

Does Pandemic Threat Stoke Xenophobia?
How COVID-19 Influenced California Voters' Attitudes toward Diversity and
Immigration in April 2020

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Abstract

Sociological and social psychological theory suggest that biological threat engenders scapegoating of outgroups, especially but not only those associated with novel pathogens. But these theories fail to show how racial boundaries and political cleavages shape response to biological threat. We draw on a novel April 2020 survey of California voters, in which half the sample responded to items about the coronavirus before answering questions about attitudes toward diversity, immigration, and affect toward Asian Americans. We also compare attitudes toward immigrants pre-pandemic (September 2019) to those in April to examine temporal change. Consistent with received theory, the COVID-19 prime reduced support for diversity and for a path to citizenship for undocumented immigrants. Yet effects were selective, neither reducing assessments of immigrants' contributions to the U.S. nor increasing negative affect toward Asian Americans. Priming effects varied by ethnoracial identity and political belief, with attitudes towards a citizenship pathway becoming more negative among conservatives but views of diversity deteriorating among liberals. From September to April, white and African-American attitudes toward immigrants were unchanged, as positive views among Asian Americans and Latinos improved further.

*OSF Preregistration at <https://osf.io/krhec>. Authors' names are listed alphabetically, as this was a fully collaborative effort. We thank Maria Abascal and Jennifer Lee for helpful comments on an earlier draft.

Does Pandemic Threat Stoke Xenophobia? How COVID-19 Influenced California Voters' Attitudes toward Diversity and Immigration in April 2020

Throughout U.S. history, dominant groups have scapegoated immigrants during epidemics, repeatedly displaying xenophobia during medical crises (Markel & Stern 2002). Political leaders including President Trump blamed China for the pandemic and journalists have provided abundant evidence of hate crimes against Asian Americans justified by reference to the “Chinese flu.” But we know little about the scope and depth of this anti-immigrant reaction, and whether it targets only Asians and Asian Americans or is generalized to immigrants more broadly.

We use a survey experiment to assess the COVID-19 pandemic’s impact on approximately 8800 registered California voters’ attitudes related to immigrants and immigration. California’s diversity enables us to explore the views of white, Black, Asian and Latino citizens, all of whom are represented in substantial numbers. The survey experiment examines the effect of priming awareness of COVID-19 on attitudes toward diversity, immigrants’ contributions to the U.S., and a pathway to citizenship for undocumented individuals, and on negative affect toward Asian Americans. We also exploit the presence of an item about immigrants’ contributions on an earlier survey to examine change between September 2019 and April 2020. We find that attitudes toward diversity and toward a pathway to citizenship were more negative among the treated group, but that attitudes toward Asian Americans and immigrants’ contributions to the U.S. were not. Moreover, between September and April attitudes toward immigrants’ contributions became *more positive* due to increased solidarity among Asian-American and Latino voters.

Our results suggest that increasing the salience of disease threat can increase some manifestations of xenophobia, but that the results vary with question content and with respondents' ethnoracial identity and political ideology. Moreover, we find that ethnoracial and ideological differences condition pandemic response.

Xenophobia, Immigration and Disease

Scapegoating immigrants during public health crises is an American tradition. Irish immigrants were held responsible for cholera in the 1850s (Markel 1999), tuberculosis was called “the Jewish disease” in the 1890s (Kraut 2010), and Italian immigrants were blamed for the 1916 polio epidemic (Kraut 1994). In the west, Chinese immigrants were frequent targets of medical scapegoating (Trauner 1978; Shah 2001): from 1876 to 1887, San Francisco public health officials, with flimsy evidence, blamed a series of smallpox epidemics on Chinese immigrants. Chinese-Americans were also held culpable for outbreaks of plague and subjected to forced relocation (McClain 1988). Mexican immigrants were likewise scapegoated for typhus cases in Texas in 1916 and plague in Los Angeles in 1924, and Mexican immigrants were subject to quarantine, medical inspection at border crossings, and forced disinfection through the 1930s (Molina 2006).

More recently, Haitian Americans were targeted during the AIDS epidemic (Fairchild & Tynan 1994). Asian Americans were scapegoated during the 2003 SARS epidemic (Tessler, Choi, and Kao 2020). U.S. Latinos faced discrimination in 2009 after the H1N1 (“swine flu”) virus was alleged to have originated on a Mexican pig farm (Huan et. al 2011). And in 2016, African immigrants were shunned after Ebola afflicted a visitor from Liberia (Morris 2017).

The Covid-19 pandemic’s racialization by President Trump and others (Fritz et al. 2020) crystallized a stigmatizing association between the invasive virus and persons of Chinese descent. Since January 2020, the media have covered a steep rise in hate crimes targeting Asian Americans (Tavernise and Oppel 2020; Lee and Yadav 2020), as Anti-Asian hate speech increased markedly on both alt-right and mainstream Internet sites (Schild et al. 2020). Scores on an online implicit-bias test designed to tap the belief that citizens of European descent are “more American” than Asian-Americans had steadily declined from 2007 through early 2020,

but showed a sharp increase by March 2020, especially among conservatives (Darling-Hamond et al. 2020). In March 2020, the FBI warned local law enforcement to prepare for an increase in anti-Asian-American hate crimes (Margolin 2020) and the CDC warned that racial scapegoating represented yet another form of pandemic risk (2020).

Although Asian-Americans have borne the brunt of discrimination, we also examine pandemic effects on attitudes towards immigrants and diversity more broadly. Asian Americans represent a significant and internally diverse part of California's ethnically diverse population. Asians have been the most rapidly growing immigrant group in the U.S. for two decades, and three quarters of adult Americans of Asian descent are first-generation immigrants. Asians also constitute a large and growing share of the undocumented population. Thus, the category "Asian" is readily elided with the notion of diversity and with the broader category "immigrant" (Lee and Ramakrishnan 2021).

Moreover, Asian Americans are not the only group to have been implicated in the pandemic. Donald Trump used the coronavirus as rationale to restrict sharply movement across the border; and despite stringent measures, some congressional Republicans continued to claim that immigrants were bringing disease from Mexico to the U.S. (Bensman 2020). By June 2020, about one in five Latinos reported experiencing more antagonistic encounters since the beginning of the pandemic (Ruiz, Horowitz and Tamire 2020). And, as we shall see in the next section, theory also leads us to expect that pandemic fallout may generalize beyond the Asian American community.

Theoretical Framework

Two main literatures address the longstanding relationship between xenophobia and infectious disease: work on “symbolic contagion” and research on racial hierarchies and prejudice. We discuss each below.

Symbolic Contagion. In *Purity and Danger* (1966), Douglas noted the universal fear of pollution and use of ritual to protect the social body from contamination. “The body,” she wrote (p. 114), “is a model which can stand for any bounded system. Its boundaries can represent any boundaries which are threatened or precarious.” Her *boundary theory* suggests that when natural or biological factors threaten order in human societies, “outsiders” (however defined) are subject to blame and retaliation. Consistent with Douglas’s view, U.S. immigration opponents have often depicted immigrants as pathogens invading the body politic (Cisneros 2008) – an analogy that primes an association between biological agents and othered humans when disease strikes (Ono and Sloop 2002).

Douglas’s work explains outsiders’ vulnerability to the routine equation of biological and social threat during periods of social instability. *Behavioral-immune-system (BIS) theory* views xenophobia as an evolutionarily adaptive response to disease with maladaptive consequences. In this view, opposition to immigration reflects hard-wired mechanisms that discourage intergroup contact when disease threatens: “The behavioral component of the immune system works outside conscious awareness ... to motivate avoidance of potentially infected objects and people” (Aaroe, Petersen and Arceneaux 2017: 278).

Whereas *BIS theory* posits a specific causal chain, *cognitive scarcity (CS) theory* describes a generic mechanism linking disease and outgroup derogation. Environmental stressors, including disease threat, inhibit higher-order executive function (Payne 2005), produce cognitive

overload and impaired cognition, and engender retreat into primal identities, with attendant hostility towards members of outgroups (Mani et al. 2013).

These theories all produce an expectation of increased anti-Asian sentiment during a pandemic associated with China; boundary theory and CS theory, however, also predict increased anti-immigrant sentiment more broadly. An experimental study that distinguished between effects of fear of penetration (BIS) and general stress (CS) concluded that both increased opposition to immigration, working through separate causal pathways (Aaroe, Petersen and Arceneaux 2017:285). During the H1N1 pandemic, students primed to think about the flu reported more negative attitudes not just toward Mexicans, but also toward immigration, undocumented immigrants, and Muslims (Huan et al 2011). Another experiment (Dutta and Rao 2014) reported that respondents primed with a fictional account of a contagious disease of foreign origin expressed less support for a path to citizenship for undocumented immigrants. And in a recent split-sample study in the Czech Republic, subjects exposed to questions about COVID-19 made smaller payments to immigrants in a variant of the Dictator Game (Bartos et al. 2020).

Research on Prejudice, Race and Racial Hierarchies. Symbolic contagion theories explain why outsiders are targets of scapegoating during pandemics. But definitions of “outsider” are socially constructed and historically variable. To understand why medical panic typically targets immigrants and ethnoracial minorities requires insights from sociological work on racial boundaries, ethnoracial hierarchies and racism.

A rich literature on prejudice starts from the premise that racial categories demarcate critical intergroup boundaries and group identities (Blauener 1972). In the U.S., immigration is implicated in racial categorization (Romero 2008), with ethnic groups slotted into a racial taxonomy that affords greater privilege and resources to whites, even as the definition of “white”

is fluid (Painter 2010). Three insights from this literature inform our argument. First, threat to a dominant group's material or symbolic resources produces or activates prejudice toward racial outgroups (Bobo and Hutchins 1996). Most research has focused on whites' attitudes towards racialized minorities (Blumer 1958); but recent work suggests that racial minorities may also harbor negative feelings toward other outgroups, especially when salient threats are activated. For example, Abascal (2015) found that exposure to stories about rising Latino population increased nationalist identification among African Americans.

Second, this literature provides insight into likely adopters and targets of xenophobic views. *Racial hierarchy theory* (Feagin 2020) depicts a U.S. racial hierarchy tiered by socioeconomic status, with whites on top, Asians next, Latinos following, and Blacks below. In this view, overt and subtle racism, the forms of which differ across groups, sustains the racial hierarchy. Whites are most likely to express negative attitudes toward out-groups; but racism is not limited to whites, as Asians, closer economically to whites in the racial hierarchy, may derogate Latinos and Blacks, and Latinos may derogate Blacks.

By contrast, *racial triangulation theory* (Kim 1999) views racial prejudice as bi-dimensional, with one dimension organized around social resources but another structured around foreignness and belonging. Whereas Asian Americans are subordinate only to whites on the first dimension, they trail both whites and African-Americans and are parallel to Latinos on the second (Kim 1999; Tessler, Choi and Kao 2020). Although whites are perceived as most "American" (Devos and Banaji 2005), Blacks are second, and Latinos and Asians are "forever foreigners" (Kim 1999). It follows that Asians and Latinos are vulnerable to pandemic-related scapegoating from both whites and African-Americans.

Consistent with hierarchy theory, research on minority attitudes has shown that nonwhite groups are significantly more supportive of immigrants and pro-immigration policies than are whites, and that Latinos are more supportive than Asians. Consistent with triangulation theory, Latinos are more supportive of immigration than are African-Americans (Lee and Zhou 2015; Carter 2019). There is, of course, within-group variation based on generational status, political ideology, national origin, and SES (Masuoka and Junn 2013).

Finally, researchers have described the activation of ethnoracial identities under threat, when an elevated sense of “*linked fate*” (Dawson 1995) produces ingroup solidarity across socioeconomic and generational lines during times of crisis. Consistent with this view, research on Latino and Asian Americans reports increased group solidarity in response to hate crimes and anti-immigrant mobilization (Zepeda-Millán 2017, Masuoka and Junn 2013).

Hypotheses

Table 1 summarizes the relationship between the hypotheses and the theories that motivate them. We anticipate that bringing the COVID-19 pandemic by front-of-mind with an extensive series of items about the disease would stimulate concerns about physical and social penetration, as well as producing stress.

***Hypothesis 1:** Respondents primed with questions about COVID-19 express more negative views of diversity than those who are not.*

***Hypothesis 2:** Respondents primed with questions about COVID-19 are less likely to support a path to citizenship than those who are not.*

***Hypothesis 3:** Respondents exposed to COVID-19 items are more likely to express negative views of immigrants’ contributions to the U.S. than those not exposed.*

***Hypothesis 4:** Respondents primed with questions about COVID-19 are more likely to express negative sentiments toward Asian Americans than those who are not.*

Table 1 about here

We also anticipate change in response to the immigrant question between September 2019, before the COVID-19 pandemic, and April 2020. Although changes could result from any events that transpired over that time period, the comparison is useful because its strength – the complete absence of pandemic in September – complements the survey experiment’s weakness, which is that COVID-19 may have been chronically primed among some respondents by April 2020. The item also enables us to compare long-term change in conscious attitudes to cross-sectional variation triggered by implicit associations.

***Hypothesis 5:** Attitudes toward immigrants’ contributions to the U.S. were less positive in April 2020 (after COVID-19) than in September 2019.*

Note that the theories we have reviewed have somewhat different implications for the scope and source of these effects. BIS theory suggests that racial hostility will target those associated with the threat (in this case Asian Americans), although, consistent with racial triangulation theory, derogation could include other groups perceived as culturally distant (e.g. Latinos but not African-Americans). By contrast, if CS theory is right, pandemic threat could corrode intergroup sentiment on all sides, with sources and targets varying by position in the racial hierarchy. Racial hierarchy theory predicts that whites’ attitudes are most likely to be affected by pandemic primes; and racial triangulation theory suggests that Blacks and whites’ views of Asian Americans and immigrants are most vulnerable. Lacking strong priors about which view is correct, we do not hypothesize about these differences.

We expect voters predisposed to harbor negative attitudes toward immigrants and ethno-racial minorities, especially conservatives and supporters of Donald Trump (Hainmueller & Hopkins 2014; Perrin & Ifatunji 2020), to be more responsive to the COVID-19 prime than others. Moreover, conservatives are especially likely to experience emotions associated with outgroup rejection under conditions of threat (Inbar, Pizarro, and Bloom 2009). By contrast, strong commitments to values of diversity and equality may inoculate liberal respondents against pandemic priming effects. Because preliminary analyses demonstrated that effects of conservative identification were even stronger than those of Trump approval, for parsimony's sake we focus on the former.

Hypothesis 6: Effects of COVID-19 priming are stronger among political conservatives.

There is, however, reason to suspect that political liberals may also be susceptible to the COVID-19 prime. Negative racial schemas are available to all dominant-group members (Bonilla-Silva 2006), even though they are not chronically activated among racial liberals. Those already opposed to immigration and diversity may not need priming to activate such views. By contrast, treatment effects may be strongest among persons who ordinarily hold inclusive attitudes, for whom racial stereotypes are latent but still accessible (Sniderman, Hagendoorn & Prior 2004).

Finally, BIS theory suggests that people most vulnerable to disease should be most inclined to avoid outgroups, especially Asian Americans. We expect stronger treatment effects among groups especially vulnerable to COVID-19, such as the elderly and African-Americans, as well as among respondents living in counties with higher infection rates and respondents with higher perceived threat.

Hypothesis 7: Indicators of real or perceived vulnerability to COVID-19 are associated with stronger effects of COVID-19 priming.¹

Data and Methods

The core of the analysis is a survey priming experiment conducted with 8800 respondents to the April 16-April 20, 2020 poll of California registered voters by the U.C.- Berkeley Institute of Governmental Studies. By April 16, California had 27,677 (of 663,000 national) confirmed COVID-19 cases, and 956 Californians (and 28,244 other Americans) had died from the disease.²

Half the respondents answered an extensive battery of questions about COVID-19, including items about perceived risks and concerns, before seeing questions about attitudes toward diversity, immigration, and members of particular ethnoracial groups. For the other half, immigration and intergroup attitude questions followed items about age, employment, and political attitudes and participation.

Invitations to participate in the survey were e-mailed to a stratified random sample of the state's registered voters in order to obtain a balanced sample. After data processing, post stratification weights were applied to align the sample to population characteristics of the state's overall registered voter population. (For details on sample weights and sampling error, see Mitchell [2020].)

The California poll has important advantages related to California's diversity. First, Latino and Asian, as well as non-Hispanic Black and white, respondents are well represented. Second, almost 20% of the weighted sample consists of immigrants, reflecting the many California voters who are naturalized citizens. These characteristics make California a privileged site for transcending the black-white paradigm in intergroup research, but likewise

mean that results are not generalizable to other parts of the U.S., nor to Californians (*e.g.*, non-naturalized immigrants) who have not registered to vote.

Outcome Variables

All variables were recoded, when necessary, so that higher values represented more xenophobic attitudes. Unless noted, all questions refer to the April 2020 survey.

Attitude toward Diversity. Respondents were asked: “Is California’s diversity an advantage or disadvantage?” (a 3-point scale recoded as 1=“More of an advantage,” 2=“Both an advantage and a challenge,” and 3=“More of a challenge and source of problems”). Research (Bell and Hartmann 2007; Abascal and Ganter 2020) has shown that respondents interpret diversity in ethnic and racial terms.

Support for Specific Immigration Policy. Respondents were asked whether: “There should be a formal pathway to citizenship for immigrants who arrived in the U.S. illegally” (a 5-point scale from 1=“Agree strongly to 5=“Disagree strongly”). Using this item, Dutta and Rao (2004) found that an infectious disease prime increased opposition to a pathway. As they point out, the policy influences only the status of immigrants, not their numbers or respondents' exposure to them, so it is not functionally related to health concerns.

Attitude about Immigrants. In April 2020 respondents were asked: “Do immigrants make the U.S. a worse or better place to live?” (a binary variable, recoded as 0=“Better place to live,” 1=“Worse place to live”). In September 2019, respondents were asked: “In your opinion, do immigrants make the United States a better or worse place to live,” with the same coding.

Negative Affect toward Asian Americans: Respondents were asked: “How often have you felt Anger/Fear [separate items] toward Asian Americans?” (3 response options: “1=Rarely,” “2=Sometimes,” or “3=Often”).

Independent Variables

Experimental Condition. The main independent variable was the respondent's condition in the survey experiment: a dummy variable equal to 1 if questions about COVID-19 (the pandemic threat condition) preceded questions about immigration, diversity, and intergroup affect, and equal to 0 otherwise.

September 2019 vs. April 2020. A dummy variable in analyses pooling respondents to the immigrants' contribution item in both months (April=1, September=0).

Ethnoracial Identity. Respondents reported their racial identifications, which were converted into five binary variables (Latino, Black, Asian, Native American/Alaskan Native/Other; with white as the reference category).

Political Ideology and Trump Approval. Respondents reported their political views on a 5-point scale (recoded 1=Very liberal, 2=Somewhat liberal, 3=Moderate, 4=Somewhat conservative, 5=Very conservative). They were asked whether they "approve or disapprove of the way Donald Trump is handling his job as president" using a 5-point scale (recoded to 1=Disapprove strongly, 2=Disapprove somewhat, 3=Neither approve nor disapprove, 4=Approve somewhat, 5=Approve strongly).

COVID-19 Threat Measures

Several questions assessed respondents' relative risk of contracting COVID-19 and their perception of the threat contracting COVID-19 would pose to them or their families. We used these variables to construct two scales of perceived threat: one based on health and one based on economics. The perceived-health-threat scale is built from six equally weighted items that loaded strongly together in a principal-axis factor analysis. The items include a binary indicator for whether COVID-19 is a major threat to "your personal/ family health"; four measures of the

extent to which the following are problems (where responses of “very serious problem” and “somewhat serious problem” were recoded to “1” and responses of “not much of a problem,” “not a problem” or “unsure” were recoded “0”): “getting sick from the coronavirus/getting COVID-19,” “not being able to get medical care,” “not being able to get tested for COVID-19,” and being “unable to get cleaning supplies or hand sanitizer”; and, finally, a 4-point scale of concern about getting coronavirus and requiring hospitalization (recoded so that “very concerned”= 1 and “not too concerned” and intermediate responses = 0). The index ranged from 0 to 6. A measure of perceived economic threat used seven response items that loaded strongly on one factor, including two binary indicators for whether COVID-19 was a major threat to “your employment” and “your personal/family financial situation”; and five recoded binary measures of how much the respondent worried about: “not being able to pay for basic necessities (e.g., food, medication, rent, mortgage),” “losing my job,” “lacking paid sick leave,” “reduced wages or work hours,” and “unable to work remotely or working under dangerous conditions (i.e. close proximity to others)”. Responses choosing the highest threat level were summed to create the index (range 0-7). Geographic threat is quantified as county-level COVID-19 deaths per 1000 residents as of April 18, 2020.³

Individual Controls

All models include controls for education, age, gender, U.S. nativity, Evangelical Christian self-identification, and logged income. Education is coded with dummy variables indicating (a) B.A. degree or higher and (b) some college, with (c) high school or less omitted. Age is untransformed in the main models, but a dummy for age over 60 is used in models examining interactions of treatment with vulnerability. Gender is coded 1=male, 0=female. (“Other” gender is in the model but not reported due to very small numbers.) Income was self-reported on a 9-point scale

ranging from <\$20,000 to >\$200,000, with logged median range values.⁴ U.S. nativity and Evangelical Christian identification are binary. Descriptive statistics and correlations appear in Table 2.

Analytic Strategy

To assess the effect of experimental condition on diversity beliefs, support for a pathway to citizenship, and anger toward or fear of Asian Americans, we use ordered logistic regression (Fullerton 2009) with a dummy variable for condition (treated vs. untreated). To assess the effect of experimental condition on beliefs about immigrants' contributions to the U.S. (a binary variable), we use a logistic regression model, with a binary indicator for treatment condition or, for the combined sample, with an indicator for survey month (September or April). In each model, we include terms for ethnoracial identity, Trump approval, political ideology (liberal/conservative), and controls.⁵ In order to examine variation in response to the pandemic prime, for all of the dependent variables we examine interactions between treatment condition and three sets of moderators: measures of ethnoracial identity, political beliefs, and real or perceived vulnerability to the pandemic.⁶

Table 2 about here

We use the full sample of registered California voters for the analyses. (Replications with just the approximately 80% of respondents who were native-born yielded substantively identical results.) Because attitude measures were recoded when necessary to place conservative or xenophobic views at the high end of their scales, positive coefficients always indicate shifts toward more anti-immigrant or anti-diversity positions. Respondents were randomly assigned to the COVID-19 prime treatment group, but we report treatment effects from models including full

controls, both against the possibility that the groups are imbalanced and to examine other factors that influence these attitudes.

Results

Did Priming Disease Awareness Increase Xenophobic Responses?

We hypothesized that respondents randomly chosen to answer questions about COVID-19 before responding to questions about immigration, diversity, and Asian Americans would express more negative attitudes toward the latter. Priming disease awareness, we reasoned, would stimulate xenophobic reactions consistent with Douglas's Social-Boundary theory, Behavioral Immune System (BIS) theory and Cognitive Scarcity (CS) theory. Results appear in Table 3.

Diversity. Respondents held mixed views: 48% saw diversity as an advantage; 40% saw diversity as both an advantage and disadvantage; and 12% viewed it as a problem or challenge. Consistent with expectations (Hypothesis 1), respondents exposed to COVID-19 items evaluated diversity significantly more negatively than other respondents, both with and without controls. In addition to the treatment effect, approval for President Trump, conservative self-identification, U.S. nativity, and age were associated with negative views of diversity. By contrast, net of other characteristics, being male, having earned a BA, logged income, and Evangelical faith were all significantly associated with more positive evaluations.

Table 3 about here

Pathway to Citizenship. Views of whether the federal government should provide a pathway to citizenship for undocumented immigrants were largely positive, with 72% favoring such a pathway "somewhat" or "strongly," 19% opposing it, and 9% uncertain. Consistent with Hypothesis 2, respondents exposed to the COVID-19 prime were significantly *less* sympathetic to creating a pathway. Trump support, conservatism, being male, age, higher education, logged

income, and Asian-American identity (especially for naturalized citizens) were significantly associated with opposition. By contrast, Evangelical faith and Latino identity were both associated with support for this policy.

Immigrant Contributions. We find no COVID-19 treatment effect on beliefs about immigrants' contributions to the U.S., disconfirming hypothesis 3. All but the most conservative California voters share a consensus on immigrants' value. More than 88% agree that immigrants make the U.S. a better place to live, including almost all "somewhat" or "very liberal" respondents and even a small majority of "very conservative" voters. Logged income, college graduation, and Evangelical self-identification were associated with more positive evaluations. Latinos' and Asian American' attitudes were significantly more positive, and African-Americans' attitudes significantly more negative, than those of whites. Trump approval, conservatism, and age were associated with more negative views.

Negative Affect Towards Asian Americans. Based on BIS theory, we expected the COVID-19 prime to produce more reported anger and fear toward Asian Americans due to politicians' statements associating China and COVID-19. Most Californians appeared unaffected by such statements, however: large majorities indicated that they "rarely" felt either anger (72%) or fear (85%) toward Asian Americans, and fewer than 3% reported that they "often" felt either emotion. There was no treatment effect on these responses, disconfirming hypothesis 4. Men and African-Americans reported experiencing more anger toward Asian Americans than did women or whites, and U.S.-born respondents reported more fear than the foreign-born. Asian Americans reported experiencing both emotions more, presumably during interactions with peers and family members.

Pre- and Post-Pandemic Attitudes about Immigrant Contributions. The COVID-19 survey prime examines the effect of activating an implicit association between the pandemic and attitudes toward immigrants and ethnoracial others. It does not assess long-term effects on attitudes of living through the pandemic. Fortunately, the September 2019 California Poll contained an almost identical item about whether immigrants make the U.S. a “better or worse” place to live, permitting examination of attitude change from before the pandemic to the month in which California began to feel its effects and press coverage was extensive.

Contrary to Hypothesis 5, attitudes toward immigrants’ contributions were significantly *more positive* in 2020 than in 2019. Political conservatism, age, and U.S. nativity were all associated with more negative evaluations of immigrants’ contributions. Income, having graduated from college, and Evangelical self-identification were associated with significantly more positive views. The positive shift from September to April is attributable to an increase in favorable attitudes of Latinos and Asian Americans, two groups with substantial recent immigration. This result is consistent with the shared-fate conception of ethnic identity (Dawson 1995), with Latino and Asian-American citizens circling the wagons around the value of immigration in the face of attacks by politicians and on social media.

Who Responded Most to the COVID-19 Prime?

We turn now to analyses of statistical interactions between the COVID-19 prime and, respectively, ethnoracial identity, political attitudes, and pandemic vulnerability. Because we use ordinal logistic regression, the conventional practice of reporting multiplicative interaction-term coefficients would yield misleading results (Mize 2019). Instead, we first examined each interaction’s joint average marginal effect on the dependent variables. Where the joint effect was statistically significant, we examine marginal treatment effects on the probability of *each level* of the

outcome variable level for *each category* of the interacting variable, assessing significance with second-difference Wald tests (Mize 2019). Significant interactions are presented with graphs illustrating priming effects over the distribution of the moderating variable.

Interactions with ethnoracial identity. Racial hierarchy theory suggests that whites would respond more strongly to the prime than nonwhites. Triangulation theory predicts that whites and African-Americans would be more affected than Asian Americans and Latinos.

Consistent with racial hierarchy theory, Asian Americans and whites exposed to COVID-19 items first were significantly more likely to express *less positive* views of diversity, with more of them selecting the “more of a challenge” option and fewer choosing the most positive response (Figure 1). Exposure to treatment did not affect African-American or Latino respondents. Wald tests comparing the effects of treatment on paired ethnoracial groups found significant differences between effects on Asians vs. those on Latinos and, marginally, on African-Americans, but not between whites and other groups.

The treatment effect for the item asking whether immigrants make the U.S. better or worse was significant only for Asian Americans, for whom treatment significantly increased the (very low) probability of expressing negative views of immigrants (Figure 2). The strength of this effect differed significantly from the (nonsignificant) treatment effect for whites.

Figures 1-3 about here

Results were similar for the pathway-to-citizenship policy question, with significant treatment effects on Asian Americans, who were less likely to support and more likely to oppose a pathway if exposed to the COVID-19 items, but no treatment effects for Latino, African-Americans, or whites (Figure 3). Again, the pairwise difference in the slope of treatment effects between Asian Americans and whites was statistically significant.

There were no differences by ethnoracial identity in the (nonsignificant) effects of answering the COVID-19 items first on anger toward or fear of Asian Americans.

Effects of Liberalism/Conservatism on responsiveness to treatment. We expected the COVID-19 prime to interact with existing beliefs about ethnoracial boundaries, so that treatment would affect conservatives, who express more negative views of immigration and diversity, more than liberal (Hypothesis 6). We acknowledged the possibility, however, that priming might more strongly affect liberals, for whom negative stereotypes are acquired but less chronically activated.

Results for the diversity item (Figure 4) provide support for the second view: the COVID-19 treatment significantly increased the probability of expressing less positive views of diversity, but the effect's strength declined as political conservatism increased. Treatment drove few liberals to embrace the most critical view of diversity, instead shifting them from very positive to mixed. Very liberal respondents in the treatment condition were 10% less likely to indicate that diversity is advantageous, and 10% more likely to describe diversity as both an advantage and disadvantage, than their unprimed counterparts. Primed conservative respondents were unaffected. Even in the treated group, conservatives remained far more negative.

Figure 4 about here

By contrast, responses to the question about a pathway to citizenship were consistent with Hypothesis 6 (Figure 5). The more politically conservative the respondent, the more treatment reduced the probability of support, and increased the probability of opposition.

There were no significant interactions between political beliefs and treatment condition on attitudes about immigrant contributions. Nor were there such interactions for the overall insignificant effects of the COVID-19 primes on anger toward or fear of Asian-Americans.

Impact of COVID-19 Threat on the Strength of the Treatment Effect. Following BIS theory, we posited (Hypothesis 7) that COVID-19 priming effects would be greater for respondents who experienced more real or perceived pandemic threat: Black or Latino respondents, respondents over 60, respondents in counties with high death rates, or respondents reporting high perceived health or economic threat. None of these expectations received empirical support. Indeed, contrary to expectations, exposure to the COVID-19 prime was associated with *more positive* attitudes toward diversity among older Californians.

Study Limitations

Before we discuss these results, several limitations must be noted. First, the sample includes only registered voters. If eligible voters who fail to register are more politically alienated, ideologically extreme or mentally unstable than registered voters, we may underestimate the impact of the pandemic on negative attitudes toward immigrants or Asian Americans. Second, our sample is limited to California residents, a uniquely ethnoracially diverse population, with high rates of immigration and many naturalized citizens among its voters. This afforded a sample that included many Latinos and Asian Americans, who are often underrepresented in national surveys. But because intergroup relations are the product of particular histories and intergroup ecologies (Wimmer 2013), results might differ in other parts of the U.S. Third, we lack information on Latino and Asian-American respondents' national origins. Each of these pan-ethnicities include people from many nations, with significant internal variation in perspectives (Okamoto and Mora 2014). Fourth, media coverage of the coronavirus and life changes that accompanied the pandemic may have chronically activated awareness of pandemic threat among some respondents by mid-April. Insofar as this occurred, the split-sample experiment may underestimate the influence of the pandemic on attitudes. Finally, politicians'

changing representation of the pandemic makes the objects of disease scapegoating a moving target. References to the “Chinese flu” or the “Kung flu” in late spring may have exacerbated negative effects on attitudes toward Asian Americans. Conversely, high incidence of COVID-19 during summer 2020 in meat-packing plants or other sites with predominantly Latino immigrant workforces may have increased stigma associated with other groups.

Discussion

Our discussion addresses two questions. First, what lessons can readers concerned with the impact of the pandemic on attitudes towards immigrants and Asian Americans draw from our findings? Second, what do the analyses contribute to the evaluation of the theoretical frameworks that structure our hypotheses?

