards outgroup versus ingroup faces. *Group Processes & Intergroup Relations*, *18*(1), 76-88.

Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy: A reality check for the contact hypothesis. *American Psychologist*, *60*(7), 697-711.

Donders, N. C., Correll, J., & Wittenbrink, B. (2008). Danger stereotypes predict racially biased attentional allocation. *Journal of Experimental and Social Psychology*, *44*, 1328-1333.

Dovidio, J. F. & Fazio, R. H. (1992). New technologies for the direct and indirect assessment of attitudes. In J. Tanur (Ed.), *Questions about survey questions: Meaning, memory, attitudes, and social interaction* (pp. 204-237). New York: Russell Sage Foundation.

Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, *82*(1), 62-68.

Dunton, B. & Fazio, R. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, *23*(3), 316-326.

Eagly, A. H. & Mladinic, A. (1989). Gender stereotypes and attitudes toward women and men. *Personality and Social Psychology Bulletin*, *15*, 543-558.

Ellison, C. G., Shin, H., & Leal, D. L. (2011). The contact hypothesis and attitudes toward Latinos in the United States. *Social Science Quarterly*, *92*(4), 938-958.

Esses, V. M., Haddock, G., & Zanna, M. P. (1993). Values, stereotypes, and emotions as determinants of intergroup attitudes. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition and stereotyping: Interactive processes in group perception* (pp. 137-166). Orlando, FL: Academic Press.

Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The

MODE model as an integrative framework. In M. P. Zanna (Ed.),

Advances in experimental social psychology (Vol. 23, pp. 75-109).

Orlando, FL: Academic Press.

Gandara, P. (2010). The Latino education crisis. *Educational Leadership*, *67*(5),

24-30.

Gonzales-Backen, M. A. & Umaña-Taylor, A. J. (2011). Examining the role of

physical appearance in Latino adolescents' ethnic identity. *Journal of

Adolescence*, *34*(1), 151-162.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring

individual differences in implicit cognition: The implicit association test.

Journal of Personality and Social Psychology, *74*(6), 1464-1480.

Guimond, S., Crips, R. J., Oliveira, P. D., Kamiejski, R., Kteily, N., Kuepper, B.,

Lalonde, R. N., Levin, S., Pratto, F., Tougas, F., Sidanius, J., & Zick, A.

(2013). Diversity policy, social dominance, and intergroup relations:

Predicting prejudice in changing social and political contexts. *Journal of

Personality and Social Psychology*, *104*(6), 941-958.

Hassan, M. K. (1978). A study of ethnocentrism, prejudice, and related

personality factors in Hindu and Muslim college students. *Psychologia*, *21*,

150-154.

Hean, S. & Dickinson, C. (2005). The contact hypothesis: An exploration of its

further potential in interprofessional education. *Journal of Interprofessional

Care*, *19*(5), 480-491.

Holmes, J. D. (2009). Transparency of self-report racial attitude scales. *Basic and Applied Social Psychology*, *31*, 95-101.

Ho, C. & Jackson, J. W. (2001). Attitudes toward Asian Americans: Theory and measurement. *Journal of Applied Social Psychology*, *31*, 1553-1581.

Ho, A. K., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N., & Sheehy-Skeffington, J. (2012). Social dominance orientation: Revisting the structure and function of a variable predicting social and political attitudes. *Personality and Social Psychology Bulletin*, *38*(5), 583-606.

Hofmann, W., Gschwendner, T., & Schmitt, M. (2005). On implicit-explicit consistency: The moderating role of individual differences in awareness and adjustment. *European Journal of Personality*, *19*, 25-49.

Islam, M. R. & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin*, *19*, 700-710.

Jackman, M. R. & Crane, M. (1986). "Some of my best friends are Black…": Interracial friendships and whites' racial attitudes. *The Public Opinion Quarterly*, *50*(4), 459-486.

James, L. R. & Brett, J. M. (1984). Mediators, moderators and tests for mediation. *Journal of Applied Psychology*, *69*, 307-321.

Judd, C. M. & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review*, *5*, 602-619.

Judd, C. M., Westfall, J., & Kenny, D. A. (2012). Treating stimuli as a random

factor in social psychology: A new and comprehensive solution to a

pervasive but largely ignored problem. *Journal of Personality and Social

Psychology*, *103*(1), 54-69.

Koster, E. H., Crombez, G. Verscheuere, B., & DeHouwer, J. (2004). Selective

attention to threat in the dot probe paradigm: Differentiating vigilance and

difficulty to disengage. *Behaviour Research and Therapy*, *42*, 1183-1192.

Kuppens, T. & Spears, R. (2014). You don't have to be well-educated to be an

aversive racist, but it helps. *Social Science Research*, *45*, 211-223.

Levin, S., Van Laar, C., & Sidanius, S. (2003). The effects of ingroup and

outgroup friendship on ethnic attitudes in college: A longitudinal study.

Group Processes & Intergroup Relations, *6*(1), 76-92.

Machunsky, M., Meiser, T., & Mummendey, A. (2009). On the crucial role of the

mental ingroup representation for ingroup bias and the ingroup

prototypicality-ingroup bias link. *Experimental Psychology*, *56*(3), 156-164.

MacLeod, C., Mathews, A., & Tata, P. (1986). Attentional bias in emotional

disorders. *Journal of Abnormal Psychology*, *95*(1), 15-20.

McConnell, A. R. & Leibold, J. M. (2001). Relations among the Implicit

Association Test, discriminatory behavior, and explicit measures of racial

attitudes. *Journal of Experimental Social Psychology*, *37*(5), 435-442.

Mullin, B. A. & Hogg, M. A. (1999). Motivations for group membership: The role

of subjective importance and uncertainty reduction. *Basic and Applied

Social Psychology*, *21*(2), 91-102.

Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychlogy*: *General*, *130*(3), 466-478.

Oikawa, H., Oikawa, M., & Aobayashi, T. (2009). Affect misattribution procedure as an implicit goal measure: Implicit and explicit goals and daily behavior. *Japanese Journal of Educational Psychology*, *57*(2), 192-200.

Payne, B. K., Cheng, C. M., Govorun, O., & Stewart, B. D. (2005). An inkblot for attitudes: Affect misattribution as an implicit measurement. *Journal of Personality and Social Psychology*, *89*(3), 277-293.

Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology*, *23*, 173-185.

Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations, 32*, 187-199.

Pettigrew, T. F. & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751-783.

Phinney, J. S., Ferguson, D. L., & Tate, J. D. (1997). Intergroup attitudes among ethnic minority adolescents: A causal model. *Child Development*, *68*, 955-969.

Plant, E. A. & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, *75*(3), 811-832.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting scale and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741-763.

Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *10*(4), 336-353.

Segrest Purkiss, S. L., Perrewé, P. L., Gillespie, T. L., Mayes, B. T., & Ferris, G. R. (2006). Implicit sources of bias in employment interview judgments and decisions. *Organizational Behavior and Human Decision Processes*, *101*(2), 152-167.

Shook, N. J. & Fazio, R. H. (2008). Interracial roommate relationships: An experimental field test of the contact hypothesis. *Psychological Science*, *19*(7), 717-723.

Spencer-Rodgers, J. & McGovern, T. (2002). Attitudes toward the culturally different: The role of intercultural communication barriers, affective responses, consensual stereotypes, and perceived threat. *International Journal of Intercultural Relations*, *26*, 609-631.

Sriram, N. & Greewald, A. G. (2009). The Brief Implicit Association Test. *Experimental Psychology*, *56*, 283–294.

Stephan, W. G. & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, *41*, 157-176.

Stathi, S. & Crisp, R. J. (2008). Imagining intergroup contact promotes projection to outgroups. *Journal of Experimental Social Psychology*, *44*, 943-957.

Stephan, W. G. & Stephan, C. W. (1996). Predicting prejudice. *International Journal of Intercultural Relations*, *20*, 409-426.

Stephan, W. G. & Stephan, C. W. (2000). An integrated theory of prejudice. In S. Oskamp (Ed.), *Reducing prejudice and discrimination: The Claremont Symposium on applied social psychology* (pp. 23-45). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural Psychology*, *31*, 240-259.

Stephan, W. G., Boniecki, K. A., Ybarra, O., Bettencourt, A., Ervin, K. S., Jackson, L. A., … & Renfro, C. L. (2002). The role of threats in the racial attitudes of Blacks and Whites. *Personality and Social Psychology Bulletin*, *28*(9), 1242-1254.

Sullivan, T. A. (2000). A demographic portrait. In P. Cafferty, & D. Engstrom (Eds.), *Hispanics in the United States* (pp. 1-29). New Brunswick, NJ: Transition Publishers.

Sumner, W. G. (1906). *Folkways*. New York: Ginn.

Tajfel, H. & Turner, J. (2001). An integrative theory of intergroup conflict. In M.A. Hogg & D. Abrams (Eds.), *Intergroup relations: Essential readings* (pp. 94-109). Philadelphia, PA: Taylor & Francis: Psychological Press.

Tausch, N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2007). Individual-level and group-level mediators of contact effects in Northern

Ireland: The moderating role of social identification. *British Journal of Social Psychology*, *46*, 541-556.

Towles-Schwen, T. & Fazio, R. H. (2003). Choosing social situations: The relation between automatically activated racial attitudes and anticipated comfort interacting with African Americans. *Personality and Social Psychology Bulletin*, *29*(2), 170-182.

Trawalter, S., Todd, A. R., Baird, A. A., & Richeson, J. A. (2008). Attending to threat: Race-based patterns of selective attention. *Journal of Experimental Social Psychology*, *44*(5), 1322-1327.

Turner, R. N. & Crisp, R. J. (2010). Imagining intergroup contact reduces implicit prejudice. *The British Journal of Social Psychology*, *49*, 129-142.

Turner, R. N., Crisp, R. J., & Lambert, E. (2007). Imagining intergroup contact can improve intergroup attitudes. *Group Processes & Intergroup Relations*, *10*(4), 427-441.

Van Laar, C., Levin, S., Sinclair, S., & Sidanius, J. (2005). The effect of university roommate contact on ethnic attitudes and behavior. *Journal of Experiemental Social Psychology*, *41*, 329-345.

Velasco González, K., Verkuyten, M., Weesie, J., & Poppe, E. (2008). Prejudice towards Muslims in The Netherlands: Testing integrated threat theory. *British Journal of Social Psychology*, *47*, 667-685.

Voci, A. & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The meditational role of anxiety and the moderational

role of group salience. *Group Processes and Intergroup Relations*, *6*, 37-47.

Walker, P. M., Silvert, L., Hewstone, M., & Nobre, A. C. (2008). Social contact and other-race face processing in the human brain. *Social Cognitive and Affective Neuroscience*, *3*, 16-25.

West, K. & Bruckmüller, S. (2013). Nice and easy does it: How perceptual fluency moderates the effectiveness of imagined contact. *Journal of Experimental Social Psychology*, *49*(2), 254-262.

West, K., Holmes, E. A., & Hewstone, M. (2011). Enhancing imagined contact to reduce prejudice against people with schizophrenia. *Group Processes & Intergroup Relations*, *14*, 407-428.

Williams, R. M., Jr. (1947). *The reduction of intergroup tensions*. New York: Social Science Research Council.

Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, *107*(1), 101-126.