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Negative multicultural experiences can increase intergroup bias \star



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ABSTRACT

Multicultural experiences – such as living, traveling, or working abroad – can have many psychological benefits, including decreasing intergroup bias. However, unlike the intergroup contact literature, research on multicultural experiences has yet to examine whether the valence of these experiences may moderate such outcomes. So, could multicultural experiences actually increase intergroup bias? Five studies reveal that multicultural experiences increase (rather than decrease) intergroup bias when those experiences are negative (rather than positive). Across multiple methods (recall priming; virtual reality simulation), and experiences across multiple countries, negative multicultural experiences increased intergroup bias (stereotyping; prejudice) – both to groups associated, and stigmatized groups not associated, with the specific multicultural experiences on increased bias was mediated by changes in intergroup ideologies/worldviews – specifically social dominance orientation. These findings reveal how multicultural experiences can be a double-edged sword in our increasingly globalized world.

Popular wisdom suggests that experiences in foreign countries free the mind from bias toward cultural outsiders. One such proponent of the benefits of foreign experiences was the famous author Mark Twain, who wrote in his multi-year account of foreign travels, The Innocents Abroad (1869), that "travel is fatal to prejudice, bigotry, and narrowmindedness, and many of our people need it sorely on these accounts" (p. 650, also quoted in Tadmor, Hong, Chao, & Cohen, 2018). Indeed, research has found empirical support for such sentiments, with certain types of multicultural experiences having been shown to lead to reduced intergroup bias (Tadmor et al., 2018; Tadmor, Hong, Chao, Wiruchnipawan, & Wang, 2012). However, elsewhere in his Innocents chronicle, Twain himself uttered contradictory statements on this very issue, suggesting that the effect of multicultural experiences on bias is unlikely to be quite so simple. For example, he also noted "how the fatigues and annoyances of travel fill one with bitter prejudices sometimes" (p. 247), in addition to describing Portuguese people as "slow, shiftless, sleepy, and lazy," (p. 55) and Arab people as "a people by nature and training filthy, brutish, ignorant, and unprogressive" (p. 126).

In the current paper, we sought to unpack how and why certain types

of experiences abroad - or what scholars have termed multicultural experiences - may have the potential to exacerbate intergroup biases like stereotypes and prejudice. Although researchers have previously documented how different types of multicultural experiences - such as living abroad, working abroad, or having deep social relationships with people from other countries - yield a myriad of psychological benefits (Maddux, Lu, Affinito, & Galinsky, 2021), this literature has yet to account for the possible effects of different valences of such experiences. In particular, research has predominately focused on multicultural experiences that are positive or neutral (c.f., Chua, 2013; Geeraert, Demoulin, & Demes, 2014), or otherwise, ignored valence altogether. As a result, a critical gap in the literature currently exists in terms of whether both positive, as well as negative, multicultural experiences have similar psychological effects. Indeed, it seems unlikely that an American tourist who returns home after playing volleyball with locals in Ipanema will be affected in the same way as one who was violently robbed in Copacabana. Thus, a more nuanced empirical investigation of the consequences of different types of experiences with those abroad (innocent or otherwise) is increasingly important to be able to understand a fuller range of the psychological consequences of such experiences.

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In the current paper, we sought to explicitly integrate research on multicultural experiences (e.g., Maddux et al., 2021) with the literature on intergroup contact (e.g., Pettigrew, 1998). In particular, we predict that negative multicultural experiences have the potential to increase multiple forms of intergroup bias, and that this occurs via altering individuals' specific intergroup ideologies and worldviews. To do so, we draw on a recent framework for how intergroup contact broadly impacts human cognition (Hodson, Crisp, Meleady, & Earle, 2018) to suggest that intergroup bias following a negative experience with an individual from a different country may also generalize to other non-target (especially stigmatized) outgroups, due to increased endorsement of ideologies that promote oppressing outgroups in general (Pratto, Sidanius, Stallworth, & Malle, 1994).

1. Multicultural experiences and intergroup bias

Multicultural experiences are defined as "exposure to, or interactions with, elements or members of a different culture(s)" (Maddux et al., 2021, p. 345). The benefits of multicultural experiences are by now numerous and well-documented, such as increased creativity (e.g., Leung, Maddux, Galinsky, & Chiu, 2008; Maddux & Galinsky, 2009), more generalized trust (Cao, Galinsky, & Maddux, 2014), and a clearer sense of self (Adam et al., 2018). However, less work has been devoted to documenting potential downsides of such experiences. Although we do know that higher rates of immoral behaviors occur because of increased moral flexibility (Lu et al., 2017), and that decreased creativity occurs under conditions of interpersonal conflict in multicultural environments (Chua, 2013), little else is currently known about the potential negative externalities of multicultural experiences. Therefore, as the highly ambivalent nature of the various Twain quotes at the beginning of this paper suggest, it is important to consider whether there may be more nuanced effects of multicultural experiences on intergroup bias than is currently recognized.

Intergroup bias can take multiple forms. *Stereotyping* refers to overgeneralized beliefs that are applied to all individuals within a group; *prejudice* refers to negative attitudes toward outgroup targets; and *discrimination* refers to outgroup members being the targets of biased behavior (Dovidio & Gaertner, 2010). Decades of research demonstrate that contact between individuals from different racial groups has the potential to reduce intergroup bias (Allport, 1979; Pettigrew & Tropp, 2006). This is because intergroup contact can increase empathy, perspective taking, or knowledge of outgroups (Pettigrew & Tropp, 2008).

However, more recent work has also demonstrated that intergroup contact experiences, and their consequences, are varied and complex. Indeed, the logic underlying the classic "contact hypothesis" typically assumed that such interactions are largely *positive* in nature, or at least not negative, thereby overlooking the ramifications of what may follow contact that is explicitly negative in valence (Barlow et al., 2012; Paolini & McIntyre, 2019; Pettigrew, 2021; Reimer & Sengupta, 2023). Researchers have also noted that interacting with people from different groups can sometimes be a source of "discomfort, mistrust, resentment, and conflict" (Galinsky et al., 2015, p. 742). Furthermore, evidence shows that negative interactions have the potential to reinforce negative stereotypes, increase outgroup prejudice, and decrease intergroup cooperation (e.g., Barlow et al., 2012; Paolini et al., 2014; Paolini, Harwood, & Rubin, 2010; Schäfer et al., 2021).

In this paper, we sought to leverage insights from the intergroup contact literature to further elucidate a broader range of potential consequences of different types of multicultural experiences. First, the well-documented *negative valence asymmetry* of intergroup contact means that negative experiences should increase bias more so than positive experiences decrease bias (e.g., Graf, Paolini, & Rubin, 2014; Paolini & McIntyre, 2019), a prediction which is also consistent with the idea of a general negativity bias across psychological phenomena (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Importantly, however, extant

work in the multicultural experiences literature has so far overlooked the possibility that negative experiences may carry more psychological weight than positive experiences. For example, one of the main measures used in this research - the Multicultural Experience Survey (Leung & Chiu, 2010) - includes items that, at first glance, either clearly skew in a positive direction (e.g., exposure to foreign music, cuisine, and friends) or are relatively devoid of overt valence (e.g., number of languages spoken). As another example, experimental manipulations, such as exposing participants to "architecture, home decorations, apparel, cuisine, entertainment, recreation, music, movies, art, and literature" from other cultures, are also fairly positive (Leung & Chiu, 2010; Tadmor et al., 2012, p. 755, Tadmor et al., 2018). Although multicultural experiences in the real world can certainly be positive - and prior work shows "participants reported feeling relatively happy" on a state affect measure after recalling exposure to foreign cultures (Tadmor et al., 2012, p. 765) – a clear gap in the literature currently exists, with valence generally unexplored as a potential moderator, and any potential negative valence asymmetry effects of multicultural experiences yet to be investigated or documented.

Second, intergroup relations scholars have argued that there exists a secondary transfer effect of intergroup contact – meaning that bias toward one outgroup often breeds bias toward other outgroups as well (e.g., Bergh, Akrami, Sidanius, & Sibley, 2016; Ekehammar & Akrami, 2003; Hodson et al., 2018; Pettigrew, 2009), as individuals generalize their attitudes from one outgroup to another (Tausch et al., 2010). However, such negative effects have yet to be fully investigated with regard to group contact across national boundaries. For example, prior work shows subpar cross-cultural contact harms attitudes toward members of that same outgroup (e.g., contact with German people influencing attitudes toward other Germans - a target-focused effect; Eller & Abrams, 2006; Graf et al., 2014), and more multiculturally-experienced individuals display less bias toward multiple outgroups (Tadmor et al., 2018, 2012). However, extant work has yet to explore potential secondary transfer effects following negative multicultural experiences, and we predict a similar secondary transfer effect will occur following contact with cultural outgroups.

Third, recent intergroup relations frameworks (Hodson et al., 2018) also argue that intergroup contact serves as an agent of "cognitive liberalization" whereby contact broadens the mind and influences specific intergroup ideologies, worldviews, and attitudes (c.f., Tadmor et al., 2018, 2012). However, the extant multicultural experience literature has yet to document how multicultural experiences change specific *intergroup* cognitions. Instead, prior work has examined general motivational factors such as need for cognitive closure, which captures an individual difference-level, non-specific need to reconcile confusion and uncertainties across topics, targets, and situations (e.g., Tadmor et al., 2018, 2012).

To address this current gap, we explore the role of three key intergroup cognitions. Two of the most prominent intergroup ideologies impacted by intergroup contact are right-wing authoritarianism (RWA; Altemeyer & Altemeyer, 1996) and social dominance orientation (SDO; Pratto et al., 1994). Relatedly, intergroup theories also often point to deprovincialization as a key factor impacted by intergroup contact (Hodson et al., 2018). Those who endorse RWA promote aggression against those who violate norms, as well as adherence to traditions (Benjamin, 2006; Christopher & Wojda, 2008), while those who endorse SDO believe inequalities between groups are warranted, and that their ingroups are fundamentally better than outgroups (Pratto, Sidanius, & Levin, 2006; Whitley Jr, 1999). By contrast, those with higher levels of deprovincialization are more likely to recognize that their "ingroup norms and customs turn out not to be the only ways to manage the social world" (Brewer, 2008; Pettigrew, 1998, p. 72) - which can manifest as changes in ingroup identification and/or ingroup attitudes (e.g., Pettigrew, 2009; Tausch et al., 2010). Indeed, a host of research clearly documents how endorsing RWA and SDO is associated with intergroup bias, including secondary transfer effects on other outgroup attitudes

and beliefs (Levin, Federico, Sidanius, & Rabinowitz, 2002; Vezzali et al., 2018), whereas higher levels of deprovincialization are associated with decreased intergroup bias (e.g., Boin, Fuochi, & Voci, 2020).

We propose that, of these three key constructs tapping intergroup attitudes (SDO, RWA, deprovincialization), social dominance is the most likely candidate to mediate the positive effect of negative multicultural experiences on intergroup bias. Although originally conceptualized as a stable individual difference, many studies now document that SDO is malleable and can be altered by situational variables as well, such as certain types of intergroup contact (Hodson et al., 2018; Meleady, Crisp, Dhont, Hopthrow, & Turner, 2020; Morrison & Ybarra, 2008). For example, undergraduates who lived with a roommate from a different racial group demonstrated lower SDO at the end of the semester (Shook, Hopkins, & Koech, 2016). In addition, emerging evidence suggests that SDO is impacted by experiences abroad. In one study, Belgian students exhibited lower levels of SDO after a one-week class trip to Morocco, but only for those who had higher quality contact (Dhont, Van Hiel, & Hewstone, 2014). SDO is particularly important in situations where group differences are salient (Huang & Liu, 2005; Paolini et al., 2010) which is especially likely in many multicultural experience situations (Maddux et al., 2021). Finally, SDO has been shown to be a "powerful predictor of prejudice toward a range of groups including racial/ethnic minorities, homosexuals and women" (Meleady et al., 2020, p. 2; Sidanius, Levin, Liu, & Pratto, 2000), even more so than RWA (e.g., Duckitt & Sibley, 2007; Ekehammar, Akrami, Gylje, & Zakrisson, 2004) or deprovincialization (e.g., Shook et al., 2016).

In sum, we integrate findings from the multicultural experience and intergroup contact literatures by predicting that negative multicultural experiences have the potential to actually increase (rather than decrease) intergroup bias, that these effects extend to multiple outgroups, and are mediated by increases in SDO following negative contact with cultural outgroups.

2. The present research

Across five experiments - using complementary multicultural experience paradigms, online and in-person samples, as well as various outgroup targets - we tested whether explicitly negative multicultural experiences lead to increased generalized outgroup biases. In Study 1, we primed adults to recall either positive or negative events during a previous trip to Mexico and tested whether prejudice and stereotyping toward multiple outgroups were subsequently affected. Study 2 used a novel, custom-built virtual reality (VR) simulation to allow participants to experience the exact same positive or negative trip to São Paulo, Brazil (though within the confines of a VR headset) and examined subsequent outgroup bias as well as the potential mediating role of SDO. In Studies 3a and 3b - pre-registered studies using France as the target culture we explicitly examined the effect of negative multicultural experiences relative to a) positive vs. neutral multicultural experiences, and b) negative non-multicultural (i.e., home country) experiences. Finally, in our pre-registered Study 4, we conducted a comprehensive test of our full model by a) comparing negative (vs. positive) multicultural experiences to negative (vs. positive) non-multicultural ones, b) ruling out alternative intergroup ideologies/worldviews (RWA) and deprovincialization (operationalized as identification with ingroup members) as potential mechanisms, d) further unpacking SDO as a mechanism by disentangling its subdimensions (dominance vs. egalitarianism), and e)measuring a micro-mechanism to explain exactly how negative multicultural experiences drive SDO. Finally, we included an internal meta-analysis to show the robustness of our main finding across studies. Data and code for our studies, as well as additional details on results and supplemental analyses (Online Appendix A), are posted here. In these studies, we report all measures, manipulations, and exclusions.

3. Study 1: Mexico experience recall experiment

3.1. Method

3.1.1. Participants and design

To determine the appropriate sample size for this study, we conducted an a priori power analysis. We used an internal meta-analysis from a publication on a related topic (Tadmor et al., 2018) to determine our effect size for power analysis calculations (r = 0.279; d =0.581), which indicated we would need approximately 48 participants per condition. Since our inclusion of a negative multicultural experience condition deviated from prior work, we treated the 48 participants per condition as a minimum. Thus, we targeted 100 participants per cell in Study 1.

We recruited participants who had significant experiences in the same foreign country, which allowed us to include bias measures specific to each participant's multicultural experience. After examining the most commonly visited international destinations for United States residents (United States National Travel and Tourism Office, 2018), we targeted American individuals who had previously visited Mexico. To accomplish this, we conducted a two-wave study where the first wave was an opt-in survey and the second wave included our experiment, both of which were conducted using Amazon Mechanical Turk (MTurk).

Our cover story indicated that we were interested in recruiting participants with certain travel histories for a future study. We asked participants if they had been to Mexico (our country of interest), alongside three places that are well-known but uncommon locations for the average American citizen to visit: Cameroon, Madagascar, and Antarctica (World Tourism Organization, 2019). We excluded participants who indicated they had been to all these locations, since a travel history that extensive is unlikely (or at least highly atypical). The following morning, we sent the survey containing our experiment to the remaining participants. As the potential attrition rate between the Time 1 opt-in survey and Time 2 survey was uncertain, we conducted the optin process until we obtained a sample of 300 individuals who had previously visited Mexico.

Of the 300 participants who completed the Time 1 survey, 236 (78.67%) completed the Time 2 survey. We excluded 36 who failed an attention check (a CAPTCHA test), failed to follow instructions (e.g., only copied the prompt; copied text from online posts; wrote nonsensical statements), or – as done in prior studies on multicultural experiences and intergroup bias (Tadmor et al., 2018, 2012) – those who identified with any measured outgroups (Mexican people, African American people, or gay men). Thus, our final sample was 200 participants (44.50% female, $M_{age} = 35.88$, $SD_{age} = 10.88$; 70.50% White). This sample allowed us to detect a minimum mean difference of 0.398 with 80% power, and an alpha of 0.05.

3.1.2. Procedure

We randomly assigned participants to either a positive or negative multicultural experience condition. In the *negative multicultural experience* condition (N = 104), we asked participants to recall a significant, negative experience they had while in Mexico. In the *positive multicultural experience condition* (N = 96), we asked them to recall a significant, positive experience from their time in Mexico. Participants in both conditions were asked to write for five minutes about the details of this experience, consistent with methodology used in prior research to experimentally prime previous multicultural experiences (e.g., Maddux & Galinsky, 2009).

Next, we included a cognitive load filler task to mask the link between the priming and measurement phase (Gilbert & Hixon, 1991). Participants were asked to memorize an eight-digit number and report it up to one minute later.

Then, and ostensibly as part of an unrelated study designed to help the researchers develop a measure for "linking adjectives to various groups of people," we asked participants to respond to "randomly" generated items for a variety of "randomly" generated groups. Our measures of outgroup prejudice and stereotyping were included in this section of the study. To reduce hypothesis guessing, we first asked participants to respond to items assessing evaluations and stereotypes of university professors (a group that is not particularly marginalized; Fragale, Overbeck, & Neale, 2011) followed by similar questions regarding our main outgroup targets of interest.

Participants also completed a measure designed to assess their prior exposure to foreign cultures (Leung & Chiu, 2010). To ensure that completing this scale did not reveal the purpose of our study, we administered this in the opt-in survey (i.e., before our experimental manipulation) and, following prior research using this measure (e.g., Tadmor et al., 2018), dispersed these items throughout the demographic section of the survey. We included this measure to determine if a participant's prior multicultural experiences influenced how they recalled – or psychologically reacted to – a single negative, or positive, multicultural experience.

3.2. Measures

3.2.1. Manipulation check

We asked participants to respond to the items "the experience I had in the country I wrote about was negative" and "the experience I had in the country I wrote about was positive" (reverse-coded) on a seven-point scale ranging from "strongly disagree" to "strongly agree." We averaged these to assess negativity of a participant's experience. As this was a twoitem measure, we assessed its reliability using the Spearman-Brown coefficient (Eisinga, Grotenhuis, & Pelzer, 2013; $\rho = 0.93$).

3.2.2. Outgroup prejudice

We measured the extent to which participants displayed prejudice toward three groups: one that corresponded to their specific experience (Mexican people) and two additional outgroups (African American people and gay men). We specifically chose these two outgroups to capture generalized intergroup bias because they were the same groups used in prior research showing multicultural experiences can reduce generalized outgroup bias (Tadmor et al., 2018, 2012), and also because both groups are often perceived as particularly stigmatized and marginalized (e.g., Bäckström & Björklund, 2007; Duckitt & Sibley, 2007; McFarland, 2010).

For each group, participants were told to "think of the typical [member of outgroup]" and rate their agreement with the items "I dislike [members of outgroup]" and "I like [members of outgroup]" (reverse-coded) on a seven-point scale. For each outgroup, the two items were averaged to form a composite measure of prejudice ($\rho = 0.58, 0.70, 0.75$, respectively).

3.2.3. Outgroup stereotyping

We measured endorsement of stereotypes of Mexican people, African American people, and gay men. Participants reported the extent to which a series of traits were "true descriptions of [members of that group], in general" on a five-point scale ("not at all true" to "extremely true"). For Mexican people, the items were "macho," "oppressed," "short," "prone to crime," "poor," and "dirty" (e.g., Reyna, Wetherell, & Dobria, 2013). For African American people, the items were "uneducated," "loud," "violent," "irresponsible," "lazy," and "undisciplined" (e.g., Philogène, 2001; Tadmor et al., 2012). For gay men, the items were "feminine," "attention-seeking," "melodramatic," "hip," "well-dressed," and "articulate," (e.g., Morrison & Bearden, 2007; Tadmor et al., 2012). We averaged items for each outgroup ($\alpha = 0.84$, 0.95, and 0.82, respectively).

3.3. Results

3.3.1. Manipulation check

Participants in the negative multicultural experience condition recalled a more negative experience (M = 6.03, SD = 1.40) than those in

the positive multicultural experience condition (M = 1.33, SD = 0.83), b = 4.70, SE = 0.17, t(198) = 28.50, p < .001, 95% CI: [4.371, 5.020], d = 4.07).

3.3.2. Outgroup prejudice

Participants in the negative multicultural experience condition reported more negative evaluations of Mexican people (M = 2.39, SD = 1.33) than those in the positive multicultural experience condition (M = 1.86, SD = 0.80; b = 0.54, SE = 0.16, t(198) = 3.41, p = .001, 95% CI: [0.226, 0.844], d = 0.49). Similarly, those in the negative multicultural experience condition reported more negative evaluations of African American people (M = 2.50, SD = 1.53; b = 0.52, SE = 0.19, t(198) = 2.70, p = .008, 95% CI: [0.139, 0.892], d = 0.38) and gay men (M = 3.00, SD = 1.73; b = 0.51, SE = 0.23, t(198) = 2.22, p = .028, 95% CI: [0.056, 0.955], d = 0.31) compared to the positive multicultural experience condition (Fig. 1; $M_{African American} = 1.99$, $SD_{African American} = 1.12$; $M_{Gay} = 2.49$, $SD_{Gay} = 1.47$).

3.3.3. Outgroup stereotyping

Participants in the negative multicultural experience condition endorsed stereotypes of Mexican people (M = 2.62, SD = 1.03) significantly more than those in the positive multicultural experience condition (M = 2.28, SD = 0.78; b = 0.34, SE = 0.13, t(198) = 2.58, p = .011, 95% CI: [0.079, 0.592], d = 0.37). Those in the negative multicultural experience condition also endorsed stereotypes of African American people (M = 2.35, SD = 1.21; b = 0.31, SE = 0.16, t(198) = 1.93, p =.055, 95% CI: [-0.006, 0.619], d = 0.27) and gay men (M = 3.38, SD =0.87; b = 0.22, SE = 0.13, t(198) = 1.75, p = .082, 95% CI: [-0.028, 0.469], d = 0.25) marginally more than those in the positive multicultural experience condition (Fig. 1; $M_{African American} = 2.04$, $SD_{African}$ American = 1.01; $M_{Gay} = 3.16$, $SD_{Gay} = 0.91$).

3.3.4. Supplementary analyses: moderation of prior multicultural experience

We also measured the extent to which participants had prior



Fig. 1. Mean prejudice (left) and stereotype endorsement (right) for Mexican people, African American people, and gay men as a function of multicultural experience condition (Study 1).

Note. Error bars represent ± 1 standard error. ^{ns}p > 0.10; ⁺p < .10; ^{*}p < .05; ^{**}p < .01; ^{***}p < .001. Significance of pairwise comparisons determined relative to negative multicultural experience condition.

exposure to foreign cultures using the Multicultural Experience Survey (Leung & Chiu, 2010). Although not part of our focal theorizing, we included this to test whether participants' prior exposure to foreign cultures moderated how they responded to recalling a given experience. Moderation analyses are detailed in Online Appendix A. Briefly, none of the interaction terms were significant (*ps* ranged from 0.131 to 0.999), suggesting prior multicultural experience did not influence these effects.

4. Study 2: Brazil experience virtual reality experiment

Study 2 had two primary goals. First, we sought to conceptually replicate our results with a different manipulation, sample, and target outgroup. Second, we wanted to identify a mediating mechanism explicitly tied to intergroup attitudes – social dominance orientation – to explain our effects. Since it was not feasible to randomly assign participants to undergo a distinctly positive versus negative multicultural experience (e.g., send them abroad for a trip of pre-determined personal growth or unfettered misery), we used virtual reality (VR) technology to expose all participants to the same standardized positive or negative multicultural experience. We also used a new target culture (Brazil), one that is distinct from Mexico in many ways (e.g., Da Luz Moreira, 2013; Mellado, Moreira, Lagos, & Hernández, 2012) to explore the generalizability of the effects across countries.

4.1. Method

4.1.1. Participants

We again based our sample size on an a priori power analysis and treated the aforementioned 48 participants per condition (Tadmor et al., 2018) as a minimum, recruiting the maximum number of participants possible from an in-person credit pool of undergraduate students from a university in the Southeastern United States. As in Study 1, of the 183 participants who completed our study, we excluded 24 who identified with the outgroups of interest (i.e., identified as Brazilian, African American, or gay men; see Tadmor et al., 2018), as well as eight who failed a basic attention check ("what country did you virtually experience?"). Thus, our final sample was 151 undergraduate students across two conditions (49.67% female; $M_{age} = 20.11$, $SD_{age} = 1.78$; 70.20% White). This final sample allowed us to detect a minimum mean difference of 0.459 (between two groups) with 80% power and an alpha of 0.05.

4.1.2. Procedure

We told participants that the study involved multiple unrelated tasks

that the researchers were piloting for future work. First, each participant was seated at a private desk and asked to wear an *Oculus Go* VR headset (Fig. 2), with headphones, to see and hear a virtual experience. For this experience, we harnessed VR technology to simulate a real trip abroad. The simulation was designed to deliver a virtual experience that was as realistic, immersive, and similar to a real multicultural experience as possible. Thus, all footage used to create the VR experience was filmed by professional videographers during a trip from the USA to São Paulo, Brazil.

While wearing the VR headset, participants were immersed in a 2.5min, 180° video where they experienced a number of high-definition scenes depicting international travel to Brazil: sitting on a plane landing in São Paulo, walking through the airport, riding in a taxi, and exploring the Mercado Municipal (a popular market). As participants virtually passed through these scenes, they saw people and landmarks and heard sounds in the environment (e.g., locals speaking Portuguese; Brazilian music playing from the taxi radio). The headset also allowed participants to rotate their heads to focus on anything in the environment as they chose.

The final scene lasted approximately 30 s and involved the participant themselves virtually holding out their phone – which appeared to not be working – and apparently asking a local Brazilian woman for directions. Unbeknownst to participants, this woman was a paid actor and this interaction was scripted to manipulate the valence of the multicultural experience.

In the *positive multicultural experience* condition (N = 77), the woman appeared friendly and welcoming to the participant, asking "posso ajudar [can I help you]?" Then, when the participant gestured to the phone, the woman said "hi... welcome" followed by, in English, an offer to help the participant find their hotel and walk them there. In the *negative multicultural experience* condition (N = 74), the woman appeared frustrated and annoyed with the participant and said "que foi [what is it]?" Then, when the participant gestured to the phone, the woman said "a gente tem o GoogleMaps no Brasil... vai procura aí [we have GoogleMaps in Brazil ... go look there]" followed by "learn Portuguese next time" in English before turning away. Participants then removed their headsets and spent two minutes writing about their experience.

We used the same cover story and design as Study 1, including the cognitive filler task followed by our measures of outgroup prejudice and stereotyping toward Brazilian people, African American people, and gay men. Finally, participants completed our measure of social dominance orientation that was embedded in the demographics section of the study.



Fig. 2. Setup used to manipulate multicultural experience valence (left) and example of stimulus (right; Study 2).

4.2. Measures

4.2.1. Manipulation check

Similar to Study 1, participants responded to the items "the virtual experience I had in the country was negative" and "the virtual experience I had in the country was positive" (reverse-coded) on a seven-point scale ranging from "strongly disagree" to "strongly agree" ($\rho = 0.89$).

4.2.2. Outgroup prejudice

Participants responded to the same two items per outgroup target as in Study 1, except here we measured prejudice toward Brazilian people, African American people, and gay men. We averaged items for each outgroup ($\rho = 0.94, 0.84, 0.86$, respectively).

4.2.3. Outgroup stereotyping

Similar to Study 1, we measured the extent to which participants endorsed stereotypes of Brazilian people, African American people, and gay men. For Brazilians, the items were "aggressive," "unpunctual," "sensual," "poor," "spontaneous," and "passionate" (e.g., Beserra, 2005; El-Dash & Busnardo, 2001). We used the same items as Study 1 for African American people and gay men. We averaged items for each outgroup ($\alpha = 0.80, 0.95$, and 0.84, respectively).

4.2.4. Social dominance orientation

We measured social dominance orientation using eight items (Pratto et al., 1994) used in prior work (e.g., Bowles & Gelfand, 2010). On a seven-point scale ranging from "strongly disagree" to "strongly agree," participants responded to items such as "some groups of people are simply inferior to other groups" and "if certain groups stayed in their place, we would have fewer problems." We averaged these items ($\alpha = 0.91$).

4.3. Results

4.3.1. Manipulation check

Participants in the negative multicultural experience condition had a more negative experience (M = 3.69, SD = 1.54) than those in the positive multicultural experience condition (M = 2.55, SD = 1.17), b = 1.14, SE = 0.22, t(149) = 5.12, p < .001, 95% CI: [0.699, 1.576], d = 0.83.

4.3.2. Outgroup prejudice

Participants in the negative multicultural experience condition evaluated Brazilian people significantly more negatively (M = 4.20, SD = 1.55) than those in the positive multicultural experience condition (M = 2.82, SD = 1.47; b = 1.38, SE = 0.25, t(149) = 5.62, p < .001, 95% CI: [0.893, 1.863], d = 0.91). Participants in the negative multicultural experience condition also evaluated African American people marginally more negatively (M = 2.05, SD = 1.35) than those in the positive multicultural experience condition (M = 1.72, SD = 0.88; b = 0.33, SE =0.18, t(149) = 1.81, p = .073, 95% CI: [-0.031, 0.698], d = 0.29). Furthermore, participants in the negative multicultural experience condition evaluated gay men significantly more negatively (M = 2.91, SD = 1.67) than participants in the positive multicultural experience condition (M = 2.23, SD = 1.49; b = 0.69, SE = 0.26, t(149) = 2.67, p =.008, 95% CI: [0.178, 1.192], d = 0.43; Fig. 3).

4.3.3. Outgroup stereotyping

Participants in the negative multicultural experience condition endorsed stereotypes of Brazilian people (M = 2.67, SD = 0.78) significantly more than those in the positive multicultural experience condition (M = 2.12, SD = 0.64; b = 0.55, SE = 0.12, t(149) = 4.73, p < .001, 95% CI: [0.320, 0.779], d = 0.77). Those in the negative multicultural experience also endorsed stereotypes of African American people (M =1.92, SD = 1.05; b = 0.40, SE = 0.14, t(149) = 2.81, p = .006, 95% CI: [0.119, 0.684], d = 0.46) and gay men (M = 3.39, SD = 0.90; b = 0.28,



Fig. 3. Mean prejudice (left) and stereotype endorsement (right) for Brazilian people, African American people, and gay men, as a function of multicultural experience condition (Study 2).

Note. Error bars represent ± 1 standard error. ${}^{ns}p > 0.10$; ${}^{+}p < .10$; ${}^{*}p < .05$; ${}^{**}p < .01$; ${}^{***}p < .01$. Significance of pairwise comparisons determined relative to negative multicultural experience condition.

SE = 0.14, t(149) = 1.98, p = .050, 95% CI: [0.000, 0.562], d = 0.32) significantly more than those in the positive multicultural experience condition (Fig. 3; $M_{African American} = 1.52$, $SD_{African American} = 0.67$; $M_{Gay} = 3.10$, $SD_{Gay} = 0.85$).

4.3.4. Mediation through social dominance orientation

We next tested whether social dominance orientation mediated the effect of multicultural experiences on outgroup bias. To do so, we specified a just-identified path model. First, we modelled a path where our negative multicultural experience dummy variable predicted social dominance orientation. Next, we modelled paths where social dominance orientation and our condition dummy variable predicted each intergroup bias measure. Finally, we constructed bias-corrected standard errors using bootstrapping with 10,000 resamples to determine the significance of each indirect effect using confidence intervals (e.g., Shrout & Bolger, 2002).

As expected, participants in the negative multicultural experience condition (M = 2.35, SD = 1.37) reported higher social dominance orientation than those in the positive multicultural experience condition (M = 1.85, SD = 1.04; b = 0.50, SE = 0.20, Z = 2.53, p = .012, d = 0.41), and there were positive and significant indirect effects of negative multicultural experiences on intergroup bias through social dominance orientation (Table A1; Online Appendix A). This indicates that social dominance orientation mediated the effects of multicultural experiences on intergroup bias.

5. Studies 3a and 3b: France experience recall experiments

We conducted a pair of pre-registered studies to further test the generalizability of our effects and address limitations. In both studies, we extended our effects to a European cultural outgroup (France) that is distinct from Mexico and Brazil (e.g., Blasco & Zølner, 2010; Brett et al., 1998), explicitly differentiated between the endorsement of positive and negative stereotypes, and also included complementary control conditions. In Study 3a, we focused on determining the locus of our effect with

respect to the valence of a multicultural experience (negative vs. positive vs. neutral). In Study 3b, we ruled out the potential alternative explanation that our findings were due to an effect of general negativity, rather than negative multicultural experiences specifically.

6. Study 3a: Negative vs. positive vs. neutral multicultural experiences

6.1. Method

We pre-registered our sample, design, and direct effects (see here).

6.1.1. Participants and design

We used the same opt-in procedure as Study 1 to recruit 450 individuals through MTurk who had previously been to France. Using the same a priori power analysis as in Study 1, we targeted a minimum of 100 participants per cell with the hope that 120 participants per cell would be eligible for analysis. We focused on France because it is one of the most popular travel destinations for Americans (United States National Travel and Tourism Office, 2018). As per our pre-registration, we excluded 29 participants who did not follow the manipulation instructions. As in Studies 1 and 2, we excluded 74 participants who identified with any of our measured outgroups (French people, African American people, or gay men). We excluded nine participants who failed an attention check embedded in the demographic section of the survey. Thus, our final sample included 338 adults (49.41% female; $M_{age} =$ 38.94, SD_{age} = 13.77; 71.91% White). Given a goal of 80% power with an alpha of 0.05, this final sample size allowed us to detect a minimum mean difference of 0.369 (between the negative and positive condition), 0.380 (between the negative and neutral condition), and 0.377 (between the positive and neutral condition).

6.1.2. Procedure

We randomly assigned participants to one of three conditions. In the *negative multicultural experience* condition (N = 114), we asked participants to recall a significant, negative experience during their time in France. In the *positive multicultural experience* condition (N = 118), we asked them to recall a significant, positive experience during their time in France. In the *control* condition (N = 106), we asked them to recall "an average day" they had while in France. As in Study 1 and 2, participants spent up to five minutes writing about the details of this experience, then completed the cognitive load filler task followed by our measures of prejudice and stereotyping toward French people, African American people, and gay men, as well as social dominance orientation and prior multicultural experience.

6.2. Measures

6.2.1. Manipulation check

Participants responded to the same items as in Studies 1 and 2 ($\rho = 0.96$).

6.2.2. Outgroup prejudice

Participants responded to the same two items as in Studies 1 and 2, except this study included prejudice toward French people (instead of Mexican or Brazilian people), alongside African American people and gay men ($\rho = 0.91, 0.89, 0.90$, respectively).

6.2.3. Negative outgroup stereotyping

We measured endorsed negative stereotypes of French people, African American people, and gay men in the same way as Studies 1 and 2. For French people, items were "unfriendly," "rude," "uncooperative," arrogant," and "unhygienic" (Rosenthal, 1999). For African American people, items were "uneducated," "violent," "irresponsible," "lazy," and "loud" (Philogène, 2001; Tadmor et al., 2018, 2012). For gay men, items were "attention-seeking," "feminine," "melodramatic," "emotional," and "flamboyant" (Morrison & Bearden, 2007; Tadmor et al., 2018, 2012). We averaged items for each outgroup ($\alpha = 0.90$, 0.83, 0.86, respectively).

6.2.4. Positive outgroup stereotyping

We measured positive stereotypes of the three outgroups. For French people, items were "romantic," "sensual," "fashionable," artistic," and "cultured" (Rosenthal, 1999). For African American people, items were "hip," "outgoing," "athletic," "strong," and "sociable" (Philogène, 2001; Tadmor et al., 2018, 2012). For gay men, items were "stylish," "well-dressed," "articulate," "good at dancing," and "good at cooking" (Morrison & Bearden, 2007; Tadmor et al., 2018, 2012). We averaged items for each outgroup ($\alpha = 0.88, 0.91, 0.90$, respectively).

6.2.5. Social dominance orientation

We measured social dominance orientation using the same scale as Study 2 ($\alpha=0.94).$

6.3. Results

Given our interest in negative experiences in particular, we focus on two comparisons: negative (vs. positive) and negative (vs. control) multicultural experiences. So, we conducted a one-way ANOVA as an omnibus test per outcome, followed by pairwise comparisons (Fig. 4).

6.3.1. Manipulation check

There was an omnibus effect of condition on the negativity of the recalled experience, F(2, 335) = 599.72, p < .001, $\eta_p^2 = 0.78$. Participants in the negative multicultural experience condition recalled a significantly more negative experience (M = 5.73, SD = 1.56) than those in both the positive experience (M = 1.22, SD = 0.45; t(230) = 30.10, p < .001, d = 3.92) and control conditions (M = 1.51, SD = 1.00; t(218) = 23.60, p < .001, d = 3.21). Differences between participants in the positive multicultural experience and control conditions were also significant (t(222) = -2.89, p = .004, d = -0.38).

6.3.2. Outgroup prejudice

French People. Prejudice toward French people significantly differed by condition, F(2, 335) = 17.89, p < .001, $\eta_p^2 = 0.10$. Participants in the negative multicultural experience condition reported significantly more negative evaluations of French people (M = 2.85, SD = 1.38) than those in the positive multicultural experience (M = 1.99, SD = 1.04; t(230) = 5.28, p < .001, d = 0.69) and control conditions (M = 2.10, SD = 1.04; t(218) = 4.51, p < .001, d = 0.61).

African American People. Prejudice toward African American people significantly differed by condition, F(2, 335) = 9.79, p < .001, $\eta_p^2 = 0.06$. Participants in the negative multicultural experience condition reported significantly more negative evaluations of African American people (M = 2.51, SD = 1.25) than those in the positive multicultural experience condition (M = 1.93, SD = 0.98; t(230) = 3.98, p < .001, d = 0.52) and compared to those in the control condition (M = 2.04, SD = 0.92; t(218) = 3.17, p = .002, d = 0.43).

Gay Men. Prejudice toward gay men significantly differed by condition, F(2, 335) = 4.66, p = .010, $n_p^2 = 0.03$. Participants in the negative multicultural experience condition reported significantly more negative evaluations of gay men (M = 2.75, SD = 1.49) than those in the positive multicultural experience condition (M = 2.20, SD = 1.27; t(230) = 3.02, p = .003, d = 0.40), though not compared to those in the control condition (M = 2.44, SD = 1.34; t(218) = 1.63, p = .105, d = 0.22).

6.3.3. Negative outgroup stereotyping

French People. Endorsement of negative French stereotypes significantly differed by condition, F(2, 335) = 21.01, p < .001, $\eta_p^2 = 0.11$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of French people (M = 2.56, SD = 1.01) than those in the positive multicultural experience



Fig. 4. Mean prejudice (left) and negative stereotype endorsement (right) for French people, African American people, and gay men as a function of multicultural experience condition (Study 3a).

Note. Error bars represent ± 1 standard error. ${}^{ns}p > 0.10$; ${}^{+}p < .10$; ${}^{*}p < .05$; ${}^{**}p < .01$; ${}^{***}p < .01$. Significance of pairwise comparisons determined relative to negative multicultural experience condition.

condition (M = 1.94, SD = 0.87; t(230) = 4.94, p < .001, d = 0.65) and compared to those in the control condition (M = 1.86, SD = 0.71; t(218) = 5.83, p < .001, d = 0.79).

African American People. Endorsement of negative African American stereotypes significantly differed by condition, F(2, 335) = 8.24, p < .001, $\eta_p^2 = 0.05$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of African American people (M = 2.18, SD = 0.96) than those in the positive multicultural experience condition (M = 1.86, SD = 0.75; t (230) = 2.76, p = .006, d = 0.36) and control condition (M = 1.75, SD = 0.70; t(218) = 3.75, p < .001, d = 0.51).

Gay Men. Endorsement of negative gay men stereotypes significantly differed by condition, F(2, 335) = 11.15, p < .001, $\eta_p^2 = 0.06$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of gay men (M = 3.19, SD = 1.01) than those in the positive multicultural experience (M = 2.68, SD = 0.94; t(230) = 4.00, p < .001, d = 0.52) and control conditions (M = 2.67, SD = 0.89; t(218) = 4.03, p < .001, d = 0.55).

6.3.4. Positive outgroup stereotyping

There was no significant effect of experimental condition on endorsement of positive stereotypes of French people (*F*(2, 335) = 1.81, p = .165, $\eta_p^2 = 0.01$), African American people (*F*(2, 335) = 2.23, p = .110, $\eta_p^2 = 0.01$), or gay men (*F*(2, 335) = 0.37, p = .689, $\eta_p^2 = 0.00$).

6.3.5. Social dominance orientation as a mediator

Although not formally pre-registered as a mediation hypothesis, we next tested whether social dominance orientation explained the effect of multicultural experiences on outgroup bias. To do this, we used a procedure similar to that outlined in Study 2. However, in this path model we entered two dummy variables instead of one: one that compared participants in the positive (vs. negative) multicultural experience condition and another that compared those in the neutral (vs. negative) multicultural experience condition (Hayes, 2018).

Participants in the negative multicultural experience condition (M = 2.40, SD = 1.54) reported higher social dominance orientation than those in the positive multicultural experience (M = 1.94, SD = 1.20; b = 0.46, SE = 0.18, Z = 2.50, p = .012, d = 0.33) and control conditions (M = 1.90, SD = 1.13; b = 0.50, SE = 0.18, Z = 2.74, p = .006, d = 0.37). Furthermore, there were negative and significant relative indirect effects of positive/neutral (vs. negative) multicultural experiences on

intergroup bias via social dominance orientation (Table A2; Online Appendix A). This indicates that social dominance orientation mediated the effects of multicultural experiences on intergroup bias.

6.3.6. Supplementary analyses: moderation of prior multicultural experience

As in Study 1, we tested the potential moderating role of prior multicultural experiences. None of the interaction terms were significant (Table A3; Online Appendix A), which again suggests that prior multicultural experience did not moderate any of our hypothesized effects.

7. Study 3b: Negative multicultural vs. negative nonmulticultural experiences

In order to rule out the possibility that our effects were driven by general negativity, we ran a study comparing the effects of a negative multicultural experience to a "general" negative experience within one's home country (e.g., Maddux, Adam, & Galinsky, 2010).

7.1. Method

We pre-registered our sample, design, and analyses (see here).

7.1.1. Participants and design

We used the same opt-in procedure as in Study 3a to recruit 300 individuals through MTurk who had previously been to France. Using the same a priori power analysis as in Studies 1 and 3a, we targeted a minimum of 100 participants per cell with the hope that 120 participants per cell would be eligible for analysis. As in our prior studies, we excluded 50 participants who identified with any of the outgroups of interest (French people, African American people, or gay men), and 18 participants who did not follow the instructions for our manipulation or failed an attention check. Thus, our final sample included 232 working adults (48.47% female; $M_{age} = 40.62$, $SD_{age} = 12.56$; 81.03% White). This final sample allowed us to detect a minimum mean difference of 0.370 with 80% power and an alpha of 0.05.

7.1.2. Procedure

We randomly assigned participants to one of two conditions. In the *negative multicultural experience* condition (N = 120), we asked participants to recall a significant, negative experience from their time in France. In the *negative non-multicultural experience* condition (N = 112), we asked them to recall a significant, negative experience they had while in their home country. As in Study 3a, participants spent five minutes writing about the details of this experience, then completed the cognitive load filler task followed by our measures of prejudice and stereotyping toward French people, African American people, and gay men, and social dominance orientation.

Participants also reported their state negative affect after our manipulation (as a potential alternative mechanism) and rated their liking of a series of non-intergroup targets that we would not expect to vary across conditions (as a test of divergent validity).

7.2. Measures

7.2.1. Manipulation check

Participants responded to the same items as in Studies 1 – 3a, which we averaged to form a composite measure of the negativity of the experience participants recalled ($\rho = 0.93$).

7.2.2. Outgroup prejudice

Participants responded to the same two items as in Study 3a to assess prejudice toward French people, African American people, and gay men ($\rho = 0.91, 0.91, 0.92$, respectively).

7.2.3. Negative outgroup stereotyping

We measured the extent to which participants endorsed negative stereotypes of French people, African American people, and gay men using the same measures as in Study 3a ($\alpha = 0.91$, 0.94, 0.94, respectively).

7.2.4. Positive outgroup stereotyping

We also measured the extent to which participants endorsed positive stereotypes of French people, African American people, and gay men using the same measures as in Study 3a ($\alpha = 0.90$, 0.93, 0.93, respectively).

7.2.5. Social dominance orientation

We measured social dominance orientation using the same scale as in Studies 2 and 3a ($\alpha=0.94).$

7.2.6. State negative affect

As a potential alternative mechanism, we measured the extent to which participants felt negative affect in the moments after recalling their negative experience. Participants reported the extent to which they felt the ten negative emotions from the PANAS (Watson, Clark, & Tellegen, 1988) "right now" on a five-point scale ranging from "not at all" to "a great extent" ($\alpha = 0.92$).

7.2.7. Attitudes toward non-intergroup targets

For divergent validity, we also measured the extent to which participants displayed negative attitudes toward non-intergroup targets. Participants rated how much they *liked* a series of non-human outgroups, on a five-point scale ranging from "not at all" to "very much." The targets were puppies, hot dogs, computers, and an image of Jackson Pollock abstract art.

7.3. Results

Given we had two conditions, we followed the same analytical procedures as in Study 2. We first compared differences in means between



Fig. 5. Mean prejudice (left) and negative stereotype endorsement (right) for French people, African American people, and gay men as a function of multicultural experience condition (Study 3b).

Note. Error bars represent ± 1 standard error. ${}^{ns}p > 0.10$; ${}^{+}p < .10$; ${}^{*}p < .05$; ${}^{**}p < .01$; ${}^{**}p < .01$. Significance of pairwise comparisons determined relative to negative multicultural experience condition.

conditions (see Fig. 5), and then conducted mediation tests using path analysis with bootstrapping for assessing significance of indirect effects.

7.3.1. Manipulation check

Participants in the negative multicultural experience condition recalled a less negative experience (M = 6.21, SD = 1.02) than those in the negative non-multicultural experience condition (M = 6.79, SD = 0.49), b = -0.58, SE = 0.11, t(230) = -5.44, p < .001, 95% CI: [-0.787, -0.368], d = -0.72. Thus, our manipulation actually yielded a conservative test of our hypotheses given that participants in the multicultural experience condition recalled experiences that were *less* negative with respect to valence.

7.3.2. Outgroup prejudice

French People. Participants in the negative multicultural experience condition evaluated French people significantly more negatively (M = 2.71, SD = 1.25) than those in the negative non-multicultural experience condition (M = 2.25, SD = 1.16; b = 0.45, SE = 0.16, t (230) = 2.86, p = .005, 95% CI: [0.141, 0.767], d = 0.38).

African American People. Participants in the negative multicultural experience condition evaluated African American people significantly more negatively (M = 2.29, SD = 1.29) than those in the negative non-multicultural experience condition (M = 1.92, SD = 1.04; b = 0.37, SE = 0.16, t(230) = 2.38, p = .018, 95% CI: [0.063, 0.672], d = 0.31).

Gay Men. Participants in the negative multicultural experience condition evaluated gay men marginally more negatively (M = 2.50, SD = 1.31) than those in the negative non-multicultural experience condition (M = 2.20, SD = 1.37; b = 0.30, SE = 0.18, t(230) = 1.67, p = .096, 95% CI: [-0.053, 0.643], d = 0.22).

7.3.3. Negative outgroup stereotyping

French People. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of French people (M = 2.48, SD = 0.98) than those in the negative non-multicultural experience condition (M = 2.17, SD = 0.91; b = 0.32, SE = 0.12, t(230) = 2.55 p = .011, 95% CI: [0.072, 0.562], d = 0.34).

African American People. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of African American people (M = 2.12, SD = 0.87) than those in the negative non-multicultural experience condition (M = 1.85, SD = 0.88; b = 0.27, SE = 0.12, t(230) = 2.33, p = .021, 95% CI: [0.041, 0.493], d = 0.31).

Gay Men. Negative stereotyping of gay men did not differ between conditions, though the effect trended toward increased negative stereotyping by those in the negative multicultural experience (M = 2.86, SD = 1.05) compared to negative non-multicultural experience condition (M = 2.67, SD = 1.03; b = 0.19, SE = 0.13, t(230) = 1.38, p = .169, 95% CI: [-0.081, 0.458], d = 0.18).

7.3.4. Positive outgroup stereotyping

Endorsement of positive stereotypes did not differ by condition. Endorsement of positive stereotypes of French people did not differ between those in the negative multicultural (M = 3.29, SD = 0.73) and negative non-multicultural conditions (M = 3.36, SD = 1.01; t(230) =-0.62, p = .539, d = -0.08). Endorsement of positive stereotypes of African American people did not differ between those in the negative multicultural (M = 3.36, SD = 0.70) and negative non-multicultural conditions (M = 3.38, SD = 0.80; t(230) = -0.22, p = .823, d =-0.03). Endorsement of positive stereotypes of gay men did not differ between those in the negative multicultural (M = 3.28, SD = 0.80) and negative non-multicultural conditions (M = 3.31, SD = 0.85; t(230) =-0.24, p = .815, d = -0.03).

7.3.5. Social dominance orientation as a mediator

We next tested whether social dominance orientation could explain the effect of negative multicultural experiences on intergroup bias. As

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expected, participants in the negative multicultural experience condition (M = 2.34, SD = 1.40) reported higher social dominance orientation than those in the negative non-multicultural experience condition (M =1.84, SD = 1.09; b = 0.50, SE = 0.16, Z = 3.07, p = .002, d = 0.40). Furthermore, the indirect effects of negative multicultural experiences on intergroup bias through social dominance orientation were positive and significant (Table A4; Online Appendix A). This indicates that social dominance orientation mediated the effects of multicultural experiences on intergroup bias.

7.3.6. Supplementary analyses: ruling out alternative explanations

We sought to rule out the possibility that our effects were the result of a simple "negativity effect" whereby recalling *any* negative experience drives intergroup bias or negative attitudes toward any target, regardless of outgroup status.

First, we explored the possibility that differences in state negative affect - rather than social dominance orientation - following our manipulation accounted for the effect of negative multicultural experiences on intergroup bias. However, participants in the negative multicultural experience condition actually reported lower levels of state negative affect (M = 1.46, SD = 0.64) than those in the negative nonmulticultural experience condition (M = 1.77, SD = 0.80; b = -0.32, *SE* = 0.10, *t*(230) = -3.53, *p* = .001, 95% CI: [-0.505, -0.131], *d* = -0.44). We then tested whether state negative affect mediated the relationship between negative multicultural experiences and intergroup bias by entering negative affect as a simultaneous mediator in our model (which was allowed to covary with social dominance). However, all of the indirect effects of negative multicultural experiences on intergroup bias, through social dominance orientation, were still significant, whereas none of the indirect effects through state negative affect were significant.

Second, we tested whether our effects extended to targets that our theory would suggest should *not* be impacted by multicultural experiences: non-intergroup targets. As expected, liking of puppies (b = -0.15, SE = 0.13, t(230) = -1.18, p = .241, d = -0.15), hot dogs (b = 0.13, SE = 0.17, t(230) = 0.77, p = .445, d = 0.10), computers (b = -0.12, SE = 0.11, t(230) = -1.04, p = .300, d = -0.14), and an image of a Jackson Pollock painting (b = -0.00, SE = 0.15, t(230) = -0.02, p = .981, d = 0.00) did not differ by condition.

Taken together, these findings suggest that our effects are indeed driven by negative multicultural experiences in particular, rather than general non-specific negativity.

8. Study 4: Experience type by valence

Study 4 had four goals. First, we sought to replicate our prior findings using the full 2×2 design of multicultural experience type crossed by valence. Second, we wanted to account for two potential alternative mechanisms suggested by the intergroup contact literature: right-wing authoritarianism (another intergroup ideology/worldview; Hodson et al., 2018) and ingroup identification (a key representation of deprovincialization; Hodson et al., 2018). Third, consistent with the intergroup literature, we sought to rule out the possibility that our hypothesized effects extend to ingroup targets as well. Finally, we sought to further unpack the mediating role of social dominance orientation. We did so by a) contrasting the "dominance" dimension of social dominance orientation (SDO-D) with the "egalitarianism" dimension (SDO-E), given the former is a stronger predictor of negative intergroup attitudes (e.g., Ho et al., 2012), and b) exploring a potential micro-mediating mechanism that could explain precisely why social dominance orientation is altered by negative multicultural experiences: perceived differences from outgroups. To test these mediation hypotheses, we compared the indirect effect of experience type (multicultural vs. non-multicultural) - at varying valences of experience (negative vs. positive) - on intergroup bias, via each of the potential mediating mechanisms.

8.1. Method

We pre-registered our sample, design, and analyses (see here).

8.1.1. Participants and design

Given our new design tested a potential interaction between experience type (multicultural vs. non-multicultural) and valence (negative vs. positive), we increased our targeted sample size for each cell, following power analysis recommendations for testing interactions (Giner-Sorola, 2018; Simonsohn, 2014). Thus, we recruited 900 individuals through MTurk who had previously been to France (225 per cell, with a goal of at least 150 participants per cell). As in our prior studies, we excluded 174 participants who identified with any of the outgroups of interest (French people, African American people, or gay men), or those who did not follow the instructions for our manipulation, failed an attention check, or admitted to never having actually been to France. Thus, our final sample included 726 adults (48.81% female; $M_{age} = 40.43$, $SD_{age} = 12.20$; 83.75% White). This final sample allowed us to detect a minimum mean difference of 0.29 with 80% power and an alpha of 0.05, though, given the myriad predicted effects tested here, our sample may have been somewhat less highly powered than ideal.

8.1.2. Procedure

We randomly assigned participants to one cell of a 2(experience type: multicultural vs. non-multicultural) x 2(experience valence: negative vs. positive) between-subjects design. In the *negative multicultural experience* condition (N = 181), we asked participants to recall a significant, negative experience from their time in France. In the *positive multicultural experience* condition (N = 176), we asked participants to recall a significant, positive experience from their time in France. In the *negative non-multicultural experience* condition (N = 176), we asked participants to recall a significant, positive experience from their time in France. In the *negative non-multicultural experience* condition (N = 191), we asked them to recall a significant, negative experience they had while in their home country. In the *positive non-multicultural experience* condition (N = 178), we asked them to recall a significant, positive experience they had while in their home country. As in our prior studies, participants spent up to five minutes writing about the details of this experience, then completed the cognitive load filler task of up to 1 min, followed by the measures below.

8.2. Measures

8.2.1. Manipulation check

Participants reported how negative their recalled experience was using the same items as Studies 3a/b ($\rho = 0.96$).

8.2.2. Outgroup prejudice

Participants responded to the same items as in Study 3a to assess prejudice toward French people, African American people, and gay men ($\rho = 0.90, 0.92, 0.90$, respectively).

8.2.3. Negative outgroup stereotyping

Participants responded to the same items as in Study 3a to assess negative stereotypes of French people, African American people, and gay men ($\alpha = 0.93, 0.94, 0.93$, respectively).

8.2.4. Positive outgroup stereotyping

Participants responded to the same items as in Study 3a to assess positive stereotypes of French people, African American people, and gay men ($\alpha = 0.91$, 0.86, 0.90, respectively).

8.2.5. Social dominance orientation (dominance)

We measured social dominance orientation using the same items from Studies 2 - 3b ($\alpha = 0.96$). So, as in our prior studies, these items captured the "dominance" aspect of social dominance orientation. For simplicity, we refer to this as "social dominance orientation."

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8.2.6. Alternative mechanisms

We measured alternative mechanisms that we predicted would not act as clear underlying mechanisms in the same manner as social dominance orientation. Unless noted, the measures below used sevenpoint agreement scales ranging from "strongly disagree" to "strongly agree."

State Negative Affect. We used the same items and anchors as Study 3b ($\alpha = 0.94$).

Right-wing Authoritarianism. Participants responded to the sixitem Very Short Authoritarianism Scale (Bizumic & Duckitt, 2018; $\alpha = 0.82$).

Ingroup Identification. Participants responded to the three-item self-categorization subscale of a social identity measure (Ellemers, Kortekaas, & Ouwerkerk, 1999; $\alpha = 0.91$). This captured the extent to which participants identified as an "American person."

Egalitarianism. Participants responded to the eight-item egalitarianism subscale of the social dominance orientation measure (Pratto et al., 1994; $\alpha = 0.95$). Whereas the "dominance" items capture the notion of some groups being inferior to other groups, the "egalitarianism" items capture the notion that individuals promote group-based equality. Sample items are: "group equality should be our ideal" and "all groups should be given an equal chance in life" (none of which we reverse coded). For simplicity, we refer to this as "egalitarianism."

8.2.7. Attitudes toward non-intergroup targets

We measured attitudes that we hypothesized should *not* be impacted by negative multicultural experiences: the same non-intergroup targets as Study 3b, and ingroup members.

Non-human Targets. As in Study 3b, participants reported their "prejudice" (i.e., liking) toward puppies, hot dogs, computers, and an image of Jackson Pollock art.

Ingroup Targets. Participants reported prejudice and stereotyping toward ingroup members ("American people") in the same way as other targets: two items captured prejudice ($\alpha = 0.88$), and ten captured stereotyping – five negative items ("materialistic," "competitive," "aggressive," "privileged," and "impulsive;" Stephan et al., 1993; $\alpha = 0.85$) and five positive ("patriotic," "proud," "independent," "outgoing," and "friendly," Stephan et al., 1993; $\alpha = 0.86$).

8.2.8. Potential micro-mediating mechanism

Perceived Differences between Ingroups and Outgroups. To help further unpack *why* negative multicultural experience increase social dominance orientation, participants reported how different they are from the typical French person, African American person, and gay man ($\alpha = 0.70$) on a seven-point scale ranging from "very similar" to "very different."

8.3. Results

Given our four conditions, for each outcome we first conducted a two-way ANOVA (with type 3 sum of squares, given unbalanced cell counts) to test for an interaction of experience type and valence. Our hypotheses centered around whether there was an interaction between experience type and valence on each outcome but, for full transparency, we report main effects as well. We then tested mean differences across conditions, with a focus on comparing the negative multicultural experience condition to the other three conditions (Fig. 6). We then conducted mediation tests as in Studies 2 - 3b.

8.3.1. Manipulation check

There was a significant main effect of experience valence, F(1, 722) = 3722.78, p < .001, $\eta_p^2 = 0.838$, and experience type, on negativity of the experience F(1, 722) = 10.98, p < 001, $\eta_p^2 = 0.015$. As expected, the interaction between experience type and valence was significant: F(1, 722) = 11.81, p = .001, $\eta_p^2 = 0.016$. As expected, participants in the negative multicultural experience condition recalled a more negative

experience (M = 5.95, SD = 1.35) compared to those in the positive multicultural experience (M = 1.37, SD = 0.84; t(355) = 38.30, p < .001, d = 4.07) and positive non-multicultural experience conditions (M = 1.36, SD = 0.78; t(357) = 4.36, p < .001, d = 4.16), but as in Study 3b, recalled a *less* negative experience than those in the negative non-multicultural experience condition (M = 6.48, SD = 1.19; t(370) = -4.08, p < .001, d = -0.42). Thus, our manipulation worked as expected, though as in Study 3b, our comparison between those in the negative multicultural (vs. negative non-multicultural) may actually be quite a conservative test of our hypotheses, given higher levels of experience negativity reported by those in the negative multicultural experience condition compared to the negative multicultural experience condition compared to the negative multicultural experience condition.

8.3.2. Outgroup prejudice

French People. There was a significant main effect of experience valence, F(1, 722) = 40.69, p < .001, $\eta_p^2 = 0.053$, and experience type, on prejudice toward French people, F(1, 722) = 3.89, p = .049, $\eta_p^2 = 0.005$. As expected, the interaction between experience type and valence was significant: F(1, 722) = 11.90, p = .001, $\eta_p^2 = 0.016$. Participants in the negative multicultural experience condition evaluated French people significantly more negatively (M = 3.00, SD = 1.62) than those in positive multicultural experience (M = 2.05, SD = 1.05, t(355) = 6.53, p < .001, d = 0.69), positive non-multicultural experience (M = 2.19, SD = 1.18; t(357) = 5.38, p < .001, d = 0.57) and negative non-multicultural experience conditions (M = 2.47, SD = 1.27; t(370) = 3.47, p < .001, d = 0.36).

African American People. There was a significant main effect of experience valence, F(1, 722) = 19.09, p < .001, $\eta_p^2 = 0.026$, but not experience type, on prejudice toward African American people, F(1,722) = 0.397, *p* = 529, η_p^2 = 0.000. As expected, the interaction between experience type and valence was marginally significant: F(1, 722) =3.20, p = .074, $\eta_p^2 = 0.004$. Participants in the negative multicultural experience condition evaluated African American people significantly more negatively (M = 2.59, SD = 1.62) than those in positive multicultural experience (M = 1.95, SD = 1.15; t(355) = 4.33, p < .001, d =0.46) and positive non-multicultural experience conditions (M = 2.07, *SD* = 1.39; *t*(357) = 3.28, *p* = .003, *d* = 0.35). Differences between those in the negative multicultural experience condition and negative nonmulticultural experience condition were marginal (M = 2.34, SD =1.43; t(370) = 1.60, p = .110, d = 0.17), perhaps reflecting the asymmetry in the strength of the effect of the negative non-multicultural versus negative multicultural experimental manipulation.

Gay Men. There was a significant main effect of experience valence, *F* (1, 722) = 7.77, p = .005, $\eta_p^2 = 0.011$, and a marginally significant effect of experience type, on prejudice toward gay men, *F*(1, 722) = 2.56, p = .110, $\eta_p^2 = 0.000$. As expected, the interaction between experience type and valence was significant: *F*(1, 722) = 5.70, p = .017, $\eta_p^2 = 0.008$. Participants in the negative multicultural experience condition evaluated gay men significantly more negatively (M = 2.98, SD = 1.76) than those in positive multicultural experience (M = 2.36, SD = 1.45; *t*(355) = 3.63, p < .001, d = 0.38), positive non-multicultural experience (M = 2.45, SD = 1.67; *t*(357) = 2.90, p = .004, d = 0.31), and negative non-multicultural experience condition = 2.78, p = .006, d = 0.29).

8.3.3. Negative outgroup stereotyping

French People. There was a significant main effect of experience valence, F(1, 722) = 29.89, p < .001, $\eta_p^2 = 0.040$, but not experience type, on negative stereotyping toward French people, F(1, 722) = 0.69, p = .405, $\eta_p^2 = 0.000$. As expected, the interaction between experience type and valence was significant: F(1, 722) = 8.74, p = .003, $\eta_p^2 = 0.012$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of French people (M = 2.59, SD = 1.10) than those in positive multicultural experience (M = 1.98, SD = 0.90; t(355) = 5.79, p < .001, d = 0.61), positive non-multicultural



Negative Multicultural
Positive Multicultural
Negative Non-Multicultural
Positive Non-Multicultural



Note. Error bars represent ± 1 standard error. ^{ns}p > 0.10; $^+p < .10$; $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$. Significance of pairwise comparisons determined relative to negative multicultural experience condition.

experience (M = 2.13, SD = 0.89; t(357) = 4.35, p < .001, d = 0.46), and negative non-multicultural experience conditions (M = 2.32, SD = 1.03; t(370) = 2.51, p = .012, d = 0.26).

African American People. There was a significant main effect of experience valence, F(1, 722) = 19.29, p < .001, $\eta_p^2 = 0.026$, but not experience type, on negative stereotyping toward African American people, F(1, 722) = 0.79, p = .373, $\eta_p^2 = 0.001$. As expected, the interaction between experience type and valence was significant: F(1, 722) = 10.27, p = .001, $\eta_p^2 = 0.014$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of African American people (M = 2.44, SD = 1.13) than those in positive multicultural (M = 1.87, SD = 0.83; t(355) = 5.41, p < .001, d = 0.57), positive non-multicultural (M = 2.05, SD = 1.05; t(357) = 3.44, p < .001, d = 0.36), and negative non-multicultural experience conditions (M = 2.14, SD = 1.00; t(370) = 2.78, p = .006, d = 0.29).

Gay Men. There was a significant main effect of experience valence, F(1, 722) = 8.90, p = .003, $\eta_p^2 = 0.012$, but not experience type, on negative stereotyping toward gay men, F(1, 722) = 0.24, p = .627, $\eta_p^2 = 0.000$. As expected, the interaction between experience type and valence was significant: F(1, 722) = 8.60, p = .003, $\eta_p^2 = 0.012$. Participants in the negative multicultural experience condition endorsed significantly more negative stereotypes of gay men (M = 3.23, SD = 1.06) than those in positive multicultural experience (M = 2.76, SD = 1.02; t(355) = 4.24, p < .001, d = 0.45), positive non-multicultural experience (M = 2.96, SD = 1.10; t(357) = 2.44, p = .016, d = 0.25), and negative non-multicultural experience conditions (M = 2.96, SD = 1.08; t(370) = 2.44, p = .015, d = 0.25).

8.3.4. Positive outgroup stereotyping

None of the interactions between experience type and valence were significant for positive stereotyping: French people, F(1, 722) = 0.305, p = .581, $\eta_p^2 = 0.000$; African American people, F(1, 722) = 0.754, p = .386, $\eta_p^2 = 0.001$; gay men, F(1, 722) = 1.59, p = .208, $\eta_p^2 = 0.002$.

8.3.5. Social dominance orientation as a mediator

As in our prior studies, we tested mediation using path analysis. To do so, we calculated the indirect effect of experience type (0 = non-

multicultural; 1 =multicultural) – moderated by experience valence (0 = positive; 1 =negative) – on each form of intergroup bias, via the various potential mediating mechanisms. Our prediction was that there would be significant, positive indirect effects of negative (not positive) multicultural experiences on intergroup bias through social dominance orientation (not the alternative mechanisms tested).

As shown in Table A5 (Online Appendix A), all indirect effects of multicultural experiences on intergroup bias, through social dominance orientation, were positive and significant for negative experiences (vs. non-significant for positive experiences). For example, the indirect effect of multicultural experiences (vs. non-multicultural experiences) on prejudice toward French people was positive and significant for negative experiences (*indirect effect* = 0.114; 95% CI: [0.040, 0.231]), but not significant for positive experiences (*indirect effect* = 0.012, 95% CI: [-0.034, 0.092]). This indicates that the impact of negative multicultural experiences on intergroup bias is at least partially explained by social dominance orientation.

8.3.6. Supplementary analyses: ruling out effects on non-outgroup targets

We next sought to demonstrate that negative multicultural experiences do not impact attitudes toward targets that are not explicitly outgroup members.

Non-intergroup Targets. As expected, none of the two-way interactions between experience type and valence were significant for puppies, F(1, 722) = 1.83, p = .177, $\eta_p^2 = 0.003$; hot dogs, F(1, 722) = 0.469, p = .494, $\eta_p^2 = 0.001$; computers, F(1, 722) = 2.135, p = .144, $\eta_p^2 = 0.003$; or an image of a Jackson Pollock painting, F(1, 722) = 0.04, p = .949, $\eta_p^2 = 0.000$.

Ingroup Targets. As expected, the two-way interactions between experience type and valence were not significant for prejudice toward American people, F(1, 722) = 009, p = .923, $\eta_p^2 = 0.000$; negative stereotyping of American people, F(1, 722) = 0.839, p = .360, $\eta_p^2 = 0.001$; or positive stereotyping of American people, F(1, 722) = 1.59, p = .208, $\eta_p^2 = 0.002$.

8.3.7. Supplementary analyses: ruling out alternative mechanisms

Next, we sought to determine whether alternative mechanisms -

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aside from our hypothesized mediator of social dominance orientation – appeared to be more appropriate mediators of the relationship between negative multicultural experiences and intergroup bias. Thus, we reconducted our mediation analyses but included all the potential mechanisms we measured in this study (and allowed each to covary with one another).

As expected, the indirect effects of multicultural (vs. nonmulticultural) experiences on all six measures of outgroup bias (prejudice and negative stereotyping of French people, African American people, and gay men) were significant *only* via social dominance orientation, and these effects were stronger for negative experiences than positive experiences. More specifically, none of the indirect effects through self-categorization (a test of deprovincialization) were significant, none through egalitarianism were significant (suggesting that the dominance aspect of social dominance orientation is the more likely explanatory mechanism), only three of the indirect effects through rightwing authoritarianism were significant, and only two of the indirect effects through state negative affect were significant (Table A6; Online Appendix A). All in all, this suggests that social dominance orientation appeared to be the most appropriate mediator of the potential mechanisms we measured and tested in this study.

8.3.8. Supplementary analyses: testing a potential micro-mediating mechanism

Finally, we tested if perceived differences from outgroup members mediated the relationship between negative multicultural experiences and social dominance orientation (which is subsequently associated with increased intergroup bias). The purpose of this analysis was to help provide one possible explanation for *why* negative multicultural experiences were associated with increased social dominance orientation. We therefore fit a path model whereby perceived differences from outgroup members mediated the path between experience type (0 = nonmulticultural; 1 = multicultural) and social dominance orientation, moderated by the valence of the experience (0 = positive; 1 = negative), before leading to intergroup bias.

As expected, all indirect effects of negative multicultural experiences on intergroup bias, through perceived outgroup differences (and then social dominance orientation), were positive and significant (Table A7; Online Appendix A). In other words, when negative (but not when positive), multicultural experiences (relative to non-multicultural ones) were associated with greater intergroup bias due to corresponding increases in (a) perceived outgroup differences, and then (b) social dominance orientation.

9. Internal meta-analysis of studies

Given our studies spanned multiple outgroup targets, measures, and manipulations, we conducted an internal meta-analysis to test the robustness of the omnibus effect of negative multicultural experiences on intergroup bias. Thus, we used the *metafor* package (Viechtbauer, 2010) to conduct a random-effects meta-analysis. First, to aggregate and compare our effect sizes across studies and measures, we converted observed means for each condition into standardized mean differences (g_r; Hedges, 1981). Second, for studies with more than two conditions, we compared negative multicultural experiences to both control conditions separately (i.e., negative vs. positive; negative vs. control). This gave us the most complete test possible using our data.

Looking across the 48 effects, negative multicultural experiences had a positive effect on intergroup bias ($g_r = 0.398$, SE = 0.025, z = 16.07, p < .001, 95% CI: [0.349, 0.446]). This indicates that across all of our studies (N = 1647) – spanning different manipulations, measures, and outgroups – negative multicultural experiences were positively associated with intergroup bias.

10. General discussion

The current research is among the first to explore the psychological ramifications of explicitly negative multicultural experiences. Across five studies using mixed methodologies, different samples, and a variety of experimental paradigms, we found consistent evidence that when multicultural experiences are explicitly negative, they can actually increase various forms of intergroup bias, contrary to prior evidence showing that multicultural experiences only decrease outgroup bias (Tadmor et al., 2018, 2012). This work shows that a robust finding from broader research on intergroup contact - the negative valence asymmetry of intergroup contact (e.g., Paolini & McIntyre, 2019) - also extends to the multicultural experiences literature. Furthermore, and also consistent with previous findings in the intergroup contact literature, we found that the effect of negative multicultural experiences reliably generalized to outgroups unrelated to the specific experience (i.e., a secondary transfer effect; Meleady, Crisp, Hodson, & Earle, 2019) principally to those from stigmatized groups (i.e., African American people; gay men). Importantly, such negativity did not extend to ingroup targets (American people) or non-human targets (e.g., puppies; hot dogs; computers; art). This suggests that how subsequent intergroup bias manifests depends on the specific type of multicultural experience one has, or which aspects of the experience are salient. Overall, this adds an important and novel caveat to prior work that has yet to fully consider the valence of multicultural experiences (e.g., Tadmor et al., 2018, 2012).

We also identify, test, and rule out multiple competing mechanisms: general negativity (state negative affect); deprovincialization (ingroup identification); and alternative intergroup ideologies/worldviews (right-wing authoritarianism). We further isolate a) what precisely about social dominance drives intergroup bias stemming from negative multicultural experiences (the dominance, rather than egalitarianism, dimension; consistent with prior work; e.g., Ho et al., 2012), and b) why social dominance mediates our hypothesized effects (negative multicultural experience exacerbate perceived differences between ingroups and outgroups). Thus, we further highlight the importance of considering the valence of intergroup contact (particularly with respect to experiences with different cultures) for downstream effects on intergroup bias.

We believe the current findings are timely and relevant given the increasing degree of globalization and ease with which individuals can now travel and interact with people from different cultures and nations. Although the current results do not suggest that anyone who has a negative multicultural experience will necessarily become a bigot (and indeed, it is important to note that overall levels of stereotyping and prejudice were actually fairly low in absolute terms across conditions in our studies), our findings do suggest that negative multicultural experiences have the potential to complicate the experience of cross-national contact. Although our work does not obviate findings from prior work that show non-negative multicultural experiences have the potential to reduce outgroup bias (Tadmor et al., 2018, 2012), the current findings do suggest that consequences of such experiences are multifaceted, and dependent in part on the specifics of what people encounter when abroad.

10.1. Theoretical implications

Overall, we believe that our findings have implications for increasing our understanding of the ramifications of globalization in general, and the psychological effects of multicultural experiences in particular. First, we contribute to the multicultural experiences literature by adding additional nuance to our overall understanding of the psychological effects of multicultural experiences. In particular, building on the notion of valence asymmetry from the intergroup contact literature, we highlight how multicultural experiences provide both potential promise *and* peril. Prior work has overwhelmingly focused on how multicultural experiences – largely agnostic to valence – can be beneficial (Maddux et al., 2021). However, the current findings suggest that taking the valence of the multicultural experience into account could potentially yield different outcomes than what has been demonstrated so far. For example, perhaps *decreased* creativity (c.f., Maddux & Galinsky, 2009) or *less* generalized trust (c.f., Cao et al., 2014) might follow explicitly negative experiences. Thus, we add to limited extant work that points to potential downsides of multicultural experiences (Chua, 2013; Lu et al., 2017).

Second, our focus on the impact of negative multicultural experiences also contributes to work specifically on how multicultural experiences influence intergroup bias (e.g., Tadmor et al., 2018, 2012), as well as intergroup contact more generally. Indeed, scholars have recently called for an increased focus on negative intergroup contact (Pettigrew, 2021; Schäfer et al., 2021), and so far, relatively few studies have focused on explicitly negative *multicultural* contact in particular (e. g., Meleady et al., 2020; Paolini et al., 2010; Schäfer et al., 2021). Indeed, work that compares positive to negative intergroup contact overwhelmingly tends to examine intergroup contact within one's national borders – such as "contact quality" with cultural/ethnic minority members, immigrants, or fictitious outgroups (e.g., Barlow et al., 2012; Khan & Pedersen, 2010; Paolini et al., 2014; see Graf et al., 2014 and Stark, Flache, & Veenstra, 2013 for exceptions). Although these findings are certainly insightful, we suggest focusing on the broader construct of negative multicultural contact could help the intergroup contact literature find new insights and account for a wider variety of forms of intergroup contact. By focusing on negative multicultural experiences, particularly across multiple countries in different parts of the world, we heed calls to "more directly [test] contact in its many forms and its effects on the multifaceted outcomes" (Hodson et al., 2018, p. 539), and identify an especially relevant and generalizable source of negative intergroup contact in our increasingly globalized world.

Third, our focus on social dominance orientation as an outcome of negative multicultural experiences highlights the importance of considering how multicultural experiences drive intergroup ideologies/ worldviews. The extant multicultural experiences literature has only considered deprovincialization-based explanations (e.g., need for cognitive closure) for why multicultural experiences affect intergroup bias. But, the intergroup contact literature notes that deprovincialization is only one pathway by which intergroup contact influences bias (Hodson et al., 2018). By measuring both intergroup attitudes/worldviews (social dominance orientation; right-wing authoritarianism) and deprovincialization mechanisms (ingroup identification), we provide a comprehensive test of how multicultural experiences influence cognitions in more ways than previously thought. Our findings also suggest that social dominance orientation (specifically the dominance, rather than egalitarianism, component) may drive the effects of negative multicultural contact more so than previously explored mechanisms. Furthermore, we suggest one reason why negative contact drives changes in social dominance orientation: exacerbation of perceived differences between ingroup and outgroup members. This is consistent with the notion that negative contact can motivate people to create separation from outgroup members (e.g., Meleady & Vermue, 2019) due to perceived differences in values or norms (e.g., Stephan, 2014). Thus, we fill a key gap in the multicultural experiences literature - by investigating valence of experiences - and, by identifying a mechanism that captures individuals' intergroup ideologies/worldviews, align our work with the broader intergroup contact literature.

10.2. Limitations and future directions

However, there are also limitations to our work that future work should address. First, we investigated the gestalt valence of a given multicultural experience but did not disentangle the myriad dimensions by which experiences can vary. For example, the effect of a multicultural experience may hinge on whether the negativity derives from a specific

type of interaction (e.g., a rude interaction vs. food poisoning), or the significance of the experience (e.g., being fired from an expatriate job vs. treated rudely by a waiter). However, as a first step to address this, we re-analyzed our data after coding the experiences participants wrote about as part of our manipulations. In line with the definition of multicultural experiences - "exposure to or interactions with elements or members of a different culture(s)" (Maddux et al., 2021, p. 345) – we coded whether each experience involved a) interactions with members of "foreign" outgroups (e.g., a rude interaction with a French local), and b) exposure to elements from a "foreign" culture (e.g., getting food poisoning from escargot). Results revealed that negative multicultural experiences increase social dominance orientation especially when involving interactions with members from "foreign" cultures (we provide further details on this in Online Appendix B). Future research should continue to unpack these effects with respect to specific details of the negative valence of a given multicultural experience.

Second, we focus on stereotyping and prejudice as measures of intergroup bias and use self-report measures of each. We also measured prejudice using two items (i.e., disliking and reverse-coded liking of outgroups), and some of these measures demonstrated lower than ideal internal reliability (particularly in Study 1). Future research could address this by (a) investigating whether negative multicultural experiences lead to increased generalized discrimination (i.e., *behavioral* intergroup bias) in addition to stereotyping and prejudice alone, and (b) using measures of prejudice with more, or different, kinds of items (e.g., Hugenberg & Bodenhausen, 2003). Also, given that explicit self-report measures may differ from more implicit measures (e.g., Payne, Cheng, Govorun, & Stewart, 2005), future work should consider whether implicit, as well as explicit, measures of stereotyping and prejudice are affected in a similar or different manner.

Third, we focused on targets from often-stigmatized outgroups specifically African American people and gay men - to test secondary transfer effects. We did so because prior work found reduced bias toward stigmatized outgroups following positive or neutral multicultural experiences (Tadmor et al., 2018, 2012, p. 409), and intergroup bias specifically toward stigmatized outgroups is often the focus in the intergroup contact literature, especially as the recipients of negative intergroup bias stemming from social dominance orientation (e.g., Asbrock, Sibley, & Duckitt, 2010; Duckitt & Sibley, 2007). However, future research should investigate the extent to which target status impacts the degree to which outgroup bias generalizes toward other outgroups. We attempted to address this limitation in two ways: a) by testing whether our hypothesized effects extend to "high" status ingroup targets in Study 4 (as expected, they do not), and b) by re-analyzing our existing data. We found that social dominance orientation was more strongly correlated with prejudice and stereotyping toward stigmatized outgroups compared to "admired" ones (i.e., university professors), and that intergroup bias toward admired targets was qualitatively smaller (and often non-significant) compared to stigmatized targets (see Online Appendix B). This suggests that outgroup status plays a key role in understanding our hypothesized effects, and we believe that future research should further explore these effects.

Relatedly, the endorsement of negative stereotypes – or prejudice – toward outgroup members was below the mid-point of most scales in our studies, suggesting that levels of bias were not particularly high in any of our experimental conditions. Nevertheless, the current results are highly suggestive of what the possible ramifications of sustained negative contact may be, and the fact that even a priming procedure or short VR experience could still impact the levels of different types of intergroup bias, as well as across multiple types of outgroups, suggests the possibility that weeks- or months- or years-long experiences abroad could have a much larger and more enduring impact on such group attitudes and beliefs.

Another limitation is that the current work only focused on the experience of (predominately White) American participants in foreign countries, which obfuscates the possible role of participant status. We tried to address this issue by re-analyzing our data. Specifically, we tested whether negative multicultural experiences increase intergroup bias for those who identified with stigmatized/non-majority groups (i.e., those who identified with outgroup targets in our studies). We found that our effects were much more heterogenous, varied, and sometimes non-significant among participants in "lower" status groups (we provide further details on this in Online Appendix B). These preliminary results suggest that negative multicultural experiences may not influence all populations the same way, and that status may indeed be one key construct to understanding this variability going forward. Thus, we urge future work to explore the generalizability of the current effects with larger samples from other types of groups.

Another limitation that future research could address is explaining precisely why negative multicultural experiences influence social dominance orientation. We made a first attempt to address this by a) disentangling the facets of social dominance (dominance vs. egalitarianism), and b) testing a micro-mediating mechanism (perceived differences between ingroup and outgroup members). Although we show that the *dominance* aspect of social dominance is the strongest predictor of intergroup attitudes (consistent with prior work; e.g., Ho et al., 2012), and that perceived differences underlie this effect, we do not elucidate which aspects of "difference" are most important. Future research could explore whether status differences between ingroups/outgroups (Halabi, Dovidio, & Nadler, 2008; Levin, 2004), or differences that signal threats (Costello & Hodson, 2011), or contextual factors of a situation (Pratto & Shih, 2000) are most influential.

Relatedly, although we took many steps to explore the mediating role of social dominance orientation - both in our theorizing and empirical approach - our evidence does have limitations. As one example, we tested multiple alternative explanations that could underlie the effect of negative multicultural experiences on intergroup bias (e.g., negative affect; RWA; deprovincialization), but this does not mean that social dominance orientation is the only possible explanation. Thus, for example, future research could explore whether other outcomes of negative intergroup contact (e.g., anxiety; Stephan, 2014) potentially play a mediating role in our hypothesized effects. As another example, our experiments concurrently measured both our mediator(s) and dependent variable(s), which limits our ability to make causal inferences. This presents the possibility that perhaps the reverse-causal explanation is more appropriate (i.e., that intergroup bias mediates the effect of negative multicultural experiences on social dominance orientation). We attempted to address this by exploring the possibility of reverse causality (see Online Appendix B). This revealed that the bulk of the possible indirect effects that would indicate reverse causality were not significant or in the expected direction. Still, future work could employ alternative designs (e.g., experimental-causal-chains; Spencer, Zanna, & Fong, 2005), such as by manipulating social dominance orientation to further demonstrate its link to intergroup bias.

Finally, the effects we document on stereotyping appears limited to endorsement of *negative* stereotypes (summarized in an internal metaanalysis in Online Appendix B). This aligns with prior work on intergroup contact (e.g., Paolini & McIntyre, 2019), and the negativity bias (e.g., Rozin & Royzman, 2001), but still presents an opportunity for future research. For example, we assessed stereotyping using traits specifically tied to each outgroup (e.g., gay men as "well-dressed"; Morrison & Bearden, 2007) but future work could incorporate broader stereotyping frameworks (e.g., competence vs. warmth; Fiske, Cuddy, & Glick, 2007) to explore this further.

10.3. Conclusion

Societies around the world currently face many conflicts and challenges (e.g., wars, pandemics, political conflict and polarization, and rising inflation) many of which are directly or indirectly linked with globalization. Traveling, working, or living outside of one's home country – or other types of exposure to different cultures or individuals from foreign countries – are now common experiences that increasingly define what it means to live in the modern world. Our research speaks to how complex and nuanced such experiences, and their consequences, may be.

Open science practices

All the data and code used to conduct our analyses are posted online (see **here**). We pre-registered our sample, design, and main effects for Studies 3a, 3b, and 4 (also see **here**).

Declaration of Competing Interest

We have no conflicts of interest to disclose.

Data availability

Data will be made available on the OSF link: https://osf.io/5yk69/? view_only=e61d3f6a9222492e9c228e978091ab00.

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Appendix A. Supplementary data

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