Implications for effects of pandemic on xenophobia. This research originated in concern based on press accounts, theory, and historical precedent, that the COVID-19 pandemic was poisoning some Americans’ feelings toward immigrants and immigration and creating hostility toward Asian Americans. Based on this survey experiment, we found mixed evidence that this had occurred among California voters. Priming awareness of pandemic threat with a battery of items about COVID-19 did lower evaluations of California’s diversity and reduce support for a policy creating a pathway to citizenship for undocumented immigrants. At the same time, most California registered voters continued to believe that immigrants make the U.S. a better place, to an even greater extent in April than before the pandemic in September. Taken together, these results suggest that the pandemic may have exacerbated discomfort with policies aimed at assisting groups perceived as outsiders, without altering respondents’ self-understanding of the U.S. as a nation of immigrants.

Additionally, against the backdrop of a well-documented increase in anti-Asian hate crimes, we find no evidence that increasing the salience of the pandemic in the context of a survey yielded greater anti-Asian affect. Specifically, exposure to the COVID-19 questions had no effect on self-reports of anger against or fear of Asian Americans. The increase in hate crimes and hate speech is troubling and undeniable; but these results raise the possibility that these increases reflect elite authorization of offenses by already prejudiced persons rather than a broad increase in antagonism toward Asian-Americans (Flores 2017)

Implications for theory. Our main-effect hypotheses are based on Mary Douglas's (1969) boundary theory, which holds that a symbolic homorphism between physical bodies and social collectivities produces a tendency for communities to strengthen boundaries against perceived outsiders in the face of biological threat. Consistent with this perspective, we found that activating awareness of disease threat with a battery of items about COVID-19 produced significantly more negative views of diversity and less support for policies offering a pathway to citizenship for undocumented immigrants among respondents who received this treatment.

That the COVID-19 prime did *not* elicit more negative assessments of immigrants' contributions and failed to increase expressions of anger or fear toward Asian Americans, however, points to limits to boundary theory. The belief that immigrants contribute to American society may have deep roots in the national ethos: both the vagueness of the item's temporal reference and the resonance of the notion that the U.S. is a "nation of immigrants" makes it easy for respondents to endorse this view, even if they are critical of particular immigrant groups or immigration policies. The lack of increased negative affect toward Asian Americans may also reflect contingency in how and against whom boundaries are strengthened, perhaps reflecting the item's use of an insider label ("Asian Americans" rather than "Asians" or "Asian immigrants"), or its

lack of national specificity (“Asian” rather than “Chinese”). It is also possible that the question’s effort to elicit recollection of events made it more affected by variation in intergroup contact and less effective at registering diffuse change.

Behavioral Immune System theory yielded more fine-grained predictions about the targets of pandemic-related fear and anxiety. If xenophobia is an evolutionarily adaptive response to disease threat that focuses on outsiders, hostility should be directed toward Asian Americans, because of their association with the pandemic, Latinos, because of their perceived foreignness, and immigrants in general. Though the theoretical underpinnings are distinct, BIS and racial triangulation theory (Kim 1999), which hold these groups to be vulnerable precisely because they are perceived as foreign, inspire similar predictions. The negative effects of COVID-19 priming on attitudes toward diversity and support for a pathway to citizenship appear consistent with BIS and triangulation theories. However, that the effect was significant for white and Asian-American respondents but not for African-Americans, is inconsistent with BIS models, which suggest that Asian Americans should be targets of attitude change, rather than exhibiting it themselves. Asian Americans’ responsiveness to the treatment may represent anxiety about their own status given whites’ response to pandemic threat, rather than increased xenophobia – an interpretation consistent with the group’s shift towards even more positive views of immigrants’ contributions between September and April. Finally, the absence of increased anger toward or fear of Asian Americans runs strongly counter to BIS theory’s expectations.⁷

The BIS theory expectation that hostility to outgroups is a functional response to novel pathogens was most decisively disconfirmed by failure of real or perceived biological threat to increase the priming effect’s strength. The most direct measure of actual health risk-- county death rate at the time of the survey -- had no effect on susceptibility to the experimental

treatment. Another measure of vulnerability, age, did change in the predicted direction between November and April, as older people became less likely to praise immigrants' contributions to the U.S. while younger people became more favorable. But it interacted with exposure to the COVID-19 treatment to render attitudes toward diversity *more positive* among older Californians. Nor, contrary to expectations of both BIS and CS theories, were perceived economic vulnerability to the pandemic or perceived health risk associated with stronger negative priming effects on any attitude measure.

Finally, we asked whether priming pandemic awareness would more strongly affect respondents already antagonistic to immigrants, for whom the response would be more ideologically syntonetic, or liberal respondents, for whom priming might activate implicit prejudice. Results were mixed. For the policy question -- support for a pathway to citizenship -- the treatment effect on more conservative voters was significantly stronger. By contrast, for attitudes toward diversity, treatment effects were significantly stronger for liberals. "Diversity" is a feel-good concept, more connotative than denotative (Bell and Hartmann 2007): associating it with illness may reduce its positive aura among liberals, who are most prone to embrace it, more than among political conservatives, who already took a dimmer view. By contrast, liberals' immigration-related policy preferences are based on clearly articulated principles and thus less vulnerable to erosion than the more abstract concept of diversity, whereas COVID-19 priming reinforced conservatives well established opposition to permissive immigration policies.

Conclusions

This study demonstrates qualified support for the expectation that biological threat leads affected populations to strengthen symbolic boundaries against perceived outsiders. We found

that this dynamic was evident in more negative views of policies that help undocumented immigrants and of the hazy notion of “diversity” rather than in more negative feelings toward Asian Americans in particular or immigrants in general. Furthermore, the effects varied by respondents’ ethnoracial identity and political perspective, illustrating the importance of racial hierarchies and political predispositions in moderating the impact of pandemic threat.

Several unanticipated results open directions for further inquiry. The most striking was the wagon-circling effect, by which Asian Americans’ and Latinos’ approval of immigrants’ contributions to the U.S. -- already high in September -- became even higher during the pandemic. Other items were not asked in September, so we cannot assess how general this mechanism was, nor can we be sure that it was in response to COVID-19. But it raises an important question: Under what conditions will U.S. citizens in ethnically marginalized communities unite in response to a threat and intensify their support for immigrant co-panethnics, rather than distancing themselves from newcomers?

Given this finding of wagon circling over time, the impact of the COVID-19 treatment on attitudes of Asian-American respondents toward diversity, immigrants, and support for a pathway to citizenship is even more surprising. Priming brings to the fore schematic associations that may not ordinarily be activated: they demonstrate the potential for attitude change but not its certainty. Priming awareness of the COVID-19 pandemic produced ambivalence about diversity and immigration among Asian-American respondents more than among members of other ethnoracial groups. Perhaps priming the pandemic also primed awareness of their group’s vulnerability, producing more negative feelings. Or perhaps such respondents associated diversity and immigration with Latino migrants, externalizing the hostility their own group had experienced. The generality of this pattern should be assessed, and its meaning explored in further research.

Third, the failure of the COVID-19 prime to increase anger against or fear of Asian Americans was striking given increases in hate crimes and speech. But this finding requires further exploration: It is possible that social-desirability or self-consistency bias affected responses. Moreover, fear and anger are usually elicited face to face, so that low self-reports may reflect social isolation of non-Asian respondents from Asian Americans.

The contrast in results for attitudes toward diversity and a pathway to citizenship on the one hand, and toward immigrants' contributions and affect toward Asian Americans calls attention to differentiation in the intellectual, moral and emotional grounding of different attitudes related to social diversity. Work is needed to articulate the dimensions of difference and explore their responses to experimental manipulation and social change.

Finally, the extent of attitudinal response to disease threat depends on political and institutional factors and on the progress of the disease itself. Location and timing matter. What we know of the pandemic is constantly changing, and citizens' understandings may depend on political and institutional responses at the national, state and local levels. Future research should explore synchronic variation in places with varied ethnoracial ecologies and political leadership, as well as tracking the impact of political events as the pandemic wears on.

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Table 1: Theoretical Grounding for Hypotheses

Theoretical Source(s)	Proximate Theories	Hypothesis or Implication
Boundary Theory (Mary Douglas)		Hyp. 1. Respondents primed with questions about COVID-19 express more negative views of diversity than those who are not.
		Hyp. 2. Respondents primed with questions about COVID-19 are less likely to support a path to citizenship than those who are not.
	Cognitive Scarcity Theory (CS)	Hyp. 3. Respondents primed with questions about COVID-19 are more likely to express negative views of immigrants' contributions to the U.S. than those who are not.
		Hyp. 5 Attitudes toward immigrants' contributions to the U.S. were less positive in April 2020 (after COVID-19) than in September 2019.
	Behavioral Immune System Theory (BIS)	Hyp. 4 Respondents primed with questions about COVID-19 are more likely to express negative views of Asian Americans than those who are not Hyp. 7. Indicators of real or perceived vulnerability to COVID-19 are associated with stronger effects of COVID-19 priming.
	Ideological Reinforcement Hypothesis	Hyp. 6. Effects of COVID-19 priming are stronger among political conservatives.
Theories of Racial Formation and Prejudice	Racial Hierarchy Theory	Implication: Stronger priming treatment effects for Whites, Asian-Americans, Latinos and African-Americans (in that order)
	Triangulation Theory	Implication: Stronger priming treatment effects for <i>insider</i> groups (Whites, African Americans) than for seemingly foreign <i>outsider</i> groups (Latinos, Asians)

Note: We identify both the overarching theoretical perspectives (the first column) and more specific theories derived from these perspectives (second column). For example, Hypotheses 1-5 and 7 are all consistent with Douglas's theory. BIS theory predicts relatively narrow targets (in this case Asian-Americans) whereas CS theory implies a more dispersed xenophobic reaction (including general views of diversity and immigrants as a group).

Table 2: Descriptive Statistics and Correlations

	Mean	S.D.	Min	Max	Diversity ¹	Immigrants ²	Path ³	Toward Asian Americans: Anger	Toward Asian Americans: Fear	Covid prime ⁴	Latino/a	Black	Asian	White	Male	Female	Trump approval	Conservatism	Age	High school or less	Some college	B.A. or more	U.S.-Born	Income
Diversity	1.64	0.69	1.00	3.00																				
Immigrants	0.12	0.32	0.00	1.00	0.43																			
Pathway	2.12	1.35	1.00	5.00	0.34	0.29																		
Toward Asian Americans: Anger	1.29	0.51	1.00	3.00	0.09	0.07	0.05																	
Toward Asian Americans: Fear	1.15	0.39	1.00	3.00	0.08	0.06	0.04	0.57																
Covid prime	0.51	0.50	0.00	1.00	0.07	0.01	0.02	0.01	0.01															
Latino/a	0.22	0.41	0.00	1.00	-0.03	-0.09	-0.10	-0.01	-0.02	0.00														
Black	0.06	0.23	0.00	1.00	-0.00	0.01	-0.05	0.02	0.01	-0.01	-0.13													
Asian	0.13	0.33	0.00	1.00	-0.02	-0.07	0.03	0.14	0.11	0.02	-0.20	-0.09												
White	0.56	0.50	0.00	1.00	0.02	0.08	0.07	-0.10	-0.06	-0.01	-0.59	-0.27	-0.43											
Male	0.46	0.50	0.00	1.00	0.03	0.04	0.12	0.05	0.03	0.01	-0.05	-0.03	0.01	0.05										
Female	0.52	0.50	0.00	1.00	-0.03	-0.05	-0.12	-0.05	-0.03	-0.01	0.05	0.03	-0.00	-0.05	-0.97									
Trump approval	2.31	1.64	1.00	5.00	0.46	0.46	0.46	0.07	0.07	0.02	-0.02	-0.07	-0.02	0.03	0.12	-0.12								
Conservatism	2.74	1.18	1.00	5.00	0.45	0.37	0.42	0.10	0.10	-0.01	0.04	-0.03	-0.01	-0.03	0.13	-0.11	0.67							
Age	47.92	18.45	18.00	102.00	0.11	0.15	0.16	-0.01	-0.00	0.00	-0.22	-0.05	-0.14	0.30	0.13	-0.11	0.12	0.20						
High school or less	0.28	0.45	0.00	1.00	0.11	0.06	-0.02	0.02	0.03	0.02	0.17	-0.01	-0.05	-0.11	0.00	-0.01	0.10	0.14	-0.10					
Some college	0.28	0.45	0.00	1.00	0.07	0.07	0.06	-0.00	0.01	-0.00	0.04	0.01	-0.04	-0.02	-0.03	0.03	0.07	0.05	0.00	-0.39				
B.A. or more	0.44	0.50	0.00	1.00	-0.16	-0.12	-0.03	-0.02	-0.03	-0.01	-0.19	0.00	0.08	0.12	0.02	-0.02	-0.16	-0.17	0.09	-0.55	-0.55			
U.S.-Born	0.80	0.40	0.00	1.00	0.02	0.05	-0.02	-0.08	-0.07	-0.01	-0.25	0.05	-0.27	0.38	-0.06	0.05	-0.03	-0.10	-0.07	-0.06	0.06	-0.00		
Income	106738	99468	10000	347006	-0.06	-0.05	0.05	-0.03	-0.03	0.01	-0.21	-0.07	0.06	0.18	0.09	-0.08	-0.04	-0.03	0.11	-0.23	-0.13	0.32	0.02	
Evangelical	0.18	0.39	0.00	1.00	0.15	0.12	0.12	0.04	0.03	0.02	-0.02	0.09	0.02	-0.04	-0.02	0.02	0.30	0.35	0.06	0.06	0.03	-0.08	-0.04	-0.07

California poll, April 2020. ¹“Is California’s diversity an advantage or disadvantage?” ²“Do immigrants make the U.S. a worse or better place to live?”

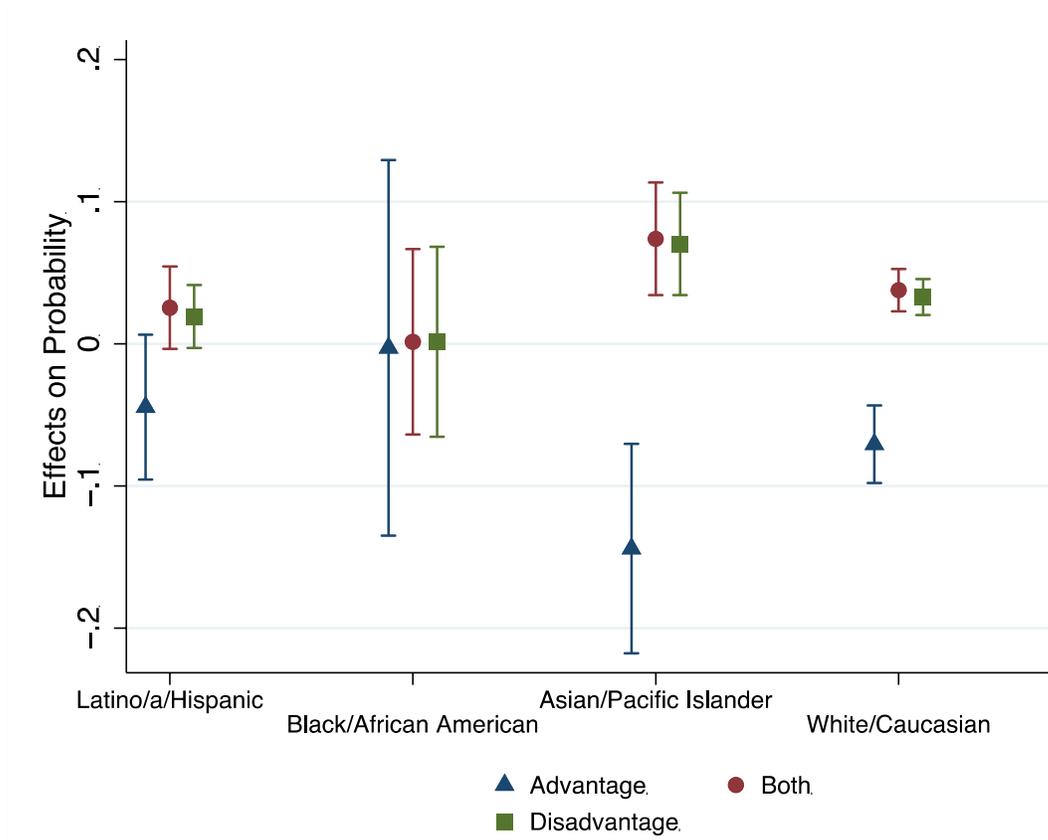
³“There should be a formal pathway to citizenship for immigrants who arrived in the U.S. illegally.” ⁴Covid battery asked first =

Table 3: Ordinal logit and logistic regressions of diversity and immigration attitudes and anti-Asian sentiment on experimental condition and independent and control variables.

	(1)		(2)		(3)		(4)		(5)		(6)	
	Is California's diversity an advantage or disadvantage?		Experiment - Do immigrants make the U.S. a worse place to live?		There should be a formal pathway to citizenship for immigrants who arrived in the U.S. illegally		Anger toward Asian Americans		Fear toward Asian Americans		Sep/Apr - Do immigrants make the U.S. a worse place to live?	
Covid prime	0.351***	(0.060)	-0.051	(0.118)	0.128*	(0.056)	0.020	(0.066)	0.038	(0.089)		
April 2020											-0.421***	(0.102)
Male	-0.177**	(0.061)	-0.057	(0.121)	0.179**	(0.057)	0.224**	(0.069)	0.175	(0.093)	0.179	(0.096)
Latino/a/Hispanic	-0.146	(0.089)	-0.764***	(0.190)	-0.303***	(0.082)	0.068	(0.100)	-0.130	(0.141)	-0.313*	(0.138)
Black/African American	0.155	(0.185)	0.740*	(0.339)	-0.199	(0.164)	0.372*	(0.171)	0.126	(0.253)	0.796**	(0.277)
Asian/Pacific Islander	0.098	(0.109)	-0.532*	(0.245)	0.281**	(0.096)	0.884***	(0.105)	0.657***	(0.150)	-0.309	(0.180)
Trump approval	0.371***	(0.028)	0.727***	(0.055)	0.328***	(0.027)	0.018	(0.032)	0.009	(0.045)	0.820***	(0.032)
Conservatism	0.545***	(0.039)	0.419***	(0.077)	0.460***	(0.038)	0.163***	(0.044)	0.223***	(0.064)		
US-Born	0.339***	(0.090)	0.197	(0.170)	0.005	(0.076)	-0.170	(0.088)	-0.269*	(0.127)	0.316*	(0.135)
Age	0.006***	(0.002)	0.014***	(0.003)	0.006***	(0.002)	-0.001	(0.002)	-0.001	(0.003)	0.011***	(0.003)
Some college	-0.115	(0.091)	0.053	(0.156)	0.307***	(0.091)	-0.006	(0.101)	0.023	(0.134)	-0.132	(0.124)
B.A. or more	-0.452***	(0.088)	-0.444**	(0.151)	0.253**	(0.084)	0.007	(0.095)	-0.036	(0.126)	-0.453***	(0.122)
Logged income	-0.034	(0.034)	-0.239***	(0.064)	0.066*	(0.031)	-0.076*	(0.037)	-0.122*	(0.048)	-0.189***	(0.050)
Evangelical	-0.286**	(0.090)	-0.392**	(0.139)	-0.306***	(0.088)	-0.000	(0.097)	-0.035	(0.126)	-0.147	(0.110)
Constant			-3.491***	(0.750)							-2.694***	(0.589)
cut1	2.202***	(0.394)			3.038***	(0.366)	0.801	(0.430)	1.084	(0.571)		
cut2	4.841***	(0.398)			4.332***	(0.367)	3.485***	(0.444)	3.416***	(0.594)		
cut3					4.986***	(0.367)						
cut4					5.846***	(0.371)						
N	8,472		8,277		8,487		8,339		8,342		12509	

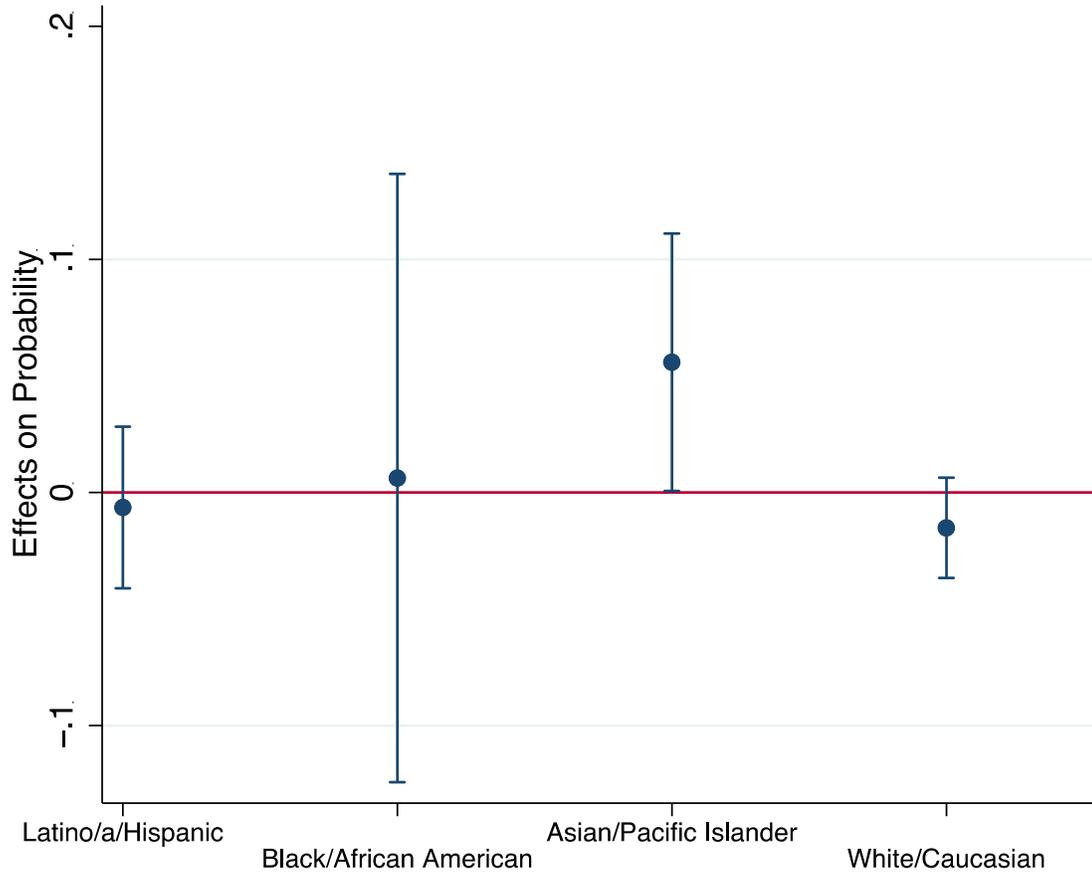
California poll, September 2019 and April 2020. Standard errors in parentheses. * p<0.05. ** p<0.01. *** p<0.001. Reference categories are Covid prime = 0, April 2020 = 0, female, white, non-native and less than high school education. "Other gender" and "Other race" included in models but omitted from table due to small Ns.

Figure 1: Effect of Covid prime on the predicted probabilities of responses to Diversity* by race.



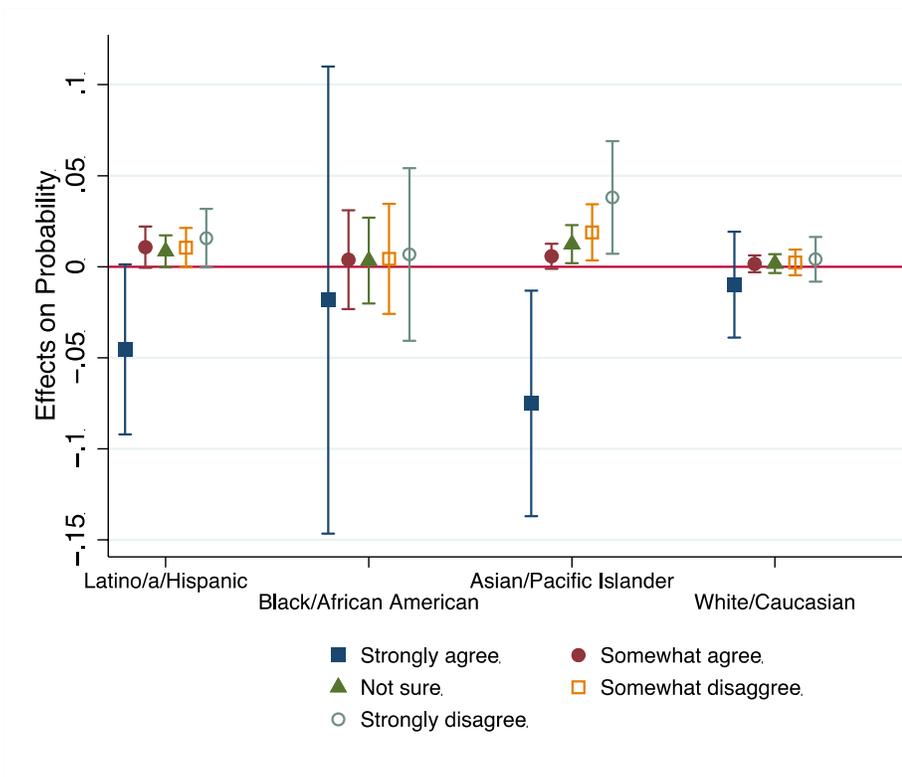
California poll, April 2020. N = 8,472. *"Is California's diversity an advantage or disadvantage?"

Figure 2: Effect of Covid prime on the predicted probabilities of responses to Immigrants' contributions, by ethnoracial identity*



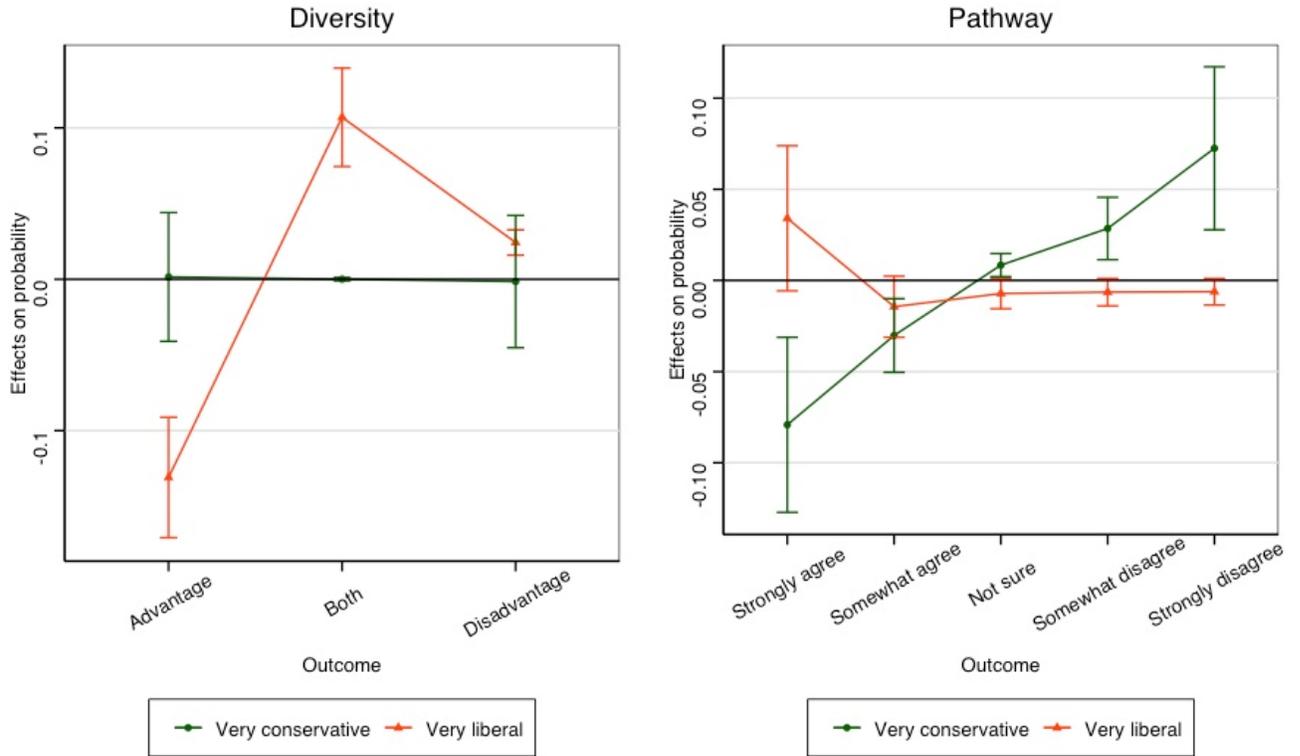
California poll, April 2020. N = 8,277. * “Do immigrants make the U.S. a worse or better place to live?”
High scores represent *less* pro-immigrant responses.

Figure 3: Effect of Covid prime on the predicted probabilities of responses to Path* by ethnoracial identity



California poll, April 2020. N = 8,487. * “There should be a formal pathway to citizenship for immigrants who arrived in the U.S. illegally.”

Figure 4: Effect of Covid prime on the predicted probabilities of responses to Diversity* and Pathway* by conservatism.



California poll, April 2020. N = 8,472. *"Is California's diversity an advantage or disadvantage?" * "There should be a formal pathway to citizenship for immigrants who arrived in the U.S. illegally."

Appendix A: Descriptive statistics for California poll, September 2019

	Mean	S.D.	Min	Max
Immigrants make the U.S. a worse place to live.	0.15	0.35	0.00	1.00
Latino/a/Hispanic	0.26	0.44	0.00	1.00
Black/African American	0.06	0.23	0.00	1.00
Asian/Pacific Islander	0.10	0.30	0.00	1.00
White/Caucasian	0.56	0.50	0.00	1.00
Other	0.03	0.16	0.00	1.00
Male	0.52	0.50	0.00	1.00
Female	0.47	0.50	0.00	1.00
Trump approval	2.22	1.64	1.00	5.00
U.S.-Born	0.81	0.39	0.00	1.00
What is your age?	49.56	18.04	18.00	97.00
High school or less	0.31	0.46	0.00	1.00
Some college	0.30	0.46	0.00	1.00
B.A. or more	0.39	0.49	0.00	1.00
Income	113125.18	103921.78	10000.00	359861.50
Evangelical	0.18	0.39	0.00	1.00
N	4527			

END NOTES

¹ Hypotheses were preregistered with Open Science Foundation (ident. ref.). Hypotheses 1-4 here are subsumed under hypothesis 2 in the preregistration document, and hypothesis 5 here is hypothesis 1. September and April diversity items that were preregistered were too different to compare; and there were compelling reasons to use pandemic threat as a conditioning rather than an independent variable. The relationships posited in hypotheses 6 and 7 here were discussed in the preregistration but not presented as formal hypotheses.

² Johns Hopkins University Coronavirus Tracker, <https://coronavirus.jhu.edu/data/state-timeline>.

³<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>

⁴ The highest category was transformed as per Hout (2004), p. 4, equation 2.

⁵ We omitted the partisanship measure due to multicollinearity. In preliminary analyses including partisanship, liberalism/conservatism, and Trump approval, the latter two consistently had distinct and almost always significant effects, whereas partisanship effects were weaker and often insignificant.

⁶ The effects reported below for the interaction between survey condition and political beliefs are the same when using a measure of Trump approval instead of political beliefs. Interaction effects were examined in clusters (ethnoracial background) or singly (political and disease vulnerability), and significant effects were included together in a complete model (not reported here), in which they remained significant.

⁷ The reader should note, however, that we asked these theories to help us understand *the effects of pandemic threat* on attitudes, not to understand the impact on attitudes of ethnoracial identity per se. Triangulation and racial-hierarchy theories are in some cases consistent with baseline associations of identity with attitudes toward immigration and ethnoracial others.