EXPLORING THE LINK BETWEEN DIVERSITY AND ETHNIC-AMERICAN ASSOCIATIONS: A SOCIO-COGNITIVE PERSPECTIVE

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ABSTRACT OF THE THESIS

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As the United States becomes even more ethnically diverse, Americans are increasingly faced with negotiating the benefits as well as the concerns engendered by this increasing diversity. From a social psychological perspective, this presents a unique context in which to study lay ideas about the interrelationship between ethnic and national identities. Previous research suggests that although people’s ideas about which ethnic groups embody the national identity tend to be inclusive, there exists a persistent and automatic tendency to link the American identity more strongly with White Americans than with other ethnic groups. Although there is ample research on the relationship between immersion in diversity and prejudicial attitudes and behavior, there is little research examining whether the influence of diversity extends to implicit intergroup biases. The goal of the current work was to explore how three different aspects of environmental diversity—the salience of White Americans, the salience of Asian Americans, and the salience of multiple ethnic groups—were correlated with the extent to which individuals implicitly and explicitly grant the American identity to Asian Americans and White Americans. Additionally, this work assessed the relationship between environmental diversity and individuals’ lay definitions of the boundaries of the American identity. To empirically test these research questions, we utilized ethnic demographic data from the U.S. Census Bureau as well as individual level implicit and explicit ethnic-American associations collected via Project Implicit. With zip code as the geographical unit of analysis, we analyzed the relationships between environmental diversity and implicit and explicit ethnic-American associations using hierarchical linear modeling. Over and above individual-level demographic information, we found significant relationships between environmental diversity and implicit ethnic-American associations. Interestingly, further analyses indicated that some of these relationships were moderated by racial identity. In contrast, we found no meaningful relationships between environmental diversity and individuals’ explicit ethnic-American associations. Given the increasing diversity in the U.S., as well as research suggesting that individuals’ implicit intergroup biases are predictive of behavior, the current work represents a pioneer exploration of the relationship between environmental diversity and intergroup bias.
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CHAPTER 1

INTRODUCTION

As an immigrant nation, the United States has always faced the problem of coping with ethnic diversity; the motto ‘e pluribus unum’ expresses the desire for a strong sense of common American identity without indicating the proper balance between the national ‘one’ and the ethnic ‘many.’ (Citrin, Wong, & Duff, 2001)

The United States is particularly unique in that diversity has long been a distinguishing characteristic of its population. One long-standing aspect of negotiating this diversity has revolved around the optimal way to forge a unified and shared national identity in the context of a population comprised of different ethnic groups. Although it has shifted and evolved as a function of current events, the debate about how to best accomplish this has been and continues to be at the forefront of the nation’s consciousness. For example, while some individuals endorse the idea that having and cherishing ethnic diversity is what strengthens the broader national identity, others believe that highlighting distinctions based on ethnicity only serve to be a source of conflict and thus, detract from the national identity. Given these popular ideas about the best way to achieve a cohesive national identity, it is interesting to think about how individuals’ beliefs about national and ethnic identities impact their attitudes about, perceptions of, and behavior towards others.

Today, the U.S. is even more diverse than it was in previous decades; according to the U.S. Census Bureau (2012), sometime between 2040 and 2050, the fast growth of minority groups will result in a significant demographic shift such that ethnic minority groups will constitute the numerical majority of the population. Social scientists have produced compelling work examining the interrelated nature of ethnic and national identities and the shifting racial and ethnic demographics in U.S. present a unique opportunity to expand that work. The goal of this paper is to explore whether individuals’ ideas about national and ethnic identities is related to the level of diversity in their environment. In exploring this question, we took into consideration two critical questions: for one, what are some of the
social and cognitive processes that may inform that relationship? Additionally, given the predictions by the U.S. Census Bureau, what are the most theoretically and empirically appropriate ways to define diversity in this work?

These two interrelated questions are an integral part of this work as they provide us with a richer framework for exploring how ideas about national and ethnic identities may be linked to contextual diversity. By incorporating research on socio-cognitive mechanisms that may inform how individuals interpret the shifting ethnic demographics in the U.S., we can develop theoretically appropriate indices that take those processes into account. As an illustrative example, consider a hypothetical neighborhood that is comprised of 30% Asian Americans, 25% White Americans, 20% African Americans, 15% Latino Americans and 10% Native Americans. The diversity in this neighborhood can be cognitively construed in several different ways: it can be thought of as the historically dominant ethnic group (i.e., White Americans) being proportionally smaller than the other ethnic groups. Alternatively, the diversity can be interpreted as the significant presence of a specific ethnic group (i.e., Asian Americans), or as the significant presence of several different ethnic groups (i.e., Asian Americans, African Americans, Latino Americans and Native Americans). Therefore, if we are interested in investigating individuals’ beliefs about ethnic and national identities in this particular context, it is important to take into account how people may interpret diversity in their environment. An alternative way to think about this is: if we find that diversity is indeed correlated with people’s beliefs about ethnic and national identities, what might be informing that correlation? Is it that individuals are simply characterizing their immediate environment as having fewer White Americans or as having more ethnic groups present? To the best of our knowledge, these ideas are ideas that have yet to be explored in the social psychological literature. With this in mind, this exploratory project was designed to start the process of examining these questions in depth; we looked at whether there were correlations between people’s beliefs about national and ethnic identities and their immersion in environments that have different kinds of diversity.

As described in the opening quote, the increasing diversity in the U.S. presents Americans with the challenge of negotiating a common national identity within the increasing ethnic diversity that is quickly becoming a reality. Is it the case that in today’s increasingly diverse nation, people’s conception of the national identity is one that includes
all ethnic groups or is it one that is exclusively attributed to one ethnic group? With this question in mind, the goal of this project was to assess whether there was a link between different kinds of contextual diversity (e.g., the numerical presence or lack of numerical presence of specific ethnic groups in an environment) and individuals’ ideas about national and ethnic identities. In order to provide a framework for the hypotheses proposed in this project, we will first cover research on the interrelationships between national and ethnic identities. Then, we will explore the literature on how contextual diversity impacts intergroup attitudes. Next, using a unique socio-cognitive approach, we will connect those two areas of research and lay the groundwork for our predictions about the relationships between different kinds of contextual diversity and individuals’ tendencies to ascribe the national identity to different ethnic groups.

WHO IS AMERICAN? IMPLICIT AND EXPLICIT ETHNIC-AMERICAN ASSOCIATIONS

In September 2013, Nina Davuluri became the first Indian American to be crowned Miss America. Despite being an American and not a Muslim, some of the angry responses to this decision from viewers were framed in terms of the legitimacy of her national identity. Twitter erupted in a flurry of activity as people shared their thoughts on the coronation. Buzzfeed, and other news outlets compiled these data and some of the more disturbing tweets included: “Miss America? You mean Miss 7-11”, “And the Arab wins Miss America. Classic”, “If you’re #Miss America, you should have to be American”, and “I swear I’m not racist but this is America” (Broderick, 2013). Additionally, there was backlash around the elimination of Miss Kansas Theresa Vail, a White American, who was named America’s Choice winner through online voting. Comments about her elimination centered on the idea that Theresa Vail was more representative of the American identity than the other contestants. For example, Fox News host Todd Starnes tweeted: “The liberal Miss America judges won’t say this - but Miss Kansas lost because she actually represented American values” (Kaufman, 2013).

This particular incident further highlights the ideas captured by the opening quote; that is, there continues to be a discernable tension in the U.S. about the ideal combination of ethnic (e.g., African, Asian, Latino, and White) and national identity. Compared to other
nations, the uniqueness of the U.S. lies in the fact that it is an immigrant country that was founded not on a shared ethnicity or a shared religion, but rather on shared principles. With this in mind, Citrin and colleagues (Citrin, Haas, Muste, & Reingold, 1994; Citrin, Reingold, & Green, 1990; Citrin et al., 2001) examined whether these ideals were reflected in lay conceptions about which ethnic groups were included in the American identity. Their work has documented that peoples’ conceptions about the American identity are linked with egalitarian principles such as treating all people, irrespective of their background, equally. The overwhelming consensus across ethnic groups supported the idea that the definition of what it means to be American is not rooted in religion or ethnicity, but rather in principles characterized by equality and justice. Interestingly, this work also revealed that these conceptions of the national identity also included some exclusionary elements. Specifically, while respondents agreed that treating people equally was an important aspect of the American identity, they also endorsed the nativist idea that those who did not speak English well were unqualified to be “true Americans” (Citrin et al., 1994).

While the work by Citrin and colleagues has provided interesting insights into people’s beliefs about the national identity, it is important to note that the method that was used to ascertain that information was primarily self-report. Recently, conceptual and methodological developments in the area of implicit social cognition have made it possible to study associations, attitudes and beliefs on an implicit level. Specifically, research over the last two decades has established that evaluative responses operate on two distinct levels: (1) on a conscious and deliberate level and (2) on a level outside of conscious awareness or control. Work on the latter has produced research assessing evaluations and feelings that “are not available to introspection or cannot be consciously controlled” (Devos, 2008). In contrast to the widely used self-report measures, which tap more conscious and deliberate attitudes, implicit measures were developed to bypass social desirability pressures that may constrain responses on self-report measures.

Capitalizing on these substantial developments, Devos and Banaji (2005) conducted a series of studies examining the interrelationships between national and ethnic identity. Across several studies, the authors examined the extent to which the label “American” was psychologically granted to members of different ethnic groups (e.g., Asian American, African American, and White American) on an explicit and implicit level. Similar to the
results obtained by Citrin and his colleagues, the picture that emerged on the explicit level—where participants were asked to consciously deliberate on who they believed to be “American”—was one that was egalitarian in nature. Specifically, participants consistently supported the notion that to be American meant to endorse civic values such as equality and to express a commitment to egalitarian principles. Interestingly, there were nuances in these explicit assessments such that distinctions between ethnic groups varied as a function of the standard used to define “Americanness”. For example, using domain as a standard of measuring “Americanness” demonstrated that when it came to sports, Black athletes were conceived of as embodying the American identity to a greater extent than White athletes. Another intriguing finding that emerged on the explicit level was related to the qualities participants saw as being most important in defining a “true American”. In line with work previous work by Citrin and colleagues (Citrin et al., 1994; Citrin et al., 1990), participants tended to endorse qualities that overall, incorporated both inclusionary and exclusionary attributes in defining the national identity. Specifically, participants defined the boundaries of the national identity using criteria that included liberal principles (i.e., equality), attachment to the nation (i.e., patriotism), and nativism (i.e., speaking English). Theiss-Morse’s (2009) examination about the boundaries of the national identity provides a useful frame to conceptualize these attributes; specifically, while liberal principles and emotional attachment to the nation can be construed as relatively soft boundaries of the national identity, nativist ideas—such as the importance of being a U.S. citizen and speaking English—can be thought of as relatively hard boundaries of the national identity. The contrast between these two types of aspects of the national identity provides us with interesting insight into the extent to which people endorse subjectively flexible beliefs relative to more strictly defined ideas about who is the “true American”. While these nuances on explicit measures are interesting, it is important to note that overall, ethnic minority groups were not systematically regarded as being less American than White Americans.

In contrast to the responses that emerged on the explicit level, responses on an implicit level had much less variability. Importantly, the authors found that on this level, where participants had less control over their responses, a much different pattern of responses emerged. Specifically, the evidence demonstrated that participants had a consistent and robust automatic tendency to link the American identity more with White Americans than
other ethnic groups. Referred to as the “American = White” effect, the results demonstrated that this effect held even in studies designed to reduce or reverse it. This marked dissociation between explicit and implicit associations about the national identity clearly demonstrates that beliefs endorsed on a conscious level may not always align with associations that are activated automatically and without awareness. Interestingly, this consistent and robust American = White effect was found across ethnic groups, suggesting that the implicit tendency to view White Americans as more “American” than other ethnic groups is reflective of the nature of the sociocultural reality in the United States. That is, the nature of relations between ethnic groups in the U.S. has been and continues to be shaped by factors such as asymmetry in power, social and numerical status, and length of immersion in the culture.

**THE EFFECTS OF DIVERSITY ON INTERGROUP ATTITUDES**

There has been substantial research on the relationship between contextual ethnic diversity and intergroup relations. The goal of this section is not to provide a systemic review of the literature on this topic, but rather to examine how contextual ethnic diversity influences intergroup relations by highlighting findings from recent research. In *The Nature of Prejudice*, Gordon Allport (1954) introduced what is now considered the most influential statement on intergroup contact theory; specifically, he outlined four conditions for optimal intergroup contact to reduce intergroup prejudice: equal group status within the situation, common goals, intergroup cooperation, and authority support. Interested in whether the intergroup contact could be related with less intergroup prejudice even in the absence of the conditions that Allport outlined in his theory, Pettigrew and Tropp (2006) conducted a meta-analysis in which they examined 713 independent samples from 516 empirical studies where intergroup contact was the independent variable and intergroup prejudice was the dependent variable. They found that typically, intergroup contact reduces intergroup prejudice; specifically, they obtained a mean effect sized between contact and prejudice of $r = -.21$. Importantly, although there was variability in this relationship across studies, it remained significant across samples involving different target groups, age groups, geographical areas, and contact settings.
In 2007, sociologist Robert Putnam (2007) conducted an extensive study in the U.S. on the impact of ethnic diversity and social cohesion. The results of the study, based on the Social Capital Benchmark Survey, demonstrated that greater diversity was correlated with lower social capital and social trust. On the basis of these results, Putnam (2007) argued that, in the short run, diversity is likely to weaken community cohesion. Interested in examining a more nuanced relationship between diversity and social cohesion, Stolle, Soroka, and Johnston (2008) conducted one of the first controlled cross-national comparison studies comparing the U.S. and Canada. While some of their findings were consistent with Putnam’s work, other findings highlighted the mediating role of social interactions. Specifically, individuals who had more intergroup contact were less susceptible to the negative effects of contextual diversity. In a similar vein, Schmid, Al Ramiah, and Hewstone (2014) examined the relationship between diversity and trust. In contrast to previous research, however, they assessed outgroup, ingroup and neighborhood trust. Results revealed that, consistent with prior work, there was evidence for some negative direct effects of diversity. However, they also found consistent positive and indirect effects of diversity through contact and threat. Specifically, greater diversity was associated with more contact, more contact was associated with lower threat, and that resulted in diversity being indirectly associated with greater outgroup, ingroup and neighborhood trust.

Additional research has examined how exposure to diverse environments—in and of itself—facilitates positive intergroup relations. For example, Schmid, Hewstone, and Al Ramiah (2013) examined how exposure to diverse social environments could indirectly affect intergroup attitudes. Specifically, the authors examined whether people residing in ethnically diverse neighborhoods held more complex and inclusive multiple in-group perceptions, and if that, in turn, was linked to lower intergroup bias. Their results indeed supported this idea; greater diversity was associated with individuals having more complex and inclusive multiple in-group perceptions and this was associated indirectly, and positively, with less in-group bias as well as less social distance. Importantly, their work confirmed the relationship between diversity and individuals’ complex and multiple in-group perceptions after controlling for the confounding effects of individual-level demographic variables. This allowed them to conclude that exposure, in and of itself, to diverse social environments could raise individuals’ awareness and recognition of the nature of complexity of social groups.
Diverging from examining the role of psychological processes of individuals and the impact of contact on the relationship between diversity and intergroup attitudes, Christ et al. (2014) took a more macro-level approach and examined whether there evidence for a contextual effect of positive intergroup contact. Specifically, the authors were interested in whether living in a context in which other ingroup members interact positively with members of the outgroup would reduce prejudice, above and beyond an individual’s own contact experiences and whether they actually knew the ingroup members who were experiencing the intergroup contact. Across three cross-sectional studies and one longitudinal study, their results suggested that the relationship between contact and prejudice was mediated by the context. That is, the tolerant (or intolerant) norms that were commonplace in a social context influenced prejudice on a macro-level, such that people were influenced by the behavior of others. This work is important as it further illustrates the fact that context is a crucial factor to assess in examining the relationship between diversity and intergroup relations.

While not a systemic overview of the research examining the complex relationship between diversity and intergroup attitudes, this brief literature review demonstrates that the ethnic composition of a context impacts intergroup relations and specifically, individual’s attitudes towards and beliefs about different ethnic groups.

**THE CONTEXT-SENSITIVE NATURE OF IMPLICIT ASSOCIATIONS**

Given the previously discussed work demonstrating the effects of diversity on intergroup attitudes, how might contextual diversity be related to associations that people have on a more automatic level? To make predictions about this link, we can draw from research that demonstrates that—contrary to the assumption that implicit associations are rooted in stable mental representations—thoughts, beliefs and attitudes that operate on an automatic level are malleable and context-sensitive. For instance, Wittenbrink, Judd, and Park (2001) examined how different social contexts moderated automatic evaluations of a group. Their work demonstrated that in contrast to watching a video clip of African Americans in a gang-related setting, when participants watched a video clip of African Americans at an outdoor barbeque, implicit prejudice was reduced. This finding highlights that the context in which the target group was embedded played a primary role in eliciting
differing automatic evaluations. In a follow-up study, the authors manipulated context and category members orthogonally; the context was either a city street or a church and category members were Black or White. The results demonstrated that this subtle manipulation produced significantly higher automatic negativity toward Black Americans in the street context than in the church context.

In a similar vein, Dasgupta and Greenwald (2001) tested whether changing the context in which individuals are immersed could modify automatic negative attitudes. More specifically, they hypothesized that when perceivers were immersed in situations that facilitated frequent exposure to admirable members of stigmatized groups and disliked members of non-stigmatized groups, automatic bias would decrease. Their results were in line with their hypothesis such that exposure to well-liked Black exemplars and disliked White exemplars significantly weakened pro-White attitudes. Research on the influence that the presence of individuals belonging to ethnic minority groups has on automatic attitudes also contributes to the idea of the implicit associations are indeed malleable. Lowery, Hardin, and Sinclair (2001) demonstrated that exposure to a Black experimenter reduced Whites’ automatic racial bias. Likewise, Rudman, Ashmore, and Gray (2001) found that white students who took a diversity seminar led by a Black professor displayed significantly lower racial bias than students who took a methods course with a White professor.

Given that the focus of the current work includes investigating individuals’ automatic ethnic-American associations, the research demonstrating that automatic evaluations are inherently flexible and context-sensitive supports the idea that the ethnic diversity in an individual’s environment might be related to their implicit beliefs about ethnic and national identity. With this in mind, the next section will focus on highlighting theories about how people cognitively processes their environment to provide support for specific predictions about the relationship between contextual diversity and the extent to which people include specific ethnic groups in the national identity.

**DIVERSITY AND ETHNIC-AMERICAN ASSOCIATIONS: A SOCIO-COGNITIVE APPROACH**

Considering the research on the relationship between the ethnic composition of an environment and intergroup relations as well as research highlighting the context-sensitive
nature of automatic evaluations of groups, what predictions can we make about the relationship between environmental diversity and ethnic-American associations? In order to make specific predictions, we will first operationally define diversity in a manner that is theoretically appropriate and meaningful. We will then integrate those definitions of diversity with work that provides insights into how people process characteristics of social environments on a cognitive level. This socio-cognitive approach will allow us to examine the relationship between diversity and ethnic-American associations in a manner that incorporates individual level factors as well as structural level (i.e., the context in which people are immersed) factors.

**Socio-Cognitive Perspective #1: Numerical Decrease of the Dominant Ethnic Group**

Considering the prediction that by 2050, White Americans will no longer constitute the majority group in the U.S., perhaps diversity can be interpreted as the decrease in the proportion of White Americans. If we think about ethnic-American associations, if White Americans are often construed as prototypical of the American identity, then perhaps the numerical decrease in White Americans will facilitate a conceptualization of the national identity as one that is not exclusively linked to White Americans. Put another way, it may be that the decrease in the proportion of White Americans will undermine the automatic heuristic of “most Americans = White”.

In examining the mechanisms underlying the American = White effect, Devos and Heng (2009) demonstrated that the American = White effect can be conceptualized as an automatic accessibility bias. Specifically, when individuals have little or no information, they tend to rely on more automatic processes that lead to the assumption that a White person is more likely to be American than a person who is member of a different ethnic group. With this insight about the ease with which people cognitive access the categories “White” and “American”, we turn to research on how exemplars in the environment impact associations we might have on a more automatic level. Specifically, the exemplar-based model of judgment (Smith, 1990; Smith & Zarate, 1992; Zarate & Smith, 1990) suggests that perceivers do not store abstract representations of groups but instead utilize specific, concrete exemplars. According to this model, the stereotype of African Americans as athletic, for
example, is cognitively stored in the form of specific individuals (e.g., Kobe Bryant, Michael Jordan). Furthermore, this particular exemplar-based model emphasizes the role of goals and context in determining which stereotypes are activated and applied. This work is relevant in that it implies that the information processing involved in social categorization relies on the default preference for simple category dominance (i.e., easily accessible exemplar information). Research on stereotypes in the media, for example, suggests that because of the unmitigated accessibility of racial stereotypes, even subtle racial cues in the media are sufficient to activate racial attitudes that influence decision-making without requiring conscious effort (Devine, 1989). This line of research is particularly relevant to this socio-cognitive perspective because it lends support to the idea that if the environments in which Americans are living, working and learning today are characterized by a decreased presence of White Americans, perhaps the reliance on the default preference for “most Americans = White” will be reduced. Additionally, it is also possible that with the decreased presence of White Americans, individuals may shift their explicit attitudes to align with the increased ethnic complexity of their environments. That is, individuals may be more willing to ascribe the national identity to members of ethnic minority group and furthermore, be less willing to utilize stricter, criteria in determining which attributes define the “true American”. Therefore, our hypotheses for the relationship between the proportion of White Americans present in a context and individuals’ implicit and explicit ethnic-American associations is as follows:

Hypothesis 1a: For implicit ethnic-American associations, we predict that lower proportions of White Americans in the environment will be correlated with lower levels of the American = White effect.

Hypothesis 1b: For explicit ethnic-American associations, we predict that lower proportions of White Americans in the environment will be correlated with a decreased tendency to see only White Americans as embodying the national identity.

Hypothesis 1c: When considering the extent to which participants will endorse hard boundaries, we predict that lower proportions of White Americans in the environment will be correlated a lower tendency to endorse hard boundaries in defining the “true” American.
Socio-Cognitive Perspective #2: Numerical Increase of an Ethnic Minority Group

While the first socio-cognitive perspective focuses on the salience of White Americans, the focus of the second socio-cognitive perspective is on an alternative definition of diversity. That is, this perspective proposes conceptualizing diversity as the salience of an ethnic minority group. In other words, the increasing diversity in the U.S. can be interpreted or understood through the lens of an increased presence of a specific ethnic minority group. Although this definition of diversity could be seen as the simple ‘flip side’ of the first, we argue that it is theoretically distinct and as a result, it is measuring a different idea of diversity. More precisely, we posit that the cognitive processes that could be elicited by framing diversity as the decreased presence of a historically dominant group would be distinct from the cognitive processes that may be elicited by framing diversity as the increased presence of an ethnic minority group. With this reasoning in mind, this question of interest is whether the increased presence of a specific ethnic group will facilitate more inclusive implicit and explicit definitions of the national identity.

Similar to the first socio-cognitive perspective research, research on accessibility lends support to the prediction that as the salience of a specific ethnic group increases, the tendency to link the American identity solely with White Americans could be reduced. Research on the accessibility of counter-stereotypic exemplars suggests that when individuals are exposed to exemplars that contradict the norm (i.e., Asian Americans), implicit biases can be reduced (Dasgupta & Greenwald, 2001; Wittenbrink et al., 2001). Therefore, if diversity is construed as the increase in the presence of an ethnic minority group, then this means that more diversity translates to more opportunities for individuals to encounter exemplars who contradict the association that “White” is “American”. Additionally, similar to the predictions made for the first definition of diversity, we predict that if individuals are encountering more members of a specific ethnic group in their environment, their explicit ethnic-American associations may also shift to be more inclusive in nature. Put another way, we predict that due to the high salience of a specific ethnic group, individuals may be less likely to automatically ascribe the national identity solely to White Americans and in line with this, they may also be less likely to consciously report an endorsement of strict, or inflexible, criteria in determining the boundaries of the national identity. Accordingly, our
hypotheses for the relationship between the proportion of Asian Americans present in a context and individuals’ implicit and explicit ethnic-American associations is as follows:

Hypothesis 2a: For implicit ethnic-American associations, we predict that higher proportions of Asian Americans in the environment will be correlated with lower levels of the American = White effect.

Hypothesis 2b: For explicit ethnic-American associations, we predict that higher proportions of Asian Americans in the environment will be correlated with a lower tendency to see only White Americans as embodying the national identity.

Hypothesis 2c: When considering the extent to which participants will endorse hard boundaries, we predict that higher proportions of Asian Americans will be correlated with a lower tendency to endorse hard boundaries in defining the “true” American.

**Socio-Cognitive Perspective #3: Numerical Increase of Multiple Ethnic Minority Groups**

In examining the literature, there is work that supports the idea of an ethnically diverse context being characterized as having a high amount of categorical complexity. Think of this way: if you consider an environment in which intergroup contact is occurring is one that is complex, individuals will be required to pay attention to multiple cues and as a result of this, are less likely to rely heavily on simple and dichotomous categorization process. In line with this idea, Crisp and Hewstone (2007), drawing from Fiske and Neuberg’s (1990) continuum model, proposed a model of multiple categorization effects wherein low levels of category complexity facilitate the use of simple categorization processes; in contrast, high levels of category complexity engender cognitive processes associated with greater complexity. Put another way, as the context becomes more complex, people are less likely to utilize simple categorical thinking and instead shift to think of others in more nuanced ways.

There is research examining how categorical complexity may be conducive to reducing intergroup bias. For example, Crisp, Turner, and Hewstone (2010) examined the extent to which highlighting a common identity versus highlighting several categorical dimensions (e.g., race and gender) was related to intergroup bias. Additionally, they examined the roles of self-categorization and perceived complexity in this relationship. Across two studies, they found that in when the context was more complex (i.e., participants were attuned to more than one dimension of category membership), greater perceived
complexity of the intergroup context, not self-categorization, was associated with lower intergroup bias. This work provides additional support for the idea that with the increased presence of multiple distinct ethnic groups, certain cognitive processes associated with how people interpret the complexity of their environment may facilitate lower intergroup bias.

Although there is little experimental research on how the number of groups salient in a context impacts implicit associations, work in our lab (Devos, Hamilton, & Mohamed, 2012) demonstrated that as the number of distinct ethnic groups being considered simultaneously increased (two, three, or four), the American identity was more readily linked to an ethnic minority group. Importantly, this finding was not due to reliance on individuating processes. That is, the mitigation of the American = White effect was instead facilitated by the cognitive shift from simplistic and dichotomous ethnic categorization to a more complex and categorical mindset. Finally, if diversity is defined as the increase in the presence of multiple distinct ethnic groups, it is possible that the increased complexity in the environment will facilitate the expression of explicit beliefs about the American identity that are also complex. In other words, individuals may be more likely to include ethnic minority groups in assessing who is American and moreover, may be less likely to endorse stricter criteria for determining the attributes of the national identity. With this in mind, the third set of hypotheses is as follows:

Hypothesis 3a: For implicit ethnic-American associations, we predict that higher proportions of multiple ethnic groups in the environment (i.e., White Americans, Asian Americans, African Americans, Latino Americans, Multiracial, and Other) will be correlated with lower levels of the American = White effect.

Hypothesis 3b: For explicit ethnic-American associations, we predict that higher proportions of multiple ethnic groups in the environment (i.e., White Americans, Asian Americans, African Americans, Latino Americans, Multiracial, and Other) will be correlated with a lower the tendency to see only White Americans as embodying the national identity.

Hypothesis 3c: When considering the extent to which participants will endorse hard boundaries, we predict that higher proportions of multiple ethnic groups (i.e., White Americans, Asian Americans, African Americans, Latino Americans, Multiracial, and Other) in the environment will be correlated with a lower tendency to endorse hard boundaries in defining the “true” American.
INDIVIDUAL DIFFERENCES IN THE RESPONDING TO DIVERSITY

When examining how contextual increasing diversity may be linked to implicit and explicit ethnic-American associations, it is important to address the influence of individual differences. Specifically, while not the focal point of the current work, we must take into account research suggesting that diversity, in and of itself, may elicit different responses as a function of individual level differences such as ethnicity and political orientation. Outten, Schmitt, Miller and Garcia (2012) conducted a study assessing how White participants responded to diversity. The authors experimentally manipulated whether White Americans as well as White Canadians were presented with actual demographic projections predicting that Whites would no longer be the numerical majority and then measured intergroup emotions. They found that compared with Whites who did not view future projections, those who did felt more angry toward and fearful of ethnic minorities and were also more sympathetic toward their ingroup. Another interesting study by Craig and Richeson (2014) also explored how the salience of the racial demographic shifts would influence participants’ reactions. They examined how the demographic shifts would impact the political leanings and political ideologies of Whites who were unaffiliated with a political party. The authors found that making the majority-minority shift salient resulted in politically unaffiliated White Americans to lean more toward the Republican Party and to express greater political conservatism. Given this work, ethnicity may indeed play a role in the relationship between diversity and ethnic-American associations such that White Americans might display stronger explicit and implicit tendencies to see their group as more American than ethnic minority group.

Another individual difference variable that may moderate the relationship between diversity and ethnic-American associations is political ideology. More precisely, it may be the case that compared to liberals, participants who identify as conservative would be less susceptible to the effect of diversity. Research has documented that compared to those who identified as conservative, those who identified as liberal displayed weaker explicit and implicit racial bias (Nosek et al., 2007). Given this, it may be the case that for self-identified conservatives, contextual diversity will not facilitate more inclusive explicit and implicit ethnic-American associations.
OVERVIEW OF PRESENT RESEARCH

The goal of the current work is to empirically assess how three contextually defined indices of diversity relate to people’s ethnic-American associations. We will examine how diversity that is present in an individual’s geographical area is linked to the extent to which they include White Americans and Asian Americans in their implicit and explicit associations about the national identity. White Americans and Asian Americans were selected as the target ethnic groups due to methodological limitations, which will be discussed in detail in the methods section of this paper.

With regards to empirically measuring diversity, the first two definitions of diversity can be easily assessed by the proportional representation of White Americans and Asian Americans. However, the third definition of diversity requires a more sophisticated assessment; therefore, we will utilize a sociological index of diversity. Using cluster analysis, Massey and Denton (1988) conducted an extensive literature review to identify 20 different indexes of segregation. What is relevant to the current work is their discussion on indices of evenness, defined as the spatial distribution of different groups among units in a metropolitan area. One measure of evenness is the entropy index, also called the information index. Proposed originally by Theil (1972; Theil & Finizza, 1971) to measure school segregation, the entropy index is a measure of the average difference between a unit’s group proportions and that of the system as a whole. Since the entropy index is used to measure the even distribution of groups across a larger geographical unit of analysis (e.g., county, state, etc.), a diversity score for each geographical sub-unit is first calculated. The diversity score, a partial formula, describes the diversity present in a geographical area. The maximum level of diversity occurs when all of the groups have equal representation in a geographical area, such that with the six groups, for example, each group would compromise about 16% of the area’s population. Conversely, lower diversity scores indicate that all of the groups do not have equal representation in a specified geographical area. The diversity score is not a segregation measure because it is not focused on the distribution of the groups across a larger area; rather, it assesses the relative size of groups present in a specific given area. In empirically measuring the salience of multiple ethnic groups for the third socio-cognitive perspective, we will use the diversity score to calculate the extent to which White Americans, African
Americans, Asian Americans, Latino Americans, multiracial individuals, and individuals who belong to other ethnic groups are represented in a geographical area.

To sum up, the current work will examine the relationship between the three socio-cognitive definitions of diversity and two outcome variables of interest: implicit ethnic-American associations and explicit ethnic-American associations.
CHAPTER 2

METHODOLOGY

DATA SOURCES

Census Bureau

The data for this study came from two national datasets: Project Implicit and the Census Bureau. Data from the 2010 U.S. Census Bureau (2010) was utilized to obtain information about the ethnic group composition of the U.S. at the zip code level. More specifically, publically available data on the Census Bureau website provided us with information on the racial and ethnic population group distributions at the national level as well as lower levels of geography (i.e., county level, neighborhood level). Starting in 1997, the Office of Management and Budget (1997) required that federal agencies use a minimum of five race categories: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. Respondents who were unable to identify with any of those categories had the option of picking a sixth category, ‘Some Other Race’. As a result, there are 57 possible multiple race combinations involving the five OMB race categories and Some Other Race. For the sake of simplicity, the data was aggregated so that there were 6 ethnic categories: White Americans, Asian Americans, African Americans, Latino Americans, Multiracial, and Other. In addition to data on the race and ethnicity, the U.S. Census Bureau also provides data at different geographic levels; the data that was used in the present work was at the zip code level. This is primarily due to the fact that the only geographical data we have for participants in the second dataset (discussed below) is zip code. Although the Census Bureau provides data at the county and state level, using zip code as the geographical unit of analysis might actually be the best way to assess the relationships of interest since people generally tend to live, work and go to school in their zip codes.
**Project Implicit**

Project Implicit, the second data source, is a non-profit organization and international collaboration between researchers who are interested in implicit social cognition – thoughts and feelings outside of conscious awareness and control. Founded in 1998 by Tony Greenwald, Mahzarin Banaji, and Brian Nosek, this website is open to the general public for education outreach purposes and features self-administered Implicit Association Tests (IAT; Greenwald, McGhee, & Schwartz, 1998).

**Implicit Ethnic-American Associations**

For the present work, we utilized data collected from participants who completed an IAT assessing the extent to which they implicitly viewed White and Asian Americans as embodying the national (i.e., American) identity. The task consisted of two blocks that included a comparison between the concepts “White American” vs. “Asian American” and “American” vs. “foreign.” At the beginning each block, the colored category labels were presented at the top left or right corners of the screen and the stimuli were presented in the middle of the screen. In one block of trials, the concept “White American” was paired with “American” and the concept “Asian American” was paired with “foreign.” In the other block of trials, the concept “White American” was paired with “foreign” and the concept “Asian American” was paired with “American.” The blocks consisted of stimuli (faces of White or Asian men or women) that represented the concepts “White American” or “Asian American,” mixed with stimuli that represented the concept “American” or “foreign.” Participants were asked to sort each stimulus into its correct category as quickly as possible by pressing the “a” or the “5” key. When participants made an error, a red “X” appeared below the stimulus. When this happened, participants were required to choose the correct answer in order to move on to the next trial. Each critical block included a total of 60 trials with a brief message appearing after the first 20 trials to remind participants to go fast. The order of the blocks was randomized across participants.

**Participants**

Participants found the Project Implicit website through media coverage, blog or chatroom discussions, personal recommendation, search engines, topically relevant sites that
provided a link, as a class or work recommendation or assignment, or accidentally. Visitors to the site first examined background information about implicit attitudes and stereotypes and were invited to participate. Those who opted to participate could select from a list of 2–15 topics, most annotated with a brief description of the typical finding. Study sessions lasted about 10 minutes and consisted of a brief questionnaire of explicit attitudes, stereotypes, and related judgments about the topic, a short demographics survey, and administration of an IAT. For most sessions, the order of the questionnaire and IAT was randomized. At the end of the session, participants received debriefing feedback about their IAT performance and were encouraged to explore additional background materials such as frequently asked questions and answers.

**Data Preparation**

The IAT data was analyzed following the improved algorithm recommended by Greenwald, Nosek, and Banaji (2003). Trials with latencies > 10,000 ms were eliminated. Participants who responded faster than 300 ms on more than 10% of the trials will be dropped. Following Nosek et al. (2007), we also excluded the data for participants who: 1) had 25% of responses that were too fast in any one of the critical blocks, 2) had 35% of responses that were too fast in any one of the practice blocks, 3) made more than 30% erroneous responses across the critical blocks, 4) 40% errors in any one of the critical blocks, 5) 40% errors across all of the practice blocks, or 6) 50% errors in any one of the practice blocks. For the remaining participants, we calculated the difference between the mean response latencies for the two blocks of trials, divided by its associated pooled standard deviation. This index (IAT D) reflects the direction and the strength of the IAT effect and as recommended, statistical analyses was performed on the IAT D index.

**Explicit Ethnic-American Associations**

**Independent Rating Measure**

Participants indicated the extent to which they considered four different ethnic groups (White, Black, Asian, and Native Americans) to be American. For the purposes of the current work, we looked specifically at the two target groups of interest: White and Asian
Americans. The specific phrasing of this question was as follows: ‘In your mind, how American are people who belong to the following groups? That is, how strongly are they identified with America and all things Americans?’ Participants were then able to select an answer for each target group on a scale ranging from ‘Absolutely American’ to ‘Not at all American’ (see Appendix C for full measure).

**Comparative Rating Measure**

Participants also responded to two items that assessed their relative judgments of White Americans and Asian Americans. Specifically, one item asked participants to pick one of seven statements that best described them. These statements ranged from a strong preference for White Americans over Asian Americans to a strong preference for Asian Americans over White Americans. The mid-point of the scale indicated an equal balance for both ethnic groups. The other item assessing relative judgments of both ethnic groups asked participants to pick a statement which best described their belief. Once again, they were presented with seven statements and asked to pick one statement. These statements ranged from “I consider Americans of European descent to be much more American than Americans of Asian descent” to “I consider Americans of Asian descent to be much more American than Americans of European descent”. Once again, the mid-point of the response scale indicated the belief that both groups were equally American (see Appendix C for full measure).

**Soft Boundary Measure**

Participants reported their beliefs about the qualities that make an individual a true American. Specifically, they were asked to indicate their agreement or disagreement with statements such as: ‘To be a true American, it is important to have been born in America’, ‘To be a true American, it is important to feel American’, and ‘To be a true American, it is important to respect America’s political institutions and laws’ (see Appendix C for full measure). While the full measure has items that capture the four categories discussed by Devos and Banaji (2005), here, the focus will be on the items that can be characterized as capturing a “soft” boundary of defining the national identity (i.e., “Feel American” and “Defend America when it is criticized”).
**DEMOGRAPHIC INFORMATION**

Finally, participants also completed a demographic questionnaire, which included questions about the participant’s gender, age, political orientation, occupation, education, religiosity, citizenship (US or otherwise), and their current zip code.
CHAPTER 3

RESULTS

DESCRIPTIVE ANALYSES

U.S. Census Bureau Data

The dataset contained information for 32,989 zip codes. Across zip codes, the average population was 9,359 with a standard deviation of 13,668. The population across zip codes ranged from 0 to 113,916. The average number of White Americans across zip codes was 5,966 ($SD = 8,339$) and the population for this group ranged from 0 to 70,005. The average number of Asian Americans across zip codes was 438 ($SD = 1,804$) and the population for this group ranged from 0 to 60,670. We also looked at descriptive statistics for the other ethnic groups (see Table 1). Overall, the biggest ethnic group is the White American population followed by Hispanic/Latino Americans, Black Americans, Asian Americans, and finally, individuals whose ethnic identity fell in the ‘Other’ category.

Table 1. Descriptive Statistics for Ethnic/Racial Data

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Americans</td>
<td>5966</td>
<td>8339</td>
<td>0—70,005</td>
</tr>
<tr>
<td>Asian American</td>
<td>438</td>
<td>1804</td>
<td>0—60670</td>
</tr>
<tr>
<td>Black American</td>
<td>1142</td>
<td>3689</td>
<td>0—77,175</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>1530</td>
<td>5177</td>
<td>0—96,083</td>
</tr>
<tr>
<td>Other American</td>
<td>282</td>
<td>677</td>
<td>0—29,493</td>
</tr>
</tbody>
</table>

DIVERSITY INDEX #1: PROPORTION OF WHITES

For the first diversity index, the average proportion of White Americans across zip codes was 79%, with a standard deviation of 24%. The values for this diversity index ranged from .000 to 1.000. Overall, the distribution for this diversity index was negatively skewed (-1.544, $SE = .014$).
Diversity Index #2: Proportion of Asians

For the second diversity index, the average proportion of Asian Americans across zip codes was 10%, with a standard deviation of 50%. The values for this diversity index ranged from .000 to 1.000. Overall, the distribution for this diversity index was positively skewed (6.483, SE = .014).

Diversity Index #3: Entropy Score Index

For the third diversity index, the average proportion of the five ethnic groups (i.e., White Americans, African Americans, Asian Americans, Latino Americans, and individuals who belong to other ethnic groups) across zip codes was .50, with a standard deviation of .34. The values for this diversity index ranged from .000 to 1.56. Overall, the distribution for this diversity index was positively skewed (.616, SE = .014).

Bivariate Correlations Between Overall Population, Proportion of Ethnic Groups and Diversity Indices

When examining the correlation between overall population and proportion of ethnic groups, we found that on average, the overall population in a zip code was negatively correlated with the proportion of White Americans (see Table 2). This suggests that more populated zip codes had smaller proportions of White Americans as well as smaller proportions of individuals whose racial/ethnic identity was categorized as ‘Other’ (i.e., these individuals were not Asian American, Black American, or Hispanic/Latino American). In contrast to these results, we found positive correlations between the overall population and the population of Hispanic/Latino Americans, the population of Black Americans, and the population of Asian Americans; this indicates that on average, more populated zip codes had higher proportions of these three ethnic groups. Finally, we also found a positive correlation between the overall population and the Entropy Score index indicating that more populated zip codes have higher diversity levels (i.e., higher proportion of multiple ethnic groups). Overall, these results seem to be in line with the Census Bureau’s current estimates of racial and ethnic diversity in the U.S.
Turning to the relationship between the proportion of White Americans and the other variables, we found that there was a negative correlation between the proportion of White Americans and the proportion of Black Americans, Asian American, Hispanic/Latino American and the proportion of individuals whose ethnic/racial identity fell in the ‘Other’ category (see Table 2). Given this, it was not surprising that we also found a negative correlation between the proportion of White Americans and the Entropy Score Index. Taken together, these results suggest that on average, zip codes with high proportions of Asian Americans, Black Americans, Hispanic/Latino Americans, Multiracial and other ethnically identified individuals had lower proportions of White Americans.

Finally, we also looked at the relationship between the proportion of Asian Americans and the other variables (see Table 2). We found that the proportion of Asian Americans was negatively correlated with the proportion of White Americans, highlighting that zip codes with higher proportions of Asian Americans had smaller proportions of White Americans. In contrast, the proportion of Asian Americans was positively correlated with the proportion of Black Americans, Hispanic/Latino Americans and individuals whose racial/ethnic identity falls under the ‘Other’ category. Similarly, the proportion of Asian Americans was positively correlated with the Entropy Score index suggesting that on average, zip codes with high proportions of Asian Americans also had high proportions of Black Americans, Hispanic/Latino Americans, and other ethnically and racially identified individuals.

**Project Implicit Data**

The Project Implicit dataset contained data for 102,518 participants. Of these participants, 61,253 were female (59.4%) and 41,265 were male (40%). In terms of ethnicity, participants were asked to pick between three options: Hispanic or Latino, Not Hispanic or Latino, or Unknown. Of those who responded ($N = 92,497$), 77% identified as not Hispanic or Latino and 5.9% identified as Hispanic or Latino. Participants were also asked to report their race. Of those who responded ($N = 95,709$), 48.5% identified as White, 36.8% identified
Table 2. Bivariate Correlations Between Overall Populations, Proportions of Ethnic Groups, and the Entropy Score Index

<table>
<thead>
<tr>
<th>Index</th>
<th>Overall Population</th>
<th>Proportion – White (Diversity Index #1)</th>
<th>Proportion – Asian (Diversity Index #2)</th>
<th>Proportion – Black</th>
<th>Proportion – Hispanic/Latino</th>
<th>Proportion – Other</th>
<th>Entropy Score (Diversity Index #3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Population</td>
<td>--</td>
<td>-.422**</td>
<td>.387**</td>
<td>.209**</td>
<td>.367**</td>
<td>-.037**</td>
<td>.533**</td>
</tr>
<tr>
<td>Proportion – White</td>
<td>-.422**</td>
<td>--</td>
<td>-.322**</td>
<td>-.629**</td>
<td>-.642**</td>
<td>-.351**</td>
<td>-.703**</td>
</tr>
<tr>
<td>Proportion – Asian</td>
<td>.387**</td>
<td>-.322**</td>
<td>--</td>
<td>.013*</td>
<td>.157**</td>
<td>.036**</td>
<td>.470**</td>
</tr>
<tr>
<td>Proportion – Black</td>
<td>.209**</td>
<td>-.629**</td>
<td>.013*</td>
<td>--</td>
<td>.16**</td>
<td>-.56**</td>
<td>.443**</td>
</tr>
<tr>
<td>Proportion – Hispanic</td>
<td>.367**</td>
<td>-.642**</td>
<td>.157**</td>
<td>0.16**</td>
<td>--</td>
<td>-.030**</td>
<td>.463**</td>
</tr>
<tr>
<td>Proportion – Other</td>
<td>-.037**</td>
<td>-.351**</td>
<td>.036**</td>
<td>-.056**</td>
<td>-.030**</td>
<td>--</td>
<td>.103**</td>
</tr>
<tr>
<td>Entropy Score</td>
<td>.533**</td>
<td>-.703**</td>
<td>.470**</td>
<td>.433**</td>
<td>.463**</td>
<td>.103**</td>
<td>--</td>
</tr>
</tbody>
</table>

Note: N = 32,845
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

as Asian, 4.4% identified as Black, and 3.1% identified as ‘Other’ (i.e., American Indian-Alaskan Native, Native Hawaiian or other Pacific Islander, more than one race-Black and White, more than one race – other, and other-unknown).

The age breakdown of the sample was as follows: 30.3% were under 20 years of age, 39.5% were between the ages of 20 and 29 years, 15.5% were between the ages of 30 and 39 years, 8% were between the ages of 40 and 49 years, 4.4% were between the ages of 50 and 59 years, and 1.5% were over the age of 60. For the multilevel analyses, the data of participants under the age of 18 years were excluded.

The education levels of the participants were as follows: 15.3% completed some high school or less, 8.2% had a high school degree, 42.4% had some college education, 20.6% had a bachelor’s degree, and 13.5% had an advanced degree. Finally, participants were also asked to report their political orientation; 12.9% identified as strongly liberal, 22.3% identified as moderately liberal, 28.5% identified as slightly liberal, 25.9% identified as slightly conservative, 6.4% identified as moderately conservative and 4% identified as strongly conservative. Finally, while 91.6% of the sample identified themselves as U.S. citizens, everyone in the sample indicated that they were U.S. residents.
Overall, this data reveals to us some important characteristics about our sample. That is, a significant proportion of our sample is comprised of individuals who self-identify as young (between the ages of 20 and 29 years), White American, slightly liberal, and as having completed some college education.

**Implicit Ethnic-American Associations**

Prior to utilizing the IAT data in our multilevel model analyses, we assessed the internal consistency of the measure. We computed Cronbach’s alpha for the four IAT data parcels included in the dataset. The results indicated that the internal reliability of the IAT was high ($\alpha = .85$). We then examined the descriptive statistics for IAT D score for our sample. We found that on average, the IAT D score was $0.34$ ($SD = 0.45$), suggesting that compared to Asian Americans, participants were faster to pair White Americans with the American identity. The values for the IAT D score ranged from -1.43 to 1.58. Overall, the distribution was relatively normal. These preliminary descriptive analyses for the implicit data highlight that although our sample is mostly comprised of young, college educated and liberal participants, they still had a difficult time ascribing the American identity to Asian Americans.

**Explicit Ethnic-American Associations**

As outlined in the methods section, we had three measures that assessed participants’ explicit ethnic-American associations. The first two measures (i.e., independent rating and comparative rating) were focused on assessing participants’ direct beliefs about the extent to which they included both groups in the national identity. The third measure (i.e., endorsement of soft boundaries) examined specific criteria that participants endorsed as being necessary in defining a “true” American.

**Independent Rating**

For the explicit comparison item where participants were asked to indicate the extent to which they considered White Americans, Asian Americans, Black Americans and Native Americans to be American, the average rating for Asian Americans was $5.0$ ($SD = 1.5$) and
the average rating for White Americans was 6.1 ($SD = 1.0$). A difference score was computed for this item and this score was significantly different from zero ($d = 0.80$), suggesting that participants perceived White Americans as more American than Asian Americans.

**Comparative Rating**

For the relative comparison item where participants were asked to indicate a response that best described their belief about the extent to which they considered descendants of both groups to be American, the average rating was $.73$ ($SD = 1.10$), indicating that participants considered Americans of European descent slightly more American than Americans of Asian descent.

**Endorsement of Soft Boundaries**

To assess endorsement of soft boundaries of the national identity, we used the following five items: ‘Vote in elections’, ‘Feel American’, ‘Defend America when it is criticized’, ‘Be patriotic’, and ‘Respect America’s political institutions and laws’. An initial test was conducted to assess the internal reliability of these five items. The alpha for these items was $.734$, indicating that the internal reliability was good. For these five items, voting in elections ($M = 1.8$, $SD = 1.6$) was seen as the attribute that was the most indicative of a true American, followed by respecting America’s political institutions and laws ($M = 1.6$, $SD = 1.6$), feeling American ($M = 1.5$, $SD = 1.6$), being patriotic ($M = .82$, $SD = 1.9$), and defending America when it is criticized ($M = .30$, $SD = 2$).

Overall, our findings for the explicit ethnic-American data suggest that our sample considers White Americans to embody the national identity more than Asian Americans. It’s important to note that these associations weren’t robust. In other words, participants were not completely excluding Asian Americans from the national identity. For example, with the independent ratings, participants placed both Asian Americans and White Americans on the higher end of the 7-point scale. Similarly, the comparative rating measure revealed a slight difference between the perceptions of both groups, which is in line with the idea that explicitly, participants didn’t display significant differences in how they viewed both groups. Finally, the results for the endorsement of soft boundaries suggested that our participants
considered civic values to slightly more indicative in defining the true American compared to emotional ties to the nation.

**Additional Descriptive Analyses**

Finally, we were also interested in examining the extent to which the implicit and explicit measures were correlated. Bivariate correlational analyses revealed low correlations between the IAT and the two explicit measures (see Table 3). This suggests that there was a clear dissociation between responses that emerged on the implicit level and those that were reported on the explicit level. Additionally, the two explicit measures were significantly correlated, suggesting that greater endorsement of the belief that ‘Americans of European descent are more American than Americans of Asian descent’ was related to participants rating White Americans as being more strongly linked to America (and all things American) than Asian Americans.

**Table 3. Bivariate Correlations Between Implicit and Explicit Measures**

<table>
<thead>
<tr>
<th></th>
<th>IAT D Score</th>
<th>Independent Measure</th>
<th>Comparative Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAT D Score</td>
<td>--</td>
<td>.011**</td>
<td>-.003</td>
</tr>
<tr>
<td>Independent Measure</td>
<td>.011**</td>
<td>--</td>
<td>.540</td>
</tr>
<tr>
<td>Comparative Measure</td>
<td>-.003</td>
<td>.540</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note: **. Correlation is significant at the 0.01 level (2-tailed).*

**MULTILEVEL MODEL ANALYSES**

To model the relationship between environmental diversity and implicit and explicit ethnic-American associations, we used multilevel modeling, also referred to as HLM (Bryk & Raudenbush, 1992). Multilevel modeling allows us to examine variables at multiple levels of analysis in a series of regression equations. In the current work, we are interested in examining how an individual’s implicit and explicit ethnic-American associations are influenced by characteristics of the individual as well as characteristics of the individual’s environment. Therefore, the first level of analysis included individuals’ implicit and explicit ethnic-American associations as well as the following individual level demographic information: religiosity, political identification, age, gender, ethnicity, race, and education level. The second level of analysis included diversity indices (i.e., proportion of White
Americans, proportion of Asian Americans, and the Entropy Score index). For each of the hypothesis we outlined in the current work, we first built an unconditional (or null) model as a starting point and then expanded on that model by adding predictors at both levels.

Additionally, it is important to note that since the level-2 predictor was of substantive interest to us (i.e., the effect of environmental diversity), we grand mean centered the level 1 and level 2 predictors (for more information, see Enders & Tofighi, 2007). In short, this method allowed us to control for the effects of level-1 covariates (i.e., demographic variables). Finally, we used HLM 7 (Raudenbush et al., 2011) to analyze the multilevel models.

**Implicit Ethnic-American Associations**

To test our hypotheses outlined in all three of our socio-cognitive perspectives, we first ran the following unconditional means models with implicit ethnic-American associations (i.e., IAT $D$ score) as the outcome:

- **Level-1 Model:**
  \[
  IAT_{ij} = \beta_{0j} + r_{ij}
  \]

- **Level-2 Model:**
  \[
  \beta_{0j} = \gamma_{00} + u_{0j}
  \]

The results indicated that there was a significant non-zero mean IAT score across zip codes ($\gamma_{01} = .368, p < .001$; see Table 4). There are three types of justification for multilevel model analyses: empirical, statistical, and theoretical. The empirical method of determining the need for such an analysis requires calculating the intraclass correlation coefficient (ICC). In the current work, the ICC measures the proportion of variance in implicit ethnic-American associations (level-1 unit) that is accounted for by the diversity indices (level-2 units). We calculated the intraclass correlation coefficient and the result was .057; unfortunately, this value is considered small. However, we can look to another type of justification that is actually considered the most important justification for running multilevel model analyses: theoretical justification (Luke, 2004). We are utilizing a multilevel approach because our hypotheses are based on “constructs operating and interacting at multiple levels” (Luke, 2004). That is, our work is based on the idea that the diversity in an individuals’ environment may be related to the degree to which they include certain ethnic groups in the national identity.
### Table 4. Final Estimation of Fixed Effects (With Robust Standard Errors)

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, β₀</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, γ₀₀</td>
<td>0.367571</td>
<td>0.002175</td>
<td>168.963</td>
<td>12433</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Socio-Cognitive Perspective #1**

The next step in the model building process was to build a conditional model that incorporated the first diversity index at level 2 in order to test our proposed hypothesis: lower proportions of White Americans in a zip code would be correlated with individuals’ displaying lower levels of the American = White effect. Therefore, we built a model that regressed participants’ implicit ethnic-American associations on the proportion of White Americans (i.e., diversity index #1) in their current zip code while controlling for the following individual-level predictors: religiosity, political identification, age, gender, ethnicity, race, education level, and major. The model equations were as follows:

**Level-1 Model:**

\[
\text{IAT}_{ij} = \beta_{0j} + \beta_{1j}*(R\_AWVO_{ij}) + \beta_{2j}*(R\_WVA_{ij}) + \beta_{3j}*(\text{RELIGION}_{ij}) + \beta_{4j}*(\text{POLITICA}_{ij}) + \beta_{5j}*(\text{GENDER}_{ij}) + \beta_{6j}*(\text{AGE}_{ij}) + \beta_{7j}*(\text{EDU5}_{ij}) + \beta_{8j}*(\text{MAJOR}_{ij}) + r_{ij}
\]  
**Level-2 Model:**

\[
\beta_{0j} = \gamma_{00} + \gamma_{01}*(P\_WHI_{ij}) + u_{0j}
\]

\[
\beta_{1j} = \gamma_{10}
\]

\[
\beta_{2j} = \gamma_{20}
\]

\[
\beta_{3j} = \gamma_{30}
\]

\[
\beta_{4j} = \gamma_{40}
\]

\[
\beta_{5j} = \gamma_{50}
\]

\[
\beta_{6j} = \gamma_{60}
\]

\[
\beta_{7j} = \gamma_{70}
\]

\[
\beta_{8j} = \gamma_{80}
\]

The regression coefficient relating the proportion of Whites to IAT D scores was positive and statistically significant (\(\gamma_{01} = .067, p < .001\); see Table 5) suggesting that, on
average across zip codes, after controlling for the level-1 predictor variables, a 1 point
decrease in the proportion of Whites was associated with a .067 point decrease in IAT D
scores. In other words, lower proportions of Whites in a zip code were related to an decrease
in the tendency for participants to implicitly ascribe the American identity more to White
Americans than to Asian Americans. This relationship indicates that, in line with our first
hypothesis, H1a, the relationship between the first diversity index and implicit ethnic-
American associations is such that these two variables changed in the same direction.

Assessing Effect Size
While it is not possible to get a true estimate of effect size for multilevel models, we
were able to calculate interpretable measures of $R^2$. In this context, instead of interpreting $R^2$
as a simple percentage of variance accounted for, we will be interpreting $R^2$ as the
proportional reduction of prediction error. Using Luke (2004) as a guide, we calculated the
$R^2$ for the two models of interest: the random coefficient regression model in this socio-
cognitive perspective and our unconditional model. This allowed us to examine the residuals
for each model and determine which model was the better fit for the data. The results
indicated that by including eight level-1 predictors (racial identity, religiosity, political
orientation, gender, age, education, and major) and one level-2 predictor (diversity index #1: proportion of Whites) in the model for this socio-cognitive perspective, we were able to
improve the predictive validity of the model compared to the unconditional model by
approximately 9.5% to 69%; this can be thought of a small to moderate effect.

Socio-Cognitive Perspective #2
For the second socio-cognitive perspective, we built another conditional model to test
the relationship between implicit ethnic-American associations and the second diversity
index (i.e., the proportion of Asians). Similar to the hypothesis testing we did for the first
socio-cognitive perspective, this model included the following level-1 predictor variables:
religiosity, political identification, age, gender, ethnicity, race, education level, and major.
Table 5. Random Coefficients (RC) Regression Model for Socio-Cognitive Perspective #1

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>0.361758</td>
<td>0.002725</td>
<td>132.778</td>
<td>9639</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>P_WHI, $\gamma_{01}$</td>
<td>0.067340</td>
<td>0.011034</td>
<td>6.103</td>
<td>9639</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RACE_AWVO slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.001598</td>
<td>0.001904</td>
<td>-0.840</td>
<td>24680</td>
<td>0.401</td>
</tr>
<tr>
<td>RACE_WVA slope, $\beta_2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{20}$</td>
<td>0.157893</td>
<td>0.003341</td>
<td>47.256</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RELIGION slope, $\beta_3$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{30}$</td>
<td>-0.001173</td>
<td>0.002758</td>
<td>-0.425</td>
<td>24680</td>
<td>0.671</td>
</tr>
<tr>
<td>POLITICALID slope, $\beta_4$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{40}$</td>
<td>0.009997</td>
<td>0.001614</td>
<td>6.193</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GENDER slope, $\beta_5$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{50}$</td>
<td>-0.002517</td>
<td>0.005042</td>
<td>-0.499</td>
<td>24680</td>
<td>0.618</td>
</tr>
<tr>
<td>AGE slope, $\beta_6$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{60}$</td>
<td>0.001807</td>
<td>0.000235</td>
<td>7.688</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>EDUCATION slope, $\beta_7$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{70}$</td>
<td>-0.022431</td>
<td>0.003433</td>
<td>-6.534</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MAJOR slope, $\beta_8$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{80}$</td>
<td>0.000694</td>
<td>0.000632</td>
<td>1.097</td>
<td>24680</td>
<td>0.273</td>
</tr>
</tbody>
</table>

Note: All of the individual level predictor variables ($R_{AWVO}$, $R_{WVA}$, RELIGION, POLITICALID, GENDER, AGE, EDUCATION, MAJOR) were centered around the grand mean.

Note: The diversity index ($P_{WHI}$) was centered around the grand mean.

Additionally, in line with our proposed hypothesis (H2a), the level-2 predictor variable was the diversity index measuring the proportion of Asians across zip codes. The regression coefficient relating the proportion of Asians in the zip code to IAT D scores was negative and statistically significant ($\gamma_{01} = -0.323$, $p < .001$; see Table 6) suggesting that, on average across zip codes, after controlling for the level-1 predictor variables, a 1 point increase in the proportion of Asians was associated with a .323 point decrease in IAT D scores. Put another way, higher proportions of Asian in a zip code were related to a reduced...
tendency for individuals to ascribe the American identity more to White Americans than to Asian Americans. This is in line with our hypothesis (H2a) that a higher score on this diversity index correlated with a weaker American = White effect. Overall, this finding, which is similar to the finding for the first socio-cognitive perspective, suggests that the diversity in our participants’ environment may be related to their implicit ideas about the national identity.

Assessing Effect Size

Similar to what we did for the first socio-cognitive perspective, we calculated an interpretable \( R^2 \) for this model and then compared it to our unconditional model. The results indicated that by including eight level-1 predictors (racial identity, religiosity, political orientation, gender, age, education, and major) and one level-2 predictor (diversity index #2: proportion of Asians), we were able to improve the predictive validity of the model compared to the unconditional model by approximately 10% to 76%; this can be thought of a small to moderate effect.

SOCIO-COGNITIVE PERSPECTIVE #3

We built a random regression coefficients model testing the relationship between implicit ethnic-American associations and the second diversity index (i.e., the proportion of multiple ethnic groups in the context). The model included the following level-1 predictor variables: religiosity, political identification, age, gender, ethnicity, race, education level, and major. In line with the hypothesis for this socio-cognitive perspective, the level-2 predictor variable was the entropy score index, which measures the presence of White Americans, African Americans, Asian Americans, Multiracial individuals and those who identify with other ethnic groups in a given zip code. The regression coefficient relating the presence of these ethnic groups in a zip code to implicit ethnic-American associations was negative and statistically significant (\( \gamma_{01} = -.073, p < .001; \) see Table 7) suggesting that, on average across zip codes, after controlling for the level-1 predictor variables, a 1 point increase in the entropy index in a zip code was associated with a .073 point decrease in IAT D scores. That is, in line with our third hypothesis (H3a), higher proportions of multiple, distinct ethnic groups in a zip code was associated with a reduced tendency for individuals to implicitly
ascribe the American identity more with White Americans than with Asian Americans. This result is in line with our hypothesis for this socio-cognitive perspective; once again, our data suggest that the characteristics of an individual’s environment may be related to their automatic ideas about which ethnic groups are included in the national identity.

**Table 6. Random Coefficients (RC) Regression Model for Socio-Cognitive Perspective #2**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( \beta_0 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{00} )</td>
<td>0.370851</td>
<td>0.002785</td>
<td>30.084</td>
<td>9639</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>P_ASI, ( \gamma_{01} )</td>
<td>-0.323357</td>
<td>0.024521</td>
<td>-8.245</td>
<td>9639</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RACE_AWVO slope, ( \beta_1 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{10} )</td>
<td>0.001044</td>
<td>0.001878</td>
<td>0.556</td>
<td>24680</td>
<td>0.578</td>
</tr>
<tr>
<td>RACE_WVA slope, ( \beta_2 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{20} )</td>
<td>0.150754</td>
<td>0.003404</td>
<td>44.285</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RELIGION slope, ( \beta_3 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{30} )</td>
<td>-0.002136</td>
<td>0.002749</td>
<td>-0.777</td>
<td>24680</td>
<td>0.437</td>
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<tr>
<td>POLITICALID slope, ( \beta_4 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{40} )</td>
<td>0.009420</td>
<td>0.001611</td>
<td>5.847</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GENDER slope, ( \beta_5 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{50} )</td>
<td>0.000296</td>
<td>0.005040</td>
<td>0.059</td>
<td>24680</td>
<td>0.953</td>
</tr>
<tr>
<td>AGE slope, ( \beta_6 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{60} )</td>
<td>0.001676</td>
<td>0.000234</td>
<td>7.156</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>EDUCATION slope, ( \beta_7 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{70} )</td>
<td>-0.018848</td>
<td>0.003433</td>
<td>-5.490</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MAJOR slope, ( \beta_8 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_{80} )</td>
<td>0.000508</td>
<td>0.000629</td>
<td>0.807</td>
<td>24680</td>
<td>0.419</td>
</tr>
</tbody>
</table>

**Note.** All of the individual level predictor variables (RACE_AWVO, RACE_WVA, RELIGION, POLITICALID, GENDER, AGE, EDUCATION, MAJOR) were centered around the grand mean.

**Note.** The diversity index (P_ASI) was centered around the grand mean.

**Assessing Effect Size**

We calculated an interpretable R² for this model and then compared it to our unconditional model. The results indicated that by including eight level-1 predictors (racial identity, religiosity, political orientation, gender, age, education, and major) and one level-2 predictor (diversity index #3: entropy score index), we were able to improve the predictive
validity of the model compared to the unconditional model by approximately 10% to 71%; this can be thought of a small to moderate effect.

**ADDITIONAL ANALYSES**

**Cross-level Effects**

A benefit of utilizing a multilevel model is that we can test cross-level moderating effects. In the current work, we were interested in examining whether any of the level-1 predictors (i.e., religiosity, political identification, age, gender, ethnicity, race, education level, and major) moderated the relationship between each of the three diversity indices and implicit ethnic-American associations. To test this, we built three models similar to the models above and this time, instead of controlling for the level-1 predictors, we let those variables interact with each of the diversity indices.

Overall, we found several significant interactions for each diversity index. For the first diversity index (i.e., proportion of whites), we found two significant interactions. First, we found that participants’ racial identity moderated the relationship between the proportion of Whites in a zip code and their performance on the IAT ($RACE_{AWvO}$: $\gamma_{11} = -0.02, p = .058; RACE_{WvA}$: $\gamma_{21} = -0.05, p = .008$). Lower proportions of White Americans was related to a lower tendency to exclusively link the American identity with White Americans; this was more true for Asian American and White American participants compared to participants who identified with other ethnic groups. When we compared the Asian American and White American participants directly, we found that this effect was stronger for Asian American participants than White American participants. In other words, compared to White Americans, Asian American participants were especially impacted by this level of diversity and were able to more readily link their ethnic group with the American identity.

For the second diversity index (i.e., proportion of Asians), we found two significant interactions. First, racial identity moderated the relationship between this diversity index and the degree to which participants displayed the American = White effect ($RACE_{AWvO}$: $\gamma_{11}$
Table 7. Random Coefficients (RC) Regression Model for Socio-Cognitive Perspective #3

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $\beta_0$</td>
<td>0.369596</td>
<td>0.002965</td>
<td>124.667</td>
<td>9639</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.073537</td>
<td>0.008068</td>
<td>-9.115</td>
<td>9639</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>DI_ENT slope, $\beta_1$</td>
<td>-0.000977</td>
<td>0.001890</td>
<td>-0.517</td>
<td>24680</td>
<td>0.605</td>
</tr>
<tr>
<td>RACE_AWVO slope, $\beta_2$</td>
<td>0.155796</td>
<td>0.003321</td>
<td>46.909</td>
<td>24680</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>RACE_WVA slope, $\beta_3$</td>
<td>-0.001399</td>
<td>0.002753</td>
<td>-0.508</td>
<td>24680</td>
<td>0.611</td>
</tr>
<tr>
<td>GENDER slope, $\beta_4$</td>
<td>0.009835</td>
<td>0.001613</td>
<td>6.096</td>
<td>24680</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>POLITICALID slope, $\beta_5$</td>
<td>-0.001671</td>
<td>0.005038</td>
<td>-0.332</td>
<td>24680</td>
<td>0.740</td>
</tr>
<tr>
<td>AGE slope, $\beta_6$</td>
<td>0.001732</td>
<td>0.000235</td>
<td>7.362</td>
<td>24680</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>EDUCATION slope, $\beta_7$</td>
<td>-0.020441</td>
<td>0.003439</td>
<td>-5.944</td>
<td>24680</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>MAJOR slope, $\beta_8$</td>
<td>0.000655</td>
<td>0.000631</td>
<td>1.038</td>
<td>24680</td>
<td>0.299</td>
</tr>
</tbody>
</table>

Note. All of the individual level predictor variables (RACE_AWVO, RACE_WVA, RELIGION, POLITICALID, GENDER, AGE, EDUCATION, MAJOR) were centered around the grand mean.

Note. The diversity index (DI_ENT) was centered around the grand mean.

$= -0.11, p < .001; RACE_WvA: \gamma_21 = 0.14, p < .001)$. For the first racial identity variable, the results suggest that across zip codes, larger proportions of Asian Americans were correlated with lower levels of the American = White effect; the impact of this diversity index was less effective for participants who self-identified as Asian and White American. When we directly compared Asian American and White American participants, we found that this kind of diversity was less effective for White Americans than Asian Americans. Finally, we also found a significant interaction for age ($\gamma_{61} = -0.009, p < .001$). Across zip codes, larger proportions of Asian Americans were correlated with lower levels of the American = White effect; after taking into account the fact that the average age for this sample was 26 years of age, we found that this effect was significantly larger for participants who were one standard
deviation older than 26 years of age compared to participants who were one standard
deviation younger than 26 years of age.

For the entropy score index (i.e., proportion of multiple ethnic groups), we found two
significant interactions. First, similar to the first two diversity indices, racial identity
moderated the relationship between this diversity index and scores on the IAT
\( RACE_{AWvO} \): \( \gamma_{11} = 0.03, p < .001 \); \( RACE_{WvA} \): \( \gamma_{21} = 0.05, p < .001 \). Across zip codes,
larger proportions of multiple ethnic groups was correlated with lower levels of American =
White effect. This effect was less true for Asian American and White American participants.
When we compared these two groups directly, we found that the effect was less true for
White Americans compared to Asian Americans. Finally, similar to the second diversity
index, age moderated the relationship between the third diversity index and IAT
performance. Across zip codes, larger proportions of multiple ethnic groups were correlated
with lower levels of the American = White effect; this effect was significantly larger for
participants who were one standard deviation older than 26 years of age compared to
participants who were one standard deviation younger than 26 years of age.

Modeling All Three Diversity Indices

To examine whether three diversity indices together contributed to explaining a
significant amount of the variance in implicit ethnic-American associations, we ran a model
with all three diversity indices in the model (see Table 8). After running this model, we
examined how much this model reduced prediction error compared to the unconditional
model and the results indicated that by including the three diversity indices at level 2, we
were able to improve the predictive validity of the model by approximately 10% to 77%.

Summary of Implicit Findings

The implicit data revealed several interesting things. For each of the three diversity
indices, we found that when holding individual-level demographic information constant, the
kind of diversity that was present in participants’ zip code was related to their implicit ethnic-
American associations. Interestingly, a higher proportion of Whites (diversity index #1) in a
zip code was correlated with a tendency to automatically equate that national identity more
with White Americans than Asian Americans. In contrast, a higher proportion of Asians in a
Table 8. Random Coefficients (RC) Regression Model with All Three Diversity Indices

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $\beta_0$</td>
<td>0.375024</td>
<td>0.003013</td>
<td>124.474</td>
<td>9637</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.026161</td>
<td>0.015417</td>
<td>-1.697</td>
<td>9637</td>
<td>.090</td>
</tr>
<tr>
<td>$P_{\text{WHI}}$, $\gamma_{01}$</td>
<td>-0.290418</td>
<td>0.027085</td>
<td>-10.722</td>
<td>9637</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>$P_{\text{ASI}}$, $\gamma_{02}$</td>
<td>-0.042691</td>
<td>0.011488</td>
<td>-3.716</td>
<td>9637</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>DI_ENT, $\gamma_{03}$</td>
<td>0.000966</td>
<td>0.001917</td>
<td>0.504</td>
<td>24680</td>
<td>0.614</td>
</tr>
<tr>
<td>HEIGHT, $\beta_1$</td>
<td>0.149816</td>
<td>0.003427</td>
<td>43.719</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HEIGHT, $\beta_2$</td>
<td>-0.002159</td>
<td>0.002749</td>
<td>-0.785</td>
<td>24680</td>
<td>0.432</td>
</tr>
<tr>
<td>HEIGHT, $\beta_3$</td>
<td>0.009359</td>
<td>0.001611</td>
<td>5.809</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HEIGHT, $\beta_4$</td>
<td>0.000550</td>
<td>0.005039</td>
<td>0.109</td>
<td>24680</td>
<td>0.913</td>
</tr>
<tr>
<td>HEIGHT, $\beta_5$</td>
<td>0.001644</td>
<td>0.000235</td>
<td>7.000</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HEIGHT, $\beta_6$</td>
<td>-0.018034</td>
<td>0.003448</td>
<td>-5.230</td>
<td>24680</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Note. All of the individual level predictor variables ($RACE_{AWVO}$, $RACE_{WVA}$, RELIGION, POLITICALID, GENDER, AGE, EDUCATION) were centered around the grand mean.

Note. All three diversity indices ($P_{\text{WHI}}$, $P_{\text{ASI}}$, DI_ENT) were centered around the grand mean.

Zip code (diversity index #2) and a higher proportion of multiple ethnic groups (diversity index #3) were correlated with a lower tendency to attribute the national identity solely with White Americans.

For the cross level interactions, the most interesting findings that emerged were around racial identity. Specifically, we found that across all three diversity indices, racial identity moderated the relationship between diversity and implicit ethnic-American associations. Lower proportions of White Americans were associated with a weaker tendency to implicitly ascribe the national identity more to White Americans than Asian Americans. Interestingly, this was stronger for Asian and White American participants and when we compared these two groups directly with each other, the effect of this diversity index was
stronger for Asian Americans. For the second diversity index, larger proportions of Asian Americans were correlated with lower levels of the American = White effect; the impact of this diversity index was less effective for participants who self-identified as Asian and White American. When we directly compared Asian American and White American participants, we found that this kind of diversity was less effective for White Americans than Asian Americans. For the third diversity index, an increase in multiple ethnic groups was associated with lower levels of the American = White effect for participants who self-identified with other racial categories. Put another way, this impact of this diversity index was weaker for Asian and White American participants; when we compared these two groups, we found that this effect was weaker for White American participants compared to Asian American participants. These findings paint a nuanced picture of the relationship between diversity and implicit ethnic-American associations and we will be engaging with the broader implications of these findings in our discussion.

**Explicit Ethnic-American Associations**

The multilevel analyses for the explicit ethnic-American data tested whether participants’ explicit associations about the degree to which our two target groups (i.e., White and Asian Americans) were associated with the national identity was related to the levels of diversity in their environment. The analyses was similar to the analyses for our implicit ethnic-American data in that we first built unconditional means models and then expanded on those models by adding predictors at both levels. The following sections go over the results for each of three explicit measures for each socio-cognitive perspective. As a refresher, the three explicit measures were the independent rating measure, the comparative rating measure and finally, the measure assessing endorsement of soft boundaries. The independent rating asked participants indicate the extent to which they considered White Americans, Asian Americans, Black Americans and Native Americans to be American. The comparative rating asked participants to indicate a response that best described their belief about the extent to which they considered descendants of both groups to be American. For the third explicit measure, participants indicated the degree to which they indicated their agreement or disagreement with the following items as criteria that could be used to determine a ‘true’ American: ‘Vote in elections’, ‘Feel American, ‘Defend America when it is criticized’, ‘Be
patriotic’, and ‘Respect America’s political institutions and laws’. Finally, in contrast with the section for the implicit data, we presented the data for the explicit measures in a single table following the text.

**SOCIO-COGNITIVE PERSPECTIVE #1**

**Independent Rating**

An unconditional means model with the independent rating difference score as the outcome indicated that there was a significant non-zero mean rating across zip codes ($\gamma_{01} = 1.12, p < .001$) suggesting that, on average, when individuals independently rated the extent to which they perceived White Americans and Asian Americans as identified with American and all things American, they rated White Americans as embodying the national identity more than Asian Americans. A random coefficient regression model incorporating the following level-1 predictor variables: religiosity, political identification, age, gender, ethnicity, race, and education level was used to examine the relationship between the comparative rating outcome and the diversity index measuring the proportion of Whites (as the level-2 predictor). After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of Whites to the extent to which individuals independently rated White Americans and Asian American as American was not significant ($\gamma_{01} = .057, p = .091$; see Table 9). This result, which is not in line with our hypothesis (H1b) for this measure, indicates that when controlling for individual-level demographic information, the relationship between the proportion of Whites in a zip code and participants’ implicit ethnic-American associations about White and Asian Americans became non-significant.

**Comparative Rating**

An unconditional means model with the comparative rating of perceived Americaness as the outcome indicated that there was a significant non-zero mean rating across zip codes ($\gamma_{01} = .717, p < .001$), suggesting that on average, individuals considered Americans of European descent to be slightly more American than Americans of Asian descent. A random coefficient regression model incorporating the following level-1 predictor variables: religiosity, political identification, age, gender, ethnicity, race, and education level was used to examine the relationship between the comparative rating outcome and the
diversity index measuring the proportion of Whites (as the level-2 predictor). The regression coefficient relating the proportion of Whites in a zip code to the comparative rating of perceived Americanness was positive and marginal ($\gamma_{01} = .055, p = .031$; see Table 9) suggesting that, on average across zip codes, after controlling for the level-1 predictor variables, a 1 point increase in the proportion of Whites in a zip code was associated with a .055 point decrease in the comparative rating measure. In other words, in contrast to what we predicted for this explicit measure (H1b), higher proportions of Whites in a zip code were related to an increased tendency for individuals endorse the idea that Americans of European descent are more American than Americans of Asian descent.

**Endorsement of Soft Boundaries**

An unconditional means model with the soft boundary composite measure as the outcome indicated that there was a significant non-zero mean rating across zip codes ($\gamma_{01} = 6.07, p < .001$) suggesting that, on average, individuals moderately agreed with statements that endorsed softer criteria of determining Americanness (i.e., vote in elections, be patriotic, and feel American). To examine the relationship between endorsement of such criteria and the diversity index measuring the proportion of Whites (as the level 2 predictor), a random coefficient regression model incorporating the following level-1 predictor variables: religiosity, political identification, age, gender, ethnicity, race, and education level, was tested. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of Whites to the extent to which individuals endorsed soft boundary criteria for the American identity was not significant ($\gamma_{01} = .089, p = .514$; see Table 9). This suggests that, in contrast to what we predicted for this measure (H1c), the proportion of Whites in an individual’s zip code was not related to their ideas about the boundaries of the national identity.
### Table 9. Random Coefficients (RC) Regression Models for Explicit Ethnic-American Associations

<table>
<thead>
<tr>
<th>Diversity Index #1: Proportion of Whites</th>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Rating</td>
<td>INTRCPT1, $\beta_0$</td>
<td>1.135310</td>
<td>0.008633</td>
<td>131.516</td>
<td>9635</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>0.056704</td>
<td>0.033536</td>
<td>1.691</td>
<td>9635</td>
<td>.091</td>
</tr>
<tr>
<td></td>
<td>P_WHIL, $\gamma_{01}$</td>
<td>0.056704</td>
<td>0.033536</td>
<td>1.691</td>
<td>9635</td>
<td>.091</td>
</tr>
<tr>
<td>Comparative Rating</td>
<td>INTRCPT1, $\beta_0$</td>
<td>0.729746</td>
<td>0.006712</td>
<td>108.730</td>
<td>9360</td>
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<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>0.059874</td>
<td>0.026870</td>
<td>2.228</td>
<td>9360</td>
<td>.026</td>
</tr>
<tr>
<td></td>
<td>P_WHIL, $\gamma_{01}$</td>
<td>0.059874</td>
<td>0.026870</td>
<td>2.228</td>
<td>9360</td>
<td>.026</td>
</tr>
<tr>
<td>Endorsement of Soft Boundaries</td>
<td>INTRCPT1, $\beta_0$</td>
<td>6.557932</td>
<td>0.037071</td>
<td>176.904</td>
<td>9608</td>
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</tr>
<tr>
<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>0.072951</td>
<td>0.144873</td>
<td>0.504</td>
<td>9608</td>
<td>0.615</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Diversity Index #2: Proportion of Asians</th>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Rating</td>
<td>INTRCPT1, $\beta_0$</td>
<td>1.134903</td>
<td>0.008979</td>
<td>126.402</td>
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<tr>
<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.087188</td>
<td>0.072525</td>
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<td>9635</td>
<td>0.229</td>
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<tr>
<td></td>
<td>P_ASI, $\gamma_{01}$</td>
<td>-0.087188</td>
<td>0.072525</td>
<td>-1.202</td>
<td>9635</td>
<td>0.229</td>
</tr>
<tr>
<td>Comparative Rating</td>
<td>INTRCPT1, $\beta_0$</td>
<td>0.730964</td>
<td>0.007032</td>
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<tr>
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<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.124525</td>
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<td>P_ASI, $\gamma_{01}$</td>
<td>-0.124525</td>
<td>0.058213</td>
<td>-2.139</td>
<td>9360</td>
<td>0.032</td>
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<td>Endorsement of Soft Boundaries</td>
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<tr>
<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.552867</td>
<td>0.282668</td>
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<table>
<thead>
<tr>
<th>Diversity Index #3: Entropy Score</th>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx d.f.</th>
<th>p-value</th>
</tr>
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<td>119.930</td>
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<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.012500</td>
<td>0.025383</td>
<td>-0.492</td>
<td>9635</td>
<td>0.622</td>
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<tr>
<td></td>
<td>DI_ENT, $\gamma_{01}$</td>
<td>-0.012500</td>
<td>0.025383</td>
<td>-0.492</td>
<td>9635</td>
<td>0.622</td>
</tr>
<tr>
<td>Comparative Rating</td>
<td>INTRCPT1, $\beta_0$</td>
<td>0.725730</td>
<td>0.007446</td>
<td>97.471</td>
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<td>&lt;0.001</td>
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<tr>
<td></td>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.005470</td>
<td>0.020095</td>
<td>-0.272</td>
<td>9360</td>
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</tr>
<tr>
<td></td>
<td>DI_ENT, $\gamma_{01}$</td>
<td>-0.005470</td>
<td>0.020095</td>
<td>-0.272</td>
<td>9360</td>
<td>0.785</td>
</tr>
<tr>
<td>Endorsement of Soft Boundaries</td>
<td>INTRCPT1, $\beta_0$</td>
<td>6.574009</td>
<td>0.040911</td>
<td>160.691</td>
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<tr>
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<td>INTRCPT2, $\gamma_{00}$</td>
<td>-0.117236</td>
<td>0.108056</td>
<td>-1.085</td>
<td>9608</td>
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SOCIO-COGNITIVE PERSPECTIVE #2

Independent Rating

To examine the relationship between individuals’ independent ratings of the extent to which they perceived White Americans and Asian Americans as American and the diversity index measuring the proportion of Asians, we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor variable as the proportion of Asians. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of Asians in the zip code to the extent to which individuals independently rated White Americans and Asian American as American was not significant (γ01 = -0.03, p = .693; see Table 9). In contrast to what we predicted (H2b), this finding revealed that once we controlled for individual-level predictors, the presence of Asian Americans in a zip code was not related to participants’ explicit ideas about the degree to which they perceived the two target groups as American.

Comparative Rating

To examine the relationship between the comparative rating outcome and the diversity index measuring the proportion of Asians, we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor variable as the proportion of Asians. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of Asians to the comparative rating of perceived Americanness was not significant (γ01 = -0.10, p = .075; see Table 9). The results for this measure were not in line with what we predicted (H2a).

Endorsement of Soft Boundaries

To examine the relationship between individuals’ endorsement of soft boundary criteria and the diversity index measuring the proportion of Asians, we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor
variable as the proportion of Asians. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of Asians in the zip code to the extent to which individuals endorsed soft boundary criteria for the American identity was negative and marginally significant ($\gamma_{01} = -.58, p = .05$; see Table 9), suggesting that, on average across zip codes, a 1 point increase in the proportion of Asians in a zip code was associated with a .58 point decrease in the endorsement of soft boundary criteria in determining Americanness. In contrast to our prediction (H2c), higher proportions of Asians in a zip code were related to a decreased tendency for individuals to endorse criteria such as feeling American, being patriotic, and voting in elections when determining what qualities make a person a true American.

**Socio-Cognitive Perspective #3**

**Independent Rating**

To examine the relationship between individuals’ independent ratings of the extent to which they perceived White Americans and Asian Americans as American and the diversity index measuring the proportion of multiple ethnic groups (i.e., White Americans, African Americans, Asian Americans, Multiracial, and Other), we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor variable as the entropy score index. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of multiple ethnic groups in the zip code to the extent to which individuals independently rated White Americans and Asian American as American was not significant ($\gamma_{01} = .007, p = .765$; see Table 9). This finding did not support our prediction (H3b).

**Comparative Rating**

To examine the relationship between the comparative rating outcome and the diversity index measuring the proportion of multiple ethnic groups (i.e., White Americans, African Americans, Asian Americans, Multiracial, and Other), we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor variable as the
entropy score index. After controlling for the level-1 predictor variables, the regression coefficient relating the proportion of multiple ethnic groups in a zip code to the comparative rating of perceived Americanness was not significant ($\gamma_{01} = -0.003, p = .865$; see Table 9). This finding was also not in line with what we predicted (H3b).

**Endorsement of Soft Boundaries**

To examine the relationship between individuals’ endorsement of soft boundary criteria and the diversity index measuring the proportion of multiple ethnic groups, we ran a random coefficient regression model with the level-1 predictor variables as religiosity, political identification, age, gender, ethnicity, race, and education level and the level-2 predictor variable as the proportion of Asians. In contrast to our prediction (H3c), after controlling for the level-1 predictor variables, the regression coefficient relating the proportion of multiple ethnic groups in a zip code to the extent to which individuals endorsed soft boundary criteria for the American identity was not significant ($\gamma_{01} = -0.13, p = .23$; see Table 9).

**Summary of Explicit Findings**

In contrast with what we found on the implicit level, our multilevel analyses of the explicit data revealed very little in terms of a link between diversity and explicit ethnic-American associations. For the first diversity index, the proportion of Whites in a zip code, the only finding that was noteworthy was for the comparative measure and that was a marginal effect. Specifically, the data suggested that a higher proportion of Whites in a zip code was related to participants’ explicitly considering White Americans to be more American than Asian Americans. For the second diversity index, the proportion of Asians in a zip code, the only significant finding was for the endorsement of soft boundaries such that higher proportion of Asians in a zip code was related to higher endorsements of the soft boundary criteria in determining a true American. Finally, for the third diversity index, the proportion of multiple ethnic groups in a zip code, we found no significant results. Although we didn’t find any significant correlations between the diversity in a participant’s environment and their explicit ethnic-American, this information adds to the overall picture that has emerged from this project; we will discuss this in depth in our discussion.
CHAPTER 4

DISCUSSION

OVERALL SUMMARY

Compared to a few decades ago, the U.S. is quickly becoming even more multiethnic and multicultural. These shifts have been accompanied by a continued debate about how to best construct a cohesive national identity in this increasingly diverse country. The balance between ethnic and national identities is an important part of this conversation and while some endorse a perspective that focuses on national identity, others advocate for an approach that makes space for both national and ethnic identities. The current work was concerned with a particular question related to this broader discussion: is the increasingly diverse contexts in which Americans are now living, working and/or going to school in, correlated with their ideas about the interrelationships between ethnic and national identities? More specifically, is environmental diversity related to the degree to which individuals implicitly ascribe the national identity to Asian and White Americans?

The multilevel analyses for the implicit data revealed that each of the three diversity indices were related to implicit associations about the national identity such that, over and above religiosity, political identification, age, gender, ethnicity/race, education level, and major, individuals whose current zip codes were characterized by low proportions of Whites, high proportions of Asians, or high proportions of multiple ethnic groups (i.e., White, Black, Hispanic, etc.) had a lower tendency to implicitly view White Americans as more American than Asian Americans. It is important to highlight that we found these results when we controlled for individual-level demographic variables known to influence people’s intergroup perceptions.

For the cross-level analyses, we had some very interesting results. Across the three socio-cognitive perspectives, racial identity moderated the relationship between diversity and implicit ethnic-American associations. For the first diversity index, lower proportions of
White Americans was correlated with a lower tendency to implicitly ascribe the national identity more with Asian Americans; the impact of this diversity was more true for Asian Americans.

In contrast, for the second and third diversity index, higher proportions of Asian Americans and higher proportions of multiple ethnic groups was associated with lower levels of the American = White effect for participants who self-identified with other racial categories compared to those who identified as Asian and White American. Put another way, the contextual effect of diversity was weaker for Asian and White American participants. When we compared these two groups directly, we found that the contextual effect of this diversity index was weaker for White American participants than Asian American participants. If we think about the differences between these two diversity indices and the first diversity index, the finding becomes less surprising. That is, the second and third diversity indices are captured through an increased presence of ethnic minority groups. We can link this finding to research that shows that being around individuals from other ethnic groups or being immersed in diverse settings may sometimes serve a source of threat for White Americans, who are and continue to be a high status group in this country. For example, there is recent work that shows that when White individuals were told about the shifting ethnic demographics in the U.S., and more specifically, that they would no longer be the majority group by the year 2050, they were much less enthusiastic about endorsing diversity (Danbold & Huo, 2014). Therefore, if White Americans feel that their American identity is threatened in diverse contexts, it makes sense that these kinds of environmental diversity would have less of an impact in weakening their tendency to implicitly link the national identity more with their ethnic group.

The fact that racial identity moderated the relationship between diversity and implicit ethnic-American associations brings up an important question: does this mean our main effect is not very meaningful? Given that we found that racial identity interacted with all three of our diversity indices in some manner, we believe that the moderation effects we found are indicative of the nuanced relationship between our predictor variables and our outcome variable. Additionally, it is important to conceptualize these moderating effects in the context of the socio-cognitive perspectives we proposed as the beginning of this work. One underlying idea that can be extracted is that what is happening with the out-group seems
to be a significant source of variation. Specifically, we can argue that for the first diversity index, Asian American respondents were more impacted by the presence, or lack of, White Americans (i.e. the out-group) whereas for the second and third diversity index, White Americans were more impacted by the presence of other ethnic out-groups. This idea supports the social cognition research on the impact of exemplars on individuals’ judgment: the presence of other ethnic groups may be linked to individuals’ cognitive processes. The moderating effects we found highlight the variations in those cognitive processes as a function of ethnic identity. Finally, these findings highlight the importance of utilizing multiple definitions of diversity; by utilizing a socio-cognitive framework to really flesh out the possible cognitive and environmental processes co-occurring for individuals, we were able to capture different and highly illuminating effects.

We also tested a model with all three of the diversity indices as predictors and found that this model did not explain significantly more variance in implicit ethnic-American association compared to the models with each of the diversity indices entered independently of each other. What is important to note here is that the first diversity index (i.e., proportion of Whites) and the third diversity index (i.e., entropy score index) were highly correlated ($r = -.703$). Although that correlation is not large enough to be considered multicollinearity, it is large enough to think carefully about what unique parts of those two diversity indices mean.

In contrast to the results for the implicit data, the results of the multilevel analyses of the explicit data revealed very little in terms of significant relationships between our explicit measures and the diversity in participants’ current zip code. For the comparative rating measure where participants were asked to compare Americans of European descent and Americans of Asian descent on their degree of “Americanness”, the diversity index measuring the proportion of Whites in was the only one that had significant results: beyond an individuals’ levels of religiosity, political identification, age, gender, ethnicity/race and education level, higher proportion of Whites in a zip code was correlated with higher tendencies for individuals to endorse the idea that Americans of European descent as more American than Americans of Asian descent. For the independent ratings measure where participants were asked to rate each target ethnic group (i.e., White Americans and Asian Americans), we did not find any correlations with any of the diversity indices. Finally, for the composite measure with the soft boundary items, we observed one significant finding.
Specifically, for the diversity index measuring the proportion of Asian Americans, higher proportions of Asian Americans were related to lower endorsements of the soft boundary items; individuals who were immersed in this kind of environments were less likely to endorse flexible criteria in determining Americanness.

Overall, the results for the explicit measures give us an additional piece of information to grapple with and integrate in our larger theoretical framework: why did we observe more significant relationships with the implicit ethnic-American data compared to the explicit ethnic-American data? One reason could be that the validity of the explicit measures was low. However, aside from the soft boundary measure that was created from a longer measure, the other two measures have been used in previous research. Another reason for finding very little movement with our explicit data may be a theoretical one. That is, perhaps we did not find a link between diversity and explicit ethnic-American associations because cognitively, the integration of the kinds of people (i.e., the level or diversity) in one’s environment happens on a more automatic level. In other words, it makes sense from a theoretical perspective that environmental information that we intake automatically is linked to implicit associations we develop about that environment.

The results for the implicit data were in line with previous research that demonstrates that implicit associations are malleable and context-sensitive (Dasgupta & Greenwald, 2001; Wittenbrink et al., 2001). However, in contrast to previous research where features of the environment were experimentally manipulated, this study provides some evidence for the idea that the effects of the amount of ethnic diversity that naturally occurs in an individual’s environment might extend to associations that people hold on a more automatic level. Put another way, the current work supports the idea that one’s environment, even if not made explicit or salient, may have a significant degree of influence the extent to which individuals psychologically grant the national identity to certain ethnic groups.

**LIMITATIONS AND FUTURE RESEARCH**

As with any empirical study, it is also important to consider limitations of the current work when we are interpreting the findings. The biggest limitation of the current work is that it is not causal in nature; nonetheless, the results provide insightful lens into the interaction between one’s immediate environment and one’s ethnic-American associations. Despite this
limitation, the findings are promising and warrant additional investigation. Now that we have some indication of the nature of this relationship, the next steps in this line of work will revolve around understanding the underlying causal mechanisms and importantly, how specific variations in the ethnic composition of the environment, such as increased diversity, might facilitate more inclusive definitions of which ethnic groups are included in the American identity. Moreover, given the structure of our data, it is important to note that it would have been useful to set up a more conservative value for significance testing.

There are additional questions that this line of work can address. For one, it would be interesting to conduct an in depth examination of the degree to which these models that incorporate diversity indices as predictors fit the data and if certain models are a better fit than others in explaining variations in implicit ethnic-American associations. This analysis would give us a better idea of how different kinds of diversity may differentially influence implicit ideas about which ethnic groups are included in the national identity. In terms of examining soft boundaries, the current work did not include a comparison point. More precisely, we did not examine the degree to which participants endorsed soft boundaries compared to more rigid boundaries. Looking at this comparison would give us a more nuanced idea about individuals’ ideas about criteria that determine the boundaries of the national identity.

Future work should also look at differences in length of immersion in zip codes and how that may impact individuals’ implicit and explicit ethnic-American associations. The current work only examined these effects for participants’ current zip code. Therefore, it would be interesting to examine if there are differences between individuals’ current zip code and the zip code where they have lived the longest. It may be the case that we find stronger relationships between contextual diversity and implicit and explicit ethnic-American associations if we used the zip code where participants have resided for most of their lives. In theory, it makes sense that where you have lived the longest may impact and shape your ideas more significantly than your current zip code (which may be different from longest lived zip code). However, it is worth noting that although we only used current zip codes, we did find some interesting and insightful data. This presents another related and intriguing question: to what degree is immersion necessary to impact individuals’ automatic ideas and associations about different groups?
Additionally, it would be interesting to examine the impact that the ethnic make-up of adjacent neighborhood might have on individuals’ conceptions of the national identity. For example, what role do the neighboring zip codes play in the relationships we explored in this thesis? More specifically, what is happening in zip codes that are diverse on the whole, but might be comprised of largely segregated districts? Sociologists have developed excellent indices to capture these variations at different levels of geography and those indices can be incorporated to assess this idea. Finally, future work can also examine the relationship between environmental diversity and implicit and explicit ethnic-American associations for other ethnic groups. The focus of this exploratory study was on White Americans and Asian Americans; given the different socio-historical factors that shape each ethnic community in the US, it is important to investigate what these relationships look like in in other ethnic communities.

CONCLUSION

There are several noteworthy theoretical and methodological approaches we used to explore how environmental diversity is linked to implicit and explicit ethnic-American associations. First, we used a socio-cognitive lens that took into account the individual cognitive level processes as well as the larger contextual processes. That is, we synthesized research examining the malleability of individuals’ cognitive processes as well as research examining the impact of environmental diversity on the individual. By integrating these two areas of work that focus on different levels of influence, we were able to provide a rich framework from which to explore the relationships between environmental diversity and implicit and explicit ethnic-American associations.

In addition to employing a socio-cognitive lens, we also thought extensively about the most theoretically appropriate indices to use in this study; this theoretical inquiry resulted in the adaptation of a sociological diversity index (i.e., entropy diversity index) for one of our diversity measures. This was an important part of the current work because we were interested in closely replicating the diversity that individuals’ in the U.S. may be encountering in their immediate environments. Finally, given the nature of our data as well as the structure of our data, multilevel analyses were the most appropriate way to examine our questions of interest. This work is, to our knowledge, the first study that has used a multilevel
lens to explore how contextual diversity is related to implicit and explicit ethnic-American associations.

Overall, this work has broader implications for intergroup relations in the U.S. The increasingly diverse contexts in which Americans are immersed in can easily be a source of conflict or a source of learning. Interestingly, in contrast to the results for the explicit ethnic-American data, we found more meaningful relationships between the implicit ethnic-American data and environmental diversity. It can be argued that finding this connection between environmental diversity and automatic associations may be even more important than finding a connection between environmental diversity and conscious associations. Since individuals have awareness of their conscious associations and beliefs, it is often easier to focus on shifting those associations and beliefs. However, impacting and changing more automatic associations and beliefs is significantly more difficult and the current work offers us insight into one way we can achieve a more inclusive national identity on a deeper level: by simply being around or in diverse settings, individuals’ associations about other groups may be influenced on an automatic level. Although our work also suggested that the effects of this might differ based on ethnic groups, we want to highlight the significance of the fact that we found a relationship between environmental diversity and implicit ethnic-American association. This link is the first step in exploring the ways in which we can capitalize on the naturally occurring features of our increasingly shifting environments to help facilitate a more inclusive national identity.
REFERENCES


APPENDIX A

EUROPEAN AMERICAN AND ASIAN AMERICAN STIMULI

<table>
<thead>
<tr>
<th>American</th>
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<tbody>
<tr>
<td>Statue of Liberty</td>
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APPENDIX B

EUROPEAN AMERICAN AND ASIAN AMERICAN STIMULI

European American  |  Asian American

[Images of facial stimuli for European American and Asian American]
APPENDIX C

EXPLICIT ETHNIC-AMERICAN MEASURES

Independent Rating Measure

*In your mind, how American are people who belong to the following groups? That is, how strongly are they identified with America and all things American?*

- White Americans
- Asian Americans
- Black Americans
- Native Americans

Comparative Rating Measure

*Which response best describes your belief?*

- I consider Americans of European descent to be much more American than Americans of Asian descent
- I consider Americans of European descent to be more American than Americans of Asian descent
- I consider Americans of European descent to be slightly more American than Americans of Asian descent
- I consider Americans of European and Asian descent to be equally American
- I consider Americans of Asian descent to be slightly more American than Americans of European descent
- I consider Americans of Asian descent to be more American than Americans of European descent
- I consider Americans of Asian descent to be much more American than Americans of European descent

Soft Boundary Measure

*Some people say that there are certain qualities that make a person a true American. Please rate your agreement or disagreement with each statement. To be a true American, it is important to:*

- Vote in elections.
- Defend America when it is criticized.
- Feel American.
- Respect America's political institutions and laws.
- Be patriotic.