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Impact of a Pandemic on Attitudes towards Immigrants

Jinghui Zhang
Claremont Graduate University

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Approval of the Dissertation Committee

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Jinghui Zhang as fulfilling the scope and quality requirements for meriting the degree of Doctor of Philosophy in Psychology.

Dr. Michael A. Hogg, Chair
Claremont Graduate University
Professor of Psychology

Dr. William D. Crano
Claremont Graduate University
Professor of Psychology

Dr. Jason T. Siegel
Claremont Graduate University
Professor of Psychology

Dr. Kimberly Rios
Associate Professor of Psychology
Ohio University

Abstract

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Immigration control is an issue that figures prominently in public policy discussions and election campaigns throughout the world. Immigrants can be perceived as posing both realistic and symbolic threats to the host society. During the current global pandemic, these threats are amplified. This research investigated how attitudes towards immigrants were likely to be more negative when the impact of the pandemic was made salient. Based on intergroup threat theory (Rios et al., 2018) and uncertainty identity theory (Hogg, 2021a), two empirical studies investigated the effect of realistic and symbolic threats from the COVID-19 pandemic on people's attitudes towards immigrants. Study 1 (N =303) tested if priming pandemic induced symbolic threats increased social identity uncertainty and found that pandemic-related symbolic but not realistic threats increased social identity uncertainty. Study 2 (N =363) again primed the two types of threat induced by the pandemic, measured their effects on attitudes towards immigrants, and examined if the effects could be explained by social identity uncertainty and collective angst. Results showed that people who perceived more COVID-19 related symbolic threat than COVID-19 related realistic threat experienced more COVID-19 related national identity uncertainty and collective angst, which predicted less positive attitudes towards immigrants. People who perceived more COVID-19 related realistic threat than COVID-19 related symbolic threat experienced less COVID-19 specific national identity uncertainty and collective angst, which predicted their more positive attitudes towards immigrants.

Dedication

In the world you will have tribulation. But take heart; I have overcome the world.

John 16:33

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CHAPTER ONE

Introduction: The Issue of Immigration

In a world with increasing interconnectedness and interdependence among countries and economies, globalization has shrunken the globe through more accessible and extensive worldwide communication, transportation and trade links. A central aspect of globalization is increased movement of and contact among people. Cheaper transportation, extreme economic disparities, the proliferation of failed states, and greater global consciousness have led to higher levels of immigration (UN-DESA, 2015). Worldwide, the number of people living outside of their country of birth has grown exponentially in the last several decades. Approximately one in seven people today are immigrants: 232 million people (3.2% of the world population) are international immigrants, and 740 million are internal immigrants. Since 1990, the number of international immigrants increased by 65% (53 million) in the global North, and by 34% (24 million) in the global South (UN-DESA, 2015), and shows every sign of continuous increase.

With the significant growth in immigration, issues related to immigration control have become increasingly prominent in public policy discussions and election campaigns throughout the world. One such issue that has caught the world's attention lately is the health impact of population mobility (World Trade Organization, 2020). Human Immigration has been a source of epidemics throughout history and several of these have influenced the outcome of wