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Who is Credible (and Where)? Using Virtual Reality to Examine Credibility and Bias of Perceived Race/Ethnicity in Urban/Suburban Environments

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ABSTRACT

This study evaluates perceptions of race/ethnicity in connection to geography of urban/suburban neighborhoods. The study takes place in a region mostly populated by people identifying as Hispanic, which is reflected in the participant demographics. Before answering the survey questions, the study used Virtual Reality to immerse participants into the scene, and to develop a more realistic experience. Results indicated that perceptions of geography have a greater impact than perceptions of race/ethnicity in terms of assumed credibility. These results challenge stereotypes that are created and commonly perpetuated in our society.

KEYWORDS

Credibility; geography; perception bias; race; suburban; urban; virtual reality

In this study, researchers examined racial bias with a specific emphasis on perceptions of race and geography among Hispanics and non-Hispanics in Miami-Dade County of Florida, where 70% of the population identifies as Hispanic (U.S. Census Bureau, 2017). Our focus comes from a need for more research on Hispanic populations (Arias & Hellmueller, 2016), particularly in terms of relations between Hispanic and non-Hispanic populations, and in terms of perceptions related to the types of neighborhoods in which they live. Therefore, this study attempts to further relevant research related to bias, race, and communication (Liu et al., 2017; Pan, Zhou, & Thompson Hayes, 2017; Shulman, Collins, & Clément, 2011). Research suggests that there is a social perception connecting crime with minority groups (Chiricos, McEntire, & Gertz, 2001) as well as with urban neighborhoods (Billingham & Kimelberg, 2018). News media in particular perpetuate this perception, thus reinforcing stereotypes (Löwstedt & Mboti, 2017; Sui & Paul, 2017). Yet, statistically crime is more heavily connected to social-economic factors (Entman & Gross, 2008; Pickett, Chiricos, Golden, & Gertz, 2012; Quillian & Pager, 2001), rather than any racial/ethnic groups or neighborhoods populated mainly by minorities.

These false connections or stereotypes impact perceptions of credibility in different communication contexts, from social interactions to public and political decisions (Spence, Lachlan, Westerman, & Spates, 2013). Credibility is the perceived

trustworthiness of the communicator or information source. In this study, researchers analyzed assumptions of credibility regarding perceptions of race/ethnicity as well as the influence of urban and suburban neighborhoods. We conducted our study within the framework of Social Identity Theory, which allowed us to question perceptions of race/ethnicity with a participant pool, the majority of whom identified as Hispanic.

To do so we utilized virtual reality, which allowed participants to interact in environments that mimicked “real life” and which could assist in examining users’ emotional reactions, social behavior, and cognitive and affective responses to stimuli (Bargh, Chen, & Burrows, 1996; Bishop & Rohrmann, 2003; Devlin, 2008; Friedrich, 2016; Hall, 1976; Ulrich, 1986; Salmanowitz, 2016). In this case, virtual reality provided our participants with the opportunity to immerse themselves in the scene, and to have a more realistic experience before answering the survey questions. Hence, we utilized virtual reality to obtain responses that portray more accurate perceptions comparable to reality.

Social identity theory

Social Identity Theory, introduced by Henri Tajfel (1978), Tajfel and Turner (1979, 1986), proposes that individual social identity is shaped through group identification, a source of pride and self-esteem which the individual uses to build a positive self-concept. In order to maintain the positive self-image and to protect self-identity, in-group members are evaluated in a more positive manner, as “[i]n-group members protect their own self-esteem by showing favoritism and leniency towards other in-group members, despite their transactions” (Hawley, Hosch, & Bovaird, 2014, p. 61). In-group favoritism arises as a result of members’ need to distinguish themselves from out-group individuals (Tajfel & Turner, 1979; Wang, Zheng, Meng, Lu, & Ma, 2016).

Discriminating and stereotyping out-group individuals are also among the realm of strategies used to protect the self-image of in-group members. According to Tajfel (1978), Tajfel and Turner (1979), discrimination of outsiders is perpetuated through social categorization (Hawley et al., 2014; Hogg & Terry, 2000; Tajfel, 1982). When categorizing, in-group members (us) adopt the identity of the group and distinguish themselves from outsiders (them) through intergroup comparisons and stereotyping. In other words, “if belonging to a certain group makes individuals feel good about themselves, maintaining affiliation with that group and preserving its positive evaluation compared to other groups will be very important to them” (Shinnar, 2008, p. 554). For example, researchers found that Mexican immigrants in the United States cope with negative social identity perceptions and negative group identification through in-group versus out-group differentiation strategies (Brown, 2000; Shinnar, 2008).

Social Identity Theory is consistent with research on the “Black sheep effect.” This theory demonstrates that the negative behavior of in-group members is judged in a more negative manner and receives harsher treatment than outsiders committing the same actions (Marques, Yzerbyt, & Leyens, 1988). The difference in judgement and treatment is a response to the perception of seeing the deviant members as violating specific norms and consequently impacting group and individual identities (Marques et al., 1988; Marques, Abrams, Paez, & Hogg, 2001). For example, one study reported that disruptive in-group members were evaluated in a harsher manner by their in-group

peers (Marques & Paez, 1994), while another study demonstrated the black sheep effect by showing that non-cooperative in-group members were more severely punished than out-group individuals (Shinada Yamagishi, & Ohmura, 2004).

Thus, Social Identity Theory demonstrates a bias for the familiar, or the in-group members, and the out-group individuals. In-group/out-group borders are determined through cultural identifiers such as race, ethnicity, religion, regionality, and gender. Race, for example, is a cultural identifier, which is associated with strong bias determinants.

Racial bias and intercultural communication

Racial/ethnic prejudice influences communication between members belonging to different cultural groups (Gorodzeisky & Semyonov, 2017; Ramasubramanian, 2013). Research in this area indicates the presence of racial/ethnic bias in various aspects, from language used in sports (Ferrucci, Tandoc, Jr., Painter, & Leshner, 2013) and bias toward and against racial groups in politics (Gorodzeisky & Semyonov, 2017) to prejudice in everyday interactions (Meadors & Murray, 2014). These biases are socially constructed through everyday discourse perpetuated through the context of communication from interpersonal to mass communication, which is the media (Löwstedt & Mboti, 2017; Sui & Paul, 2017), including new media (Shuter, 2012). Research shows that media influences people's perceptions of each other (Gorodzeisky & Semyonov, 2016). These perceptions lead to various presumptions, such as more positive attributions to those they deem familiar (Zebrowitz, Bronstad, & Lee, 2007) and more negative perceptions for those they perceive as the other (Weaver, 2007).

Hispanics constitute the largest racial/ethnic minority group within the United States (pewhispanic.org). Yet the group's portrayal among the greater population is both limited and one sided, often influenced by media and popular discourses focusing on members of the group who may be associated with crime and other negative stereotypes. Since the media started using the term "Hispanic" in 1994, people perceived to belong to this group have been stereotyped as mostly newcomers, immigrants, or undocumented foreigners, and are prominently portrayed in relation to crime or criminal activity (Arias & Hellmueller, 2016). Indeed, Arias and Hellmueller (2016) found that the media over-represents crime related to minorities, Hispanics and African-Americans in particular, which creates what the authors call "modern racism" (p. 11). Such representation "contribute[s] to the social construction of threat in relation to both minorities" (p. 11). Unquestionably, familiarity impacts perceptions, and consequently plays a pillar role in decreasing stereotyping and prejudice. As Ellison and Powers (1994) demonstrate:

contact, particularly close and sustained contact, with members of different cultural groups promotes positive, tolerant attitudes. By contrast, the absence of such contact is believed to foster stereotyping, prejudice, and ill will toward these groups. (p. 385)

The question raised in this study, therefore, is whether racial bias or prejudice toward Hispanic population fluctuates, positively or negatively, in a Hispanic-majority region of the U.S. Hence, we aim to understand to what degree the race/ethnicity of the information source, as well as the information receiver (participant) impacts the perceived credibility of the information presented. Here, however, we propose that this evaluation of

information is not just built on the perceived race of the person delivering the information or racial self-identification of the information receiver, but also on perceptions of the environment in which the communication takes place. Therefore, in the next section we examine geographic bias.

Examining influences regarding geographic bias

People's interpretation of the environment impacts their notions of credibility and believability in various communication processes from interpersonal interactions to mass media messages such as new stories shared in that space (Knapp, Hall, & Horgan, 2014). Furthermore, researchers have widely investigated the relationship between environment and perceived characteristics of credibility in relationships with intercultural attributions of different cultural groups (Hoehner, Brennan Ramirez, Elliott, Handy, & Brownson, 2005; Quillian & Pager, 2001; Schwartz & Halegoua, 2015). Research suggests perceptions of environment influence attributions to those within these environments (Bargh et al., 1996; Higgins, 1987; Perdue & Gurtman, 1990; Pratto & Bargh, 1991).

Similarly, locations, environments, and related visual stereotypes (an individual's attire or a neighborhood's appearance) influence social behaviors regarding members of the perceived group (Bargh, 2006; Peña & Blackburn, 2013). Neighborhoods that are perceived to lack upkeep, for instance, can result in a negative perception of the environment's safety and the residents' credibility (French et al., 2014; Knapp et al., 2014).

Research also shows that some socioeconomic and cultural groups are socially underprivileged and are more vulnerable to be victimized, which explains the correlation between race/ethnicity and fear of crime (Covington & Taylor, 1991; Liska, Sanchirico, & Reed, 1988; Luo & Zhao, 2017). For example, in Miami-Dade County, Hispanics reported the highest level of fear of crime in comparison with Whites and Africans Americans (Eitle & Taylor, 2008). Similarly, previous research data from New York City on fear of crime and race/ethnicity found that Hispanics respondents reported highest levels of fear of crime (Parker, McMorris, Smith, & Murty, 1993). Fear of crime originates from the Hispanics' precipitations on their level of safety (Parker et al., 1993). In addition, research found that Whites in South Florida were more fearful of crime and viewed minorities as threats because of "the growing presence of blacks and Hispanics" (Chiricos et al., 2001, p. 336). According to the authors (Chiricos et al., 2001), whites report similar perceptions of minorities as threats, however, this fear is magnified in South Florida because of its unique demographics that puts Whites in the position of being minorities. This is significant because fear of crime and feeling threatened produces social withdrawal which "generates animosity in different aspects of social and political life," and leads to inequalities and lowers the social cohesion and neighborhood trust (Bunting et al., 2018, p. 43).

Perceptions of urban neighborhoods are usually connected to negative characteristics, and as consequence, urban spaces are associated with racial and ethnic stigmas (Billingham & Kimelberg, 2018). On the contrary, suburban spaces are usually associated with middle-White class and considered the normative reference group in evaluations against urban institutions such as schools, which contributes to the perpetration of stigmas and stereotypes (Billingham & Kimelberg, 2018; Posey-Maddox, 2014).

Researchers also point out that neighborhood perceptions not only matter at a social level, they have an influence at economic level such as investment and developmental decisions (Billingham & Kimelberg, 2018; Florida, 2015). Authors found that it is problematic to stereotype neighborhood as “the struggling (mostly non-white) city and the prosperous (mostly white) suburb” (Billingham & Kimelberg, 2018, p. 861) due to changing social landscapes of cities through gentrification and relocation of poverty into the suburbs (Billingham & Kimelberg, 2018).

Examining credibility

Social identity theory is interconnected with the notions of stereotyping and perceptions of credibility. Credibility, in this context, is the trustworthiness or believability of the information source. When one is presented with information, perceptions of the source, and their believability, helps determine whether one evaluates this information favorably (Spence et al., 2013).

Stereotyping, then, has a great impact on “perceived source credibility” (Spence et al., 2013, p. 4). Many stereotypes are ingrained in both minority and majority groups (Ferrucci & Tandoc, 2018). Social identity theory argues that people tend to evaluate in-group members more favorably due to a need for a positive self-image. Thus, out-group members are stereotyped more. As Ferrucci and Tandoc (2018) explain, “Because minority groups are so used to being stereotyped themselves, they tend to stereotype more often; these minority groups also tend to strongly identify with positive stereotypes concerning their own in-group” (p. 113).

Thus, in this study researchers aim to understand how perceived race/ethnicity and geographical imagery influence perceptions of credibility. The majority of our participants identified as Hispanic, which provides information about the minority group’s perceptions regarding these notions. Thus, we define credibility as evaluation of information, and evaluation of the source of that information, in a favorable way, along with a tendency to believe the communicator. To this end, we measure pre-conceived assumptions about a person’s credibility because of their race and/or geographical location. In addition, the argument that determining credibility through certain stereotypes is problematic, relative to achieving effective communication and exchange between individuals (Knapp et al., 2014). As a result, for this research, we propose the following hypotheses:

H1: Attitudes toward a neighborhood are correlated with attitudes toward an information source, such that when participants have a negative attitude toward a neighborhood, they will also have a negative attitude toward the information source (person they encounter) in this neighborhood.

H2: When participants have a negative attitude toward a neighborhood, they will perceive the information source (person they encounter) as less credible.

Our third hypothesis incorporates ideas of negative stereotyping and expectations of criminal activity regarding minorities and urban neighborhoods (Carney & Enos, 2019; Harris & Gonzalez, 2012; Ferrucci & Tandoc, 2018). We theorize that negative perceptions of the information source (i.e., when the speaker is a member of a minority

group) compiled with negative expectations of the environment (i.e., expectations of higher criminal activity in urban settings) lead to negative presumptions within the context. Thus, we hypothesize that:

H3: When participants have a negative attitude toward a neighborhood, they will presume that an unseen person, as a subject, is guilty of a crime.

Finally, we wished to see whether, based on the environment and the users' assessment of the source's information credibility, would these participants attempt to identify the race of the suspect without any information?

Our hypotheses examined the perceptions of race/ethnicity and geography interconnectedly. To further explore these issues, we raise two research questions, which analyze race/ethnicity and geography independently from one another. We aim to understand how each concept is contextualized regardless of the other's influence. To that end, we ask:

RQ1: How does the perceived race/ethnicity of the information source, regardless of geography, influence their attributed credibility?

RQ2: How might users envision the race/ethnicity of the unseen suspect who was not identified based on race?

Our study took place in a region where 70% of the population identifies as Hispanic. As previously mentioned, literature suggests that stereotyping and negative attributions toward Hispanics lead to racial prejudice against those who are perceived to be Hispanic (Arias & Hellmueller, 2016). Thus, our first research question was designed to explore the potential for racial bias regarding Hispanics within a majority-Hispanic population.

Our second research question was designed to explore potential racial bias via an unknown/unseen alleged suspect in connection with the race/ethnicity of the information source and the environment where the information was provided. The video in this research, purposefully, did not include any information or indication of the alleged suspect's race/ethnicity. We posed this research question to determine whether the users envision the race/ethnicity of the imagined suspect and if so, how they made this assumption. An attempt was made to determine whether the race/ethnicity of the information source and/or the environment had an impact on this view.

Method

Participants

This analysis was conducted using 248 students from a large southeastern university who either volunteered or were provided extra credit for their participation. The study took place in a Miami-Dade County, Florida region, where the population is approximately 70% Hispanic (U.S. Census Bureau, 2017). Given the racial demographics of the region, the majority of the population sample were self-described as Hispanic/Latino ($n = 163$; 66%), followed by White/Caucasian ($n = 38$; 15%), Black/African-American ($n = 34$; 14%), Asian, Asian-American or Pacific Islander ($n = 8$; 3%), American Indian, Native American or Other ($n = 5$; 2%).

To examine the influence race and neighborhood have on perceptions of witness credibility, we conducted a 2 (race of source: non-Hispanic and Hispanic) x 4 (neighborhood: suburban White, urban White, suburban Hispanic, urban Hispanic) between-subjects experiment. Due to the heavy Hispanic population used in the study, we combined all non-Hispanic participants into one group in order to make comparisons between non-Hispanics and Hispanics. A recent research study (Bunting et al., 2018) on spatial patterns and crime conducted in Miami-Dade County described the region in the following manner: “Miami–Dade is an ethnically diverse county with large, segmented communities of Hispanic and Latino immigrants, as well as sizable black and white populations” (p. 36). The authors added that “Miami–Dade County is particularly suitable as a metropolitan context to study crime patterns that can be generalized to other major U.S. cities, demonstrating the external validity” (p. 36).

We acknowledge that there are many cultural elements to be considered and it might be problematic to combine different cultural groups into one as “non-Hispanic.” However, we are making this choice, consistent with previous research that explored the same populations (Marquine et al., 2015; Guendelman, Nussbaum, Soliday, & Lahiff, 2018; Cater, James, Kidwell, Camp, & Young, 2019).

Instrumentation

In this study, our reference to virtual reality (VR) correlates with increasingly accessible and popular use of 360-by-80 degree video, which users view by using headsets. Studies have used VR to reduce implicit racial bias in courtrooms (Salmanowitz, 2016), while others have utilized it to promote cross-cultural interactions (Grantham O’Brien & Levy, 2008; Hasler & Friedman, 2012) and to reduce prejudice through cross-cultural encounters (Behm-Morawitz, Pennell, & Gerding Speno, 2016). Researchers who use VR as an instrument for understanding attitudes and opinion, do so by measuring users’ reported or observed reactions to the visual environment of the medium and to audible forms (Blascovich et al., 2002). VR could be valuable to use in research to study human-environment interactions because VR-technology mimics real-world environments, allowing highly-detailed observations and accurate behavior measurements (Kuliga, Thrash, Dalton, & Hölscher, 2015), and more realistic responses in comparison with 2D representations (Kuliga et al., 2015). For example, perceptions of fear of crime were examined at railway stations (Cozens, Neale, Whitaker, & Hillier, 2003) using VR technology which allowed to collect data from various points of railway stations.

This medium allows for animation and a variety of storytelling devices with which to interpret participant attitudes and beliefs by transporting users into immersive experiences (Devlin, 2008; Friedrich, 2016; Salmanowitz, 2016). During these immersive experiences, users are able to view and/or interact with various scenes, from animated simulations and natural environments to battle training and other scenarios (Ahn, Fox, Dale, & Avant, 2015; Lemheney et al., 2016). For this study, our use of VR relied on capturing a scenario in which the user was encouraged to follow the communicator to view the environment surrounding her. While the user was not able to communicate with the subject of the video used in this study, users were encouraged to explore the environment by following the communicator as he moved around the user. This

approach enhanced the video's ability to "envelope" the user in a space by supplying a continuous stream of stimuli, such as neighborhood landmarks, vehicles, houses, fences, trees, and other elements (Blascovich et al., 2002). In this study, the video was used to immerse the participant in both urban and suburban environments.

Procedure

Each participant viewed a 45-second 360-degree by 180-degree virtual reality video via Samsung Gear VR headsets. In the video, they were placed outside the scene of an alleged home invasion in a suburban White, urban White, suburban Hispanic, or urban Hispanic neighborhood. The decision to use these neighborhoods was based on the purpose of this study, i.e., to examine the perspectives of Hispanic (largest minority group in the U.S.) and non-Hispanic audiences' attitudes about individuals perceived to be White or Hispanic, and to see the degree to which users may be influenced by their perceptions of the neighborhood from which sources of information are located.

Users were randomly assigned to a neighborhood where a home break-in had occurred. An eyewitness (White or Hispanic) provided the user with a description of the incident and a description of what the suspect was wearing. The eyewitness walks around the user to describe how the suspect moved through the neighborhood after committing the crime. The eyewitness then asks for the participant's help in finding the suspect.

Scripts for each video were identical and were tested among a sample of the population who would be asked to participate in the study to address believability and clarity in the language. Three volunteer actors were selected to portray the witness as either a Hispanic or White man. Researchers took portrait photographs of each man in a white t-shirt and white background and tested how a portion of the possible study population categorized the three men based on race. Of the 37 participants, 78.4 percent indicated that an actor volunteering to portray a white witness was white; 13.5 percent categorized the actor as Hispanic. Regarding the actor who volunteered to portray a Hispanic witness, 72.9 percent of participants categorized him as Hispanic; 18.9 percent categorized him as White.

To select environmental settings for the videos, the same participants viewed images on a paper survey of six local, unidentified neighborhoods. Participants were asked to rank on a scale of 1 to 7 the degree to which they perceived the neighborhoods as safe, welcoming, or as a space they would visit. Researchers selected for the "suburban" setting that which 87 percent of participants (marking between 5 and 7) and 74 percent (marking 6 and 7) categorized as "suburban." Of this location, 80 percent of participants indicated (marking range of between 1 and 3) and 22 percent (marking 1 and 2) indicated that they considered the space to be "safe." Researchers selected for the "urban" setting that which 80 percent of participants (marking 1 to 3) and 54 percent (marking 1 and 2) categorized as "urban. Of this location, 74 percent of participants (marking 5 to 7) and 61 percent (marking 6 and 7) categorized the neighborhood as "unsafe." From this, researchers created videos with the following conditions: White witness/urban neighborhood, White witness/suburban neighborhood, Hispanic witness/urban neighborhood, Hispanic witness/suburban neighborhood over the period of two consecutive days. Actors rehearsed and were guided to maintain as exact as possible similar

voice inflections, movements, and facial expressions to reduce user bias. Each man was dressed in blue jeans and a white t-shirt.

Dependent measures

The dependent measures included users' attitudes about the neighborhood in which a crime allegedly occurred, their overall opinion of the information source, the opinions of those who disliked the source of information, and whether study participants believed that the suspect described by a source they disliked was guilty or innocent of the crime he was alleged to have committed. The dependent variables were measured on a scale from 1 to 9, with higher scores indicating a higher level of agreement with the question being asked. Some scores were reverse-coded when necessary.

To create the dependent variable regarding people's attitudes about the neighborhood, participants answered eight questions. These included how safe the participants perceived the neighborhood to be, whether they would avoid the neighborhood if they could, and if they thought crime was a regular occurrence in the neighborhood. In order to make this variable less susceptible to fluctuations from answers on a single variable, all eight questions were combined into a single item scale upon which a reliability analysis was conducted. The principal component analysis with orthogonal rotation (varimax), showed a level of reliability for the scale ($\alpha = .880$). We used principal component analysis because, even though we only analyzed persons who disliked the information, we were unsure if study participants would dislike the information for the same reasons (e.g., source of the information or that source's neighborhood). Hence, we used this technique to increase the likelihood of capturing the specific effect that was spurring the dislike. The Kaiser-Meyer-Olkin measure verified the use of these items, $KMO = .857$ ("superb," according to Field, 2009), and all of the KMO values were $> .80$, which far exceeded the acceptable limit of $.5$ (Field, 2009).

To create the second dependent variable regarding perceptions of the source of information, we employed a five-item scale combining how honest, friendly, caring, compassionate, and believable they found the source. The scale showed reliability ($\alpha = .715$) and the KMO (.70) was at an acceptable level.

In order to analyze the attitudes of only the users who disliked the source of information, a principal component analysis was conducted on eight items that asked about negative traits regarding the source, including the belief that the person was dishonest, untrustworthy, and dangerous. These were combined to create a single scale item. A reliability test showed an acceptable reliability for this scale ($\alpha = .723$). The Kaiser-Meyer-Olkin (KMO) measure (.78) also validated the use of these items. In addition, an ANOVA was used to answer both research questions, which asked if people's opinions of sources varied by neighborhood and as a function of the study participant. Below, we provide the results from this study.

Results

We first tested users' perceptions of the neighborhood in which a person alleged a crime had occurred. The first hypothesis predicted negative attitudes about the

Table 1. Factors that influence credibility.

Significant effects	<i>F</i>	<i>p</i>
Source's neighborhood	$F(3, 247) = 1.518$	< .022
Source's race	$F(1, 247) = 4.168$	< .043
Neighborhood type	<i>M</i>	<i>SE</i>
Suburban Hispanic	6.09***	.142
Urban Hispanic	3.84***	.165
Non-Hispanic Suburban	4.22	.329
Non-Hispanic Urban	4.08	.278

*** $p < .0001$.

neighborhood would be correlated with users having bad attitudes about sources from these neighborhoods. To examine this relationship, a Pearson's correlation was run, which revealed that having a negative attitude about the neighborhood in which the crime occurred was significantly correlated with having a negative attitude about the person giving information from that neighborhood ($r = .155$, $p < .05$). Therefore, H1 was supported.

Next, we investigated if there was a nesting effect. In other words, we examined whether having a negative attitude about the neighborhood in which the crime occurred also influenced people to perceive sources from these neighborhoods to be less credible (H2). The multi-stage regression shows that users found sources from neighborhoods about which people have negative attitudes to be less credible ($\beta = -.154$, $SE = .042$, $p = < .006$) and less truthful in their account of events ($\beta = -.405$, $SE = .032$, $p < .0001$). Users even believed sources from neighborhoods that they disliked to be dangerous ($\beta = .453$, $SE = .026$, $p < .0001$). This analysis also found that these negative beliefs were compounded by the fact that not only did users distrust information from sources in disliked neighborhoods, but that they were also more likely to believe the suspect described by these sources was guilty of the crime ($\beta = .138$, $SE = .025$, $p < .0001$) he was accused of committing (H3) (Table 1).

The ANOVA revealed users to have more favorable attitudes toward sources from urban neighborhoods $F(3, 247) = 1.518$, $p = .022$, $\eta^2 = .373$. A post-hoc Tukey test showed that study participants believed information coming from a source in a suburban Hispanic neighborhood ($M = 6.09$) was less credible than information given by a source in an urban Hispanic ($M = 3.84$) neighborhood ($p < .0001$). The ANOVA also revealed a main effect for race $F(1, 247) = 4.168$, $p = .043$, $\eta^2 = .527$, indicating that non-Hispanics ($M = 4.89$) believed the source was less credible than did Hispanics ($M = 4.41$). We, however, view this finding with some trepidation due to the small number of non-Hispanics in the sample population and would find making broad statements about non-Hispanics thought on an issue based on this small population specious. Hence, from here we focus most of our discussion on findings from the larger population.

Discussion

Studies focusing on majority-Hispanic populations' perceptions of bias and credibility are scarce in the literature. Our study tested hypotheses drawn from mainstream research. However, these presented under-reported perspectives by exploring a majority-Hispanic population. We aimed to understand to what degree our majority-Hispanic participants'

interpretations of race and environment may influence their perceptions of the credibility of the information they received from a particular source within a particular environment – urban or suburban neighborhoods. The results were as predicted regarding the participants' perceptions and attributions of environments, as evident in the support for our hypotheses. The research questions, on the other hand, yielded implications which present our study's main contribution to literature, since the results were unexpected in terms of racial bias toward information sources perceived to be Hispanic.

Our first hypothesis suggested that participants who have negative attitudes about certain neighborhoods will also have negative attitudes about people in these neighborhoods. Our results supported this hypothesis. Based on previous research, we may assume that the media furthers the perpetuation of some people's dislike for urban/inner-city neighborhoods, and calcifies negative perceptions about such people who live in urban environments. Results supporting our first hypothesis, indicated that when they had a negative perception of the environment, subjects in our study showed a more negative attitude toward the information source. This result, which reiterates previous research, indicates that people are more skeptical about information received from a source associated with a negatively-perceived neighborhood.

Our second hypothesis suggested that when participants have a negative attitude toward a neighborhood, they will perceive information coming from a source in that neighborhood as less credible (e.g., dishonest, untrustworthy, etc.). This hypothesis, too, was supported. Such findings present further concern about the degree to which neighborhoods and individuals from those neighborhoods are aligned in communication about explanations of and for social conditions related to wealth, race, and environmental characteristics. In other words, it may be difficult for some individuals to separate perceptions of people from place, a finding which should be further examined within research.

Our third and last hypothesis suggested that participants who have a negative attitude toward the source of information, will also be more likely to believe the suspect such sources describe is guilty of the crime he is alleged to have committed, even though the alleged suspect is unseen. As explained in the previous section, negative attitudes toward the neighborhood and the information source encouraged the participants to distrust the information they were given. Yet, when asked whether they thought the described suspect was guilty of the crime explained to them, participants were more likely to believe the suspect to be guilty of the alleged crime.

Support for this hypothesis seems to reaffirm blanket stereotypes of "bad neighborhoods" as being home to "bad people." This finding is also troubling in that, in a court of jurisprudence where all persons are presumed guilty until proven otherwise, audiences familiar with certain neighborhoods may presume a purported suspect committed the crime without further evidence, based simply on location. Should this finding be reaffirmed in future studies, it could have negative consequences for both the justice system and people living in neighborhoods deemed as "bad" by persons who evaluate criminal suspects. Future analyses, especially in criminal justice, should investigate this finding further.

Findings from this study support the theories which show that not only do these assumptions have an attitudinal effect, but that this effect also has a geographic component. These beliefs are tethered to certain regions more so than to others. It is telling that, related to specific regions and specific persons, even amongst a largely-Hispanic

sample, we found stereotypical beliefs that the suburbs, regardless of the perceived races/ethnicities of those within the neighborhood, are safer than their urban equivalents. These findings are particularly salient since it suggests that negative stereotypical depictions of Hispanics, especially urban Hispanics and urban Hispanic neighborhoods, have not only permeated the perception of Hispanics but has been endorsed by the group for whom this stereotype is the most harmful.

Even though a common public perception tends to affirm that neighborhoods with high immigrant, ethnic, and racial concentrations have high levels of crime, recent research shows that neighborhoods with mostly Latino immigrants have lower levels of crimes (Lee & Martinez, 2002; Lyons, Velez, & Santoro, 2013; Nielsen, Lee, & Martinez, 2005; Ousey & Kubrin, 2009; Ramey, 2013). Researchers reported that the positive correlation between crime and ethnic/racial diversity might be explained by distrust or lack of familiarity (Bunting et al., 2018; Hooghe & de Vroome, 2016). For example, studies on the correlation between crime and race/ethnic groups performed in South Florida showed that Whites felt threatened by Hispanics and blacks living in close proximity (Chiricos et al., 2001), and that Hispanics felt threatened by the presence of blacks (Putnam, 2007). Future research should examine the degree to which this is the case and, if found in future analyses, perhaps identify the factors that can lead to reversing this belief. This is important because levels of fear and distrust cause individuals to withdraw from their neighborhoods which become more heterogenous, increasing social cohesion (Bunting et al., 2018); at the cost of a multicultural environment. This cultural separation feeds into stereotypes, stigmas, and animosity (Bunting et al., 2018; Putman, 2007).

The research questions guiding our study were designed to explore possible racial bias and its implications. Our first research question asked how the perceived race/ethnicity of the information source, regardless of geography, influence their attributed credibility. As previously mentioned, in this study we questioned whether racial bias or prejudice toward the Hispanic population fluctuates, positively or negatively, in a Hispanic-majority environment. Based on related research, we expected our research question to yield results indicating a more negative attitude toward the information source perceived to be Hispanic. Yet, our results did not indicate any significant differences in attributed credibility or likability between information sources perceived to be Hispanic or non-Hispanic White. To clarify, the participants did recognize race: whether the subjects identified as Hispanic or non-Hispanic White actors accordingly. However, the perceived race of the actor did not have a significant influence on the actor's perceived credibility as much as did the neighborhood. Research indicates an in-group bias should have led to participants identifying as Hispanic and non-Hispanic White to present a more positive attitude toward the information source of their own cultural group. Our results, as mentioned above, demonstrated that a Hispanic source in a suburban neighborhood was found to be more credible by non-Hispanics ($M = 4.89$) than by Hispanics ($M = 4.41$).

We propose that these results yield a number of possible implications. For instance, we need to account for the fact that the general population of the region where the study occurred consists of a population where 70% identify as Hispanic. In addition, the university where the study took place has an equal amount of its population that

identifies as Hispanic. To an extent, one may argue that the non-Hispanic participants still have a certain amount of familiarity with the Hispanic population; hence, they may have a more positive attitude toward the population. At the very least, it could be expected that they would have a less negative attitude than expected toward the study population. However, the same argument cannot be made for the Hispanic population. Familiarity, contrary to previous research, did not produce more positive attitudes. These results contradict the Social Identity Theory, which predicts that in-group members would tend to favor one another, or at the very least see each other in a positive light as a result of a positive self-image.

Consequently, the argument can be made that attitudes toward the neighborhood took precedence over attitudes toward perceived race/ethnicity. Studies reveal that bias may reinforce negative stereotypes of urban environments (Alderman, 1994; Dixon & Linz, 2000; Entman, 1990, 1992; Hill Taylor & Helfenbein, 2009) and that fear of crime in urban environments is perceived at higher levels, specifically urban areas (Quillian & Pager, 2001). Additionally, our perceptions of the environment, and people we associate with it, influence our assumed knowledge (O'Neill, 2001).

Furthermore, we were also struck by the degree to which race was a salient feature of users' understanding of the scenario in which they were placed. This helped answer the second research question, inquiring how users might envision the race/ethnicity of the unseen suspect. While 66% of the users answered that they were "unsure" of the suspect's race (the suspect was only identified by the source of information as being male and wearing jeans and a T-shirt), nearly 16% identified the suspect as non-Hispanic White; roughly 13% identified him as Hispanic; 5% identified the suspect as Black, and less than 1% identified the suspect as 0.40% Asian, Asian-American, or Pacific-Islander.

We do not claim these results to be statistically significant; rather, we provide the information as further evidence that users were mindful of race in terms of the suspect – enough to guess the race. From this study, we propose that at least an ancillary part of the perceptual process involved users' attitudes about the neighborhood in which a crime occurred and users' attitudes about the people in such neighborhoods. In essence, we predicted and found that participants who described a neighborhood as "bad" also believed that they would be more likely to become victims of crime in that neighborhood, that they were more likely to perceive people who live in that neighborhood to be criminals, and to be untrustworthy as well.

Conclusion

This study provides insight into issues of geography and race/ethnicity related to an increasingly important group within the United States and in expanding regions where Hispanics and non-Hispanic Whites live. Although this study did have noteworthy findings, it was not without limitations. Specifically, we acknowledge that there are many cultural elements to be considered and it might be problematic to combine different cultural groups into one as "non-Hispanic." However, we made this choice because our population consisted so heavily of Hispanic-identifying individuals. Thus, our study inadvertently focused specifically on Hispanic perceptions.

Second, this analysis used primarily college-aged students whose opinions could be vastly different from those in the general population. Finally, we examined a relatively small region of the country that was not fairly representative of the general population. Perhaps a future study done on a more diverse, and ethnically more representative population – could yield findings that are more applicable to the U.S. population as a whole, though the focus of this study was to shed further light on perceptions of credibility among and between Hispanic and non-Hispanic populations in urban and suburban environments. Future analyses should be conducted across several other metro areas. These could then be compared to urban/metro areas from different regions.

Beyond these limitations, however, this analysis does present further research in two important ways. First, it uncovered social and environmental contexts that greatly impact attributions of race and/or ethnicity. Thus, researchers studying race and/or ethnicity must consider these components. Cultural studies, media studies, intercultural communication, and similar disciplines further our understanding of race and ethnicity. This study contributes to the literature in several ways described below.

Specifically, when individuals hold negative predispositions about specific environments (i.e., they find them dangerous, violent, etc.), they also hold perceptual baggage regarding their perception of an event that occurs there. They are more likely to believe the source of the information they encounter is untrustworthy, and less credible. Thus, information coming from that source is of dubious value. In the case of a person describing a criminal suspect, that suspect is suspected of being guilty to some degree because of the environment and the information source who described the person committing the crime. This finding can have greater implications, from social encounters to the process of law.

Second, and quite troubling, this effect is especially pronounced on the Hispanic population in urban environments, who are also more likely to live in the proverbial “bad” neighborhoods described as “urban” and thus considered criminal by their own peers. As the literature demonstrates, there is a perceived connection between certain racial/ethnic groups and certain neighborhoods. By focusing on negative portrayals of certain racial/ethnic groups in certain neighborhoods, the media perpetuates this connection. Research shows that there is a higher correlation between crime and socio-economic factors, rather than race/ethnicity. However, the portrayal in the media overwhelmingly connects minorities in urban areas to crime. A take-away from this study, based on these findings, is that although crime can happen anywhere, a good continuation of this project would be to find ways to counter people’s beliefs that certain places are endemic to crime. This could be done by showing positive news about so-called bad neighborhoods, not just reporting on criminal acts. Crime can and does happen everywhere. Since the media does influence people’s attitudes, perhaps by showing both the good and the bad, by showing positive news, the geographic connection will not always be perceived as negative.

Future studies need to explore credibility perceptions in relation to race/ethnicity and geography for various racial/ethnic cultural groups and different geographical settings. For instance, this study utilized a scene connected to an alleged crime, following in the footsteps of literature on geographical context. More studies should be conducted using positive contexts to further understand the difference of perceptions. Additionally, future studies that present a research design including a pretest and post-test assessment can help further scholarly understanding regarding VR-exposure effects.

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References

- Ahn, S. J., Fox, J., Dale, K. R., & Avant, J. A. (2015). Framing virtual experiences: Effects on environmental efficacy and behavior over time. *Communication Research*, 42(6), 839–863. doi:10.1177/0093650214534973
- Alderman, J. D. (1994). Leading the public: The media's focus on crime-shaped sentiment. *The Public Perspective*, 5, 26–27.
- Arias, S., & Hellmueller, L. (2016). Hispanics-and-Latinos and the U.S. media: New issues for future research. *Communication Research Trends*, 35, 4–21.
- Bargh, J. A. (2006). What have we been priming all these years? On the development, mechanisms, and ecology of nonconscious social behavior. *European Journal of Social Psychology*, 36(2), 147–168. doi:10.1002/ejsp.336
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71(2), 230–244. doi:10.1037/0022-3514.71.2.230
- Behm-Morawitz, E., Pennell, H., & Gerding Speno, A. (2016). The effects of virtual racial embodiment in a gaming app on reducing prejudice. *Communication Monographs*, 83(3), 396–418. doi:10.1080/03637751.2015.1128556
- Billingham, C. M., & Kimelberg, S. M. (2018). Identifying the urban: Resident perceptions of community character and local institutions in eight metropolitan areas. *City & Community*, 17(3), 858–882. doi:10.1111/cico.12319
- Bishop, I.D., & Rohrmann, B. (2003). Subjective responses to simulated and real environments: A comparison. *Landscape and Urban Planning*, 65(4), 261–277. doi:10.1016/S0169-2046(03)00070-7
- Blascovich, J., Loomis, J., Beall, A., Swinth, K., Hoyt, C., & Bailenson, J. N. (2002). Immersive virtual environment technology as a methodological tool for social psychology. *Psychological Inquiry*, 13(2), 103–124. doi:10.1207/S15327965PLI1302_01
- Brown, R. (2000). Social identity theory: Past achievement, current problems, and future challenges. *European Journal of Social Psychology*, 30(6), 745–778. doi:10.1002/1099-0992(200011/12)30:6<745::AID-EJSP24>3.0.CO;2-O
- Bunting, R. J., Chang, O. Y., Cowen, C., Hankins, R., Langston, S., Warner, A., ... Roy, S. S. (2018). Spatial patterns of larceny and aggravated assault in Miami-Dade County, 2007–2015. *The Professional Geographer*, 70(1), 34–46. doi:10.1080/00330124.2017.1310622
- Carney, R. K., & Enos, R. D. (2019). Conservatism and fairness in contemporary politics: Unpacking the psychological underpinnings of modern racism. *Scholar.Harvard.edu*, 1–41. Retrieved from https://urldefense.proofpoint.com/v2/url?u=http3A__scholar.harvard.edu_files_renos_files_carneyenos.pdf&d=DwIFaQ&c=lhMMI368wojMYNABHh1gQQ&r=e0rV_5kxSYzCgjXcDIH2iA&m=fDcQ3iAKVXGSwLqjpf1oxjkil0KR4jXimV8_4NEcMMQ&s=oknZke13PcG8KyZJaMVAYYqmUfa91owez26QEC5GOBs&e.=
- Cater, J., James, K., Kidwell, R., Camp, K., & Young, M. (2019). HRM practices and effectiveness: A comparison of US Hispanic and non-Hispanic family firms. *Journal of Small Business and Enterprise Development*, 26(5), 726–746. doi:10.1108/JSBED-12-2018-0364

- Chiricos, T., McEntire, R., & Gertz, M. (2001). Perceived racial and ethnic composition of neighborhood and perceived risk of crime. *Social Problems*, 48(3), 322–340. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=edshol&AN=edshol.hein.journals.socprob48.37&site=eds-live>
- Covington, J., & Taylor, R. B. (1991). Fear of Crime in Urban Residential Neighborhoods: Implications of Between- and Within-Neighborhood Sources for Current Models. *The Sociological Quarterly*, 32(2), 231–249. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.4120959&site=eds-live> doi:10.1111/j.1533-8525.1991.tb00355.x
- Cozens, P., Neale, R., Whitaker, J., & Hillier, D. (2003). Investigating personal safety at railway stations using “virtual reality” technology. *Facilities*, 8(7), 188–194. doi:10.1108/02632770310489936
- Devlin, A. S. (2008). Judging a book by its cover: Medical building facades and judgement of care. *Environment and Behavior*, 40(3), 307–329. doi:10.1177/0013916507302242
- Dixon, T., & Linz, D. (2000). Overrepresentation and underrepresentation of African Americans and Latinos as lawbreakers on television news. *Journal of Communication*, 50(2), 131–154. doi:10.1111/j.1460-2466.2000.tb02845.x
- Eitle, D., & Taylor, J. (2008). Are Hispanics the new “Threat”? Minority group threat and fear of crime in Miami-Dade County. *Social Science Research*, 37(4), 1102–1115. doi:10.1016/j.ssresearch.2008.05.005
- Ellison, C. G., & Powers, D. A. (1994). The contact hypothesis and racial attitudes among black Americans. *Social Science Quarterly*, 75(2), 385–400. Retrieved from <http://search.ebscohost.com.ezproxy.fiu.edu/login.aspx?direct=true&db=edsgao&AN=edsgcl.15606967&site=eds-live>
- Entman, R. (1990). Racism and local TV news. *Critical Studies in Mass Communication*, 7(4), 332–343. doi:10.1080/15295039009360183
- Entman, R. (1992). Blacks in the news: Television, modern racism and cultural change. *Journalism Quarterly*, 69(2), 341–361. doi:10.1177/107769909206900209
- Entman, R. M., & Gross, K. A. (2008). Race to judgment: Stereotyping media and criminal defendants. *Law and Contemporary Problems*, 71(4), 93–134.
- Ferrucci, P., & Tandoc, E. C. (2018). The spiral of stereotyping: Social identity theory and NFL quarterbacks. *Howard Journal of Communications*, 29(2), 103. doi:10.1080/10646175.2017.1315693
- Ferrucci, P., Tandoc, E. C., Painter, C. E., & Leshner, G. (2013). A black and white game: Racial stereotypes in baseball. *Howard Journal of Communications*, 24(3), 309–325. doi:10.1080/10646175.2013.805971
- Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage.
- Florida, R. (2015). How Gentrifiers change the definition of a neighborhood. Atlantic Cities (USA). Retrieved from <http://search.ebscohost.com.ezproxy.fiu.edu/login.aspx?direct=true&db=edsnbk&AN=153FC46638CEFBE8&site=eds-live>
- French, S., Wood, L., Foster, S. A., Giles-Corti, B., Frank, L., & Learnihan, V. (2014). Sense of community and its association with the neighborhood built environment. *Environment and Behavior*, 46(6), 677–697. doi:10.1177/0013916512469098
- Friedrich, K. (2016). Therapeutic media: Treating PTSD with virtual reality exposure therapy. *MediaTropes eJournal*, 4, 86–113.
- Gorodzeisky, A., & Semyonov, M. (2017). Labor force participation, unemployment and occupational attainment among immigrants in West European countries. *PLoS One*, 12(5), e0176856. doi:10.1371/journal.pone.0176856
- Grantham O'Brien, M., & Levy, R. L. (2008). Exploration through virtual reality: Encounters with the target culture. *Canadian Modern Language Review*, 64, 663–691. doi:10.3138/cmlr.64.4.663
- Guendelman, S., Nussbaum, J., Soliday, A., & Lahiff, M. (2018). Hispanic immigrant father involvement with young children in the United States: A comparison with US-Born Hispanic and White non-Hispanic Fathers. *Maternal and Child Health Journal*, 22(8), 1118–1126. doi:10.1007/s10995-018-2496-z
- Hall, E. T. (1976). *Beyond culture*. Garden City, NY: Doubleday Anchor.

- Harris, A. P., & Gonzalez, C., G. (2012). Introduction. In G. Gutiérrez y Muhs, Y. Flores Niemann, C. G. González, & A. P. Harris (Eds.), *Presumed incompetent* (pp. 1–17). Boulder, CO: University Press of Colorado.
- Hasler, B. S., & Friedman, D. A. (2012). Sociocultural conventions in avatar-mediated nonverbal communication: A cross-cultural analysis of virtual proxemics. *Journal of Intercultural Communication Research*, 41(3), 238–259. doi:10.1080/17475759.2012.728764
- Hawley, L. R., Hosch, H. M., & Bovaird, J. A. (2014). Exploring social identity theory and the “black sheep effect” among college student-athletes and non-athletes. *Journal of Sport Behavior*, 37(1), 56–76. Retrieved from <http://ezproxy.fiu.edu/login?url=;http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=110738049&site=eds-live>
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319–340. doi:10.1037/0033-295X.94.3.319
- Hoehner, C. M., Brennan Ramirez, L. K., Elliott, M. B., Handy, S. L., & Brownson, R. C. (2005). Perceived and objective environmental measures and physical activity among urban adults. *American Journal of Preventive Medicine*, 28(2), 105–116. doi:10.1016/j.amepre.2004.10.023
- Hogg, M., & Terry, D. (2000). Social identity and self-categorization processes in organizational contexts. *The Academy of Management Review*, 25(1), 121–140. doi:10.2307/259266
- Hooghe, M., & de Vroome, T. (2016). The relation between ethnic diversity and fear of crime: An analysis of police records and survey data in Belgian communities. *International Journal of Intercultural Relations*, 50, 66–75. doi:10.1016/j.ijintrel.2015.11.002
- Knapp, M., Hall, J., & Horgan, T. (2014). *Nonverbal Communication in Human Interaction*. Boston, MA: Wadsworth.
- Kuliga, S. F., Thrash, T., Dalton, R. C., & Hölscher, C. (2015). Virtual reality as an empirical research tool — Exploring user experience in a real building and a corresponding virtual model. *Computers, Environment and Urban Systems*, 54, 363–375. doi:10.1016/j.compenvurbsys.2015.09.006
- Lee, M. T., & Martinez, R. (2002). Social disorganization revisited: Mapping the recent immigration and black homicide relationship in northern Miami. *Sociological Focus*, 35(4), 363–380. doi:10.1080/00380237.2002.10570709
- Lemheney, A. J., Bond, W. F., Padon, J. C., LeClair, M. W., Miller, J. N., & Susko, M. T. (2016). Developing virtual reality simulations for office-based medical emergencies. *Journal of Virtual Worlds Research*, 9, 1–18.
- Liska, A. E., Sanchirico, A., & Reed, M. D. (1988). Fear of crime and constrained behavior: Specifying and estimating a reciprocal effects model. *Social Forces*, 66(3), 827–837. doi:10.2307/2579577
- Liu, W., Son, M., Wenzel, A., An, Z., Martin, N. Z., & Nah, S. (2017). Bridging mechanisms in multiethnic communities: Place-based communication, neighborhood belonging, and intergroup relations. *Journal of International and Intercultural Communication*, 11(1), 58–80. doi:10.1010/17513057.2017.1384506.
- Löwstedt, A., & Mboti, N. (2017). Media racism: Beyond modernity and postmodernity. *International Journal of Media & Cultural Politics*, 13, 111–130. doi:10.1386/macp.13.1-2.111_1
- Luo, F., & Zhao, J. S. (2017). Acculturation and fear of crime among Hispanics. *Journal of Ethnicity in Criminal Justice*, 15(1), 1–20. doi:10.1080/15377938.2016.1261059
- Lyons, C. J., Velez, M. B., & Santoro, W. A. (2013). Neighborhood immigration, violence, and city-level immigrant political opportunities. *American Sociological Review*, 78(4), 604–632. doi:10.1177/0003122413491964
- Marques, J. M., & Paez, D. (1994). The ‘Black Sheep Effect’: Social categorization, rejection of ingroup deviates, and perception of group variability. *European Review of Social Psychology*, 5(1), 37–68. doi:10.1080/14792779543000011
- Marques, J., Abrams, D., Paez, D., & Hogg, M. (2001). Social categorization, social identification, and rejection of deviant group members. In M. A. Hogg & R. S. Tindale (Eds.), *Group Processes* (pp. 400–425). Oxford, UK: Blackwell.

- Marques, J., Yzerbyt, V., & Leyens, J. (1988). The 'black sheep effect': Extremity of judgments towards in-group members as a function of group identification. *European Journal of Social Psychology*, 18(1), 1–16. doi:10.1002/ejsp.2420180102
- Marquine, M. J., Maldonado, Y., Zlatar, Z., Moore, R. C., Martin, A. S., Palmer, B. W., & Jeste, D. V. (2015). Differences in life satisfaction among older community-dwelling Hispanics and non-Hispanic Whites. *Aging & Mental Health*, 19(11), 978–988. doi:10.1080/13607863.2014.971706
- Meadors, J. D., & Murray, C. (2014). Measuring nonverbal bias through body language responses to stereotypes. *Journal of Nonverbal Behavior*, 38(2), 209–229. doi:10.1007/s10919-013-0172-y
- Nielsen, A. L., Lee, M. T., & Martinez, R. Jr. (2005). Integrating race, place and motive in social disorganization theory: Lessons from a comparison of black and Latino homicide types in two immigrant destination cities. *Criminology*, 43(3), 837–872. doi:10.1111/j.0011-1348.2005.00025.x
- O'Neill, M. E. (2001). Corporeal experience: A haptic way of knowing. *Journal of Architectural Education*, 55(1), 3–12.
- Ousey, G. C., & Kubrin, C. E. (2009). Exploring the connection between immigration and violent crime rates in U.S. cities, 1980–2000. *Social Problems*, 56(3), 447–473. doi:10.1525/sp.2009.56.3.447
- Pan, P., Zhou, S., & Thompson Hayes, M. (2017). Immigrant perpetrators in the news: A terror management approach to resultant hostility, perceived vulnerability, and immigration issue judgement. *Journal of International and Intercultural Communication*, 10(3), 219–236. doi:10.1080/17513057.2017.1280525
- Parker, K. D., McMorris, B. J., Smith, E., & Murty, K. S. (1993). Fear of crime and the likelihood of victimization: A bi-ethnic comparison. *The Journal of Social Psychology*, 133(5), 723–732. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=9311297563&site=eds-livedoi:10.1080/00224545.1993.9713928>
- Peña, J., & Blackburn, K. (2013). The priming effects of virtual environments on interpersonal perceptions and behaviors. *Journal of Communication*, 63(4), 703–720. doi:10.1111/jcom.12043
- Perdue, C. W., & Gurtman, M. B. (1990). Evidence for the automaticity of ageism. *Journal of Experimental Social Psychology*, 26(3), 199–216. doi:10.1016/0022-1031(90)90035-K
- Pewhispanic.org. (2012). The 10 largest Hispanic-Origin Groups Characteristics. Retrieved from <http://www.pewhispanic.org/2012/06/27/the-10-largest-hispanic-origin-groups-characteristics-rankings-top-counties/5/>
- Pickett, J. T., Chiricos, T., Golden, K. M., & Gertz, M. (2012). Reconsidering the relationship between perceived neighborhood racial composition and whites' perceptions of victimization risk: Do racial stereotypes matter. *Criminology*, 50(1), 145–220. doi:10.1111/j.1745-9125.2011.00255.x
- Posey-Maddox, L. (2014). *When middle-class parents choose urban schools: Class, race, and the challenge of equity in public education*. Cambridge: The University of Chicago Press. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=cat06026a&AN=f1u.032566711&site=eds-live>
- Pratto, F., & Bargh, J. A. (1991). Stereotyping based on apparently individuating information: Trait and global components of sex stereotypes under attention overload. *Journal of Experimental Social Psychology*, 27(1), 26–47. doi:10.1016/0022-1031(91)90009-U
- Putnam, R. D. (2007). E Pluribus Unum: Diversity and community in the twenty-first century the 2006 Johan Skytte Prize Lecture. *Scandinavian Political Studies*, 30(2), 137–174. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.165083266&site=eds-live doi:10.1111/j.1467-9477.2007.00176.x>
- Quillian, L., & Pager, D. (2001). Black neighbors, higher crime? The role of racial stereotypes in evaluations of neighborhood crime. *American Journal of Sociology*, 107(3), 717–767. doi:10.1086/338938
- Ramasubramanian, S. (2013). Intergroup contact, media exposure, and racial attitudes. *Journal of Intercultural Communication Research*, 42(1), 54–72. doi:10.1080/17475759.2012.707981
- Ramey, D. M. (2013). Immigrant revitalization and neighborhood violent crime in established and new destination cities. *Social Forces*, 92(2), 597–629. doi:10.1093/sf/sot085

- Salmanowitz, N. (2016). Unconventional methods for a traditional setting: The use of virtual reality to reduce implicit racial bias in the courtroom. *University of New Hampshire Law Review*, 15, 117–160.
- Schwartz, R., & Halegoua, G. R. (2015). The spatial self: Location-based identity performance on social media. *New Media & Society*, 17(10), 1643–1660. doi:10.1177/1461444814531364
- Shinada, M., Yamagishi, T., & Ohmura, Y. (2004). False friends are worse than bitter enemies. *Evolution and Human Behavior*, 25(6), 379–393. doi:10.1016/j.evolhumbehav.2004.08.001.
- Shinnar, R. S. (2008). Coping with negative social identity: The case of Mexican immigrants. *The Journal of Social Psychology*, 148(5), 553–576. Retrieved from <http://ezproxy.fiu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=34772219&site=eds-live>
- Shulman, J. L., Collins, K. A., & Clément, R. (2011). In consideration of social context: Re-examining the linguistic intergroup bias paradigm. *Journal of International and Intercultural Communication*, 4(4), 310–332. doi:10.1080/17513057.2011.595498
- Shuter, R. (2012). Intercultural new media studies: The next frontier in intercultural communication. *Journal of Intercultural Communication Research*, 41(3), 219–237. doi:10.1080/17475759.2012.728761
- Spence, P. R., Lachlan, K. A., Westerman, D., & Spates, S. A. (2013). Where the gates matter less: Ethnicity and perceived source credibility in social media health messages. *Howard Journal of Communications*, 24(1), 1–16. doi:10.1080/10646175.2013.748593
- Sui, M., & Paul, N. (2017). Latino portrayals in local news media: Underrepresentation, negative stereotypes, and institutional predictors of coverage. *Journal of Intercultural Communication Research*, 46(3), 273–294. doi:10.1080/17475759.2017.1322124
- Tajfel, H. (1978). Social categorization, social identity and social comparison. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61–76). London, UK: Academic Press.
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 33(1), 1–39. doi:10.1146/annurev.ps.33.020182.000245
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago, IL: Nelson Hall.
- Taylor, L., & Helfenbein, R. (2009). Mapping everyday: Gender, blackness and discourse in urban contexts. *Educational Studies*, 45(3), 319–329. doi:10.1080/00131940902911006
- Ulrich, R.S. (1986). Human responses to vegetation and landscapes. *Landscape and Urban Planning*, 13, 29–44. doi:10.1016/0169-2046(86)90005-8
- United States Census Bureau. (2017, July 1). Quick facts. Miami-Dade County, FL. Retrieved from <https://www.census.gov/quickfacts/fact/table/miamicityflorida,miamidadecountyflorida/PST045217>
- Wang, L., Zheng, J., Meng, L., Lu, Q., & Ma, Q. (2016). Ingroup favoritism or the black sheep effect: Perceived intentions modulate subjective responses to aggressive interactions. *Neuroscience Research*, 108, 46–54. doi:10.1016/j.neures.2016.01.011
- Weaver, C. N. (2007). The effects of contact on the prejudice between Hispanics and non-Hispanic Whites in the United States. *Hispanic Journal of Behavioral Sciences*, 29(2), 254–274. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ760673&site=eds-live> doi:10.1177/0739986306296590
- Zebrowitz, L. A., Bronstad, P. M., & Lee, H. K. (2007). The contribution of face familiarity to ingroup favoritism and stereotyping. *Social Cognition*, 25(2), 306–338. doi:10.1521/soco.2007.25.2.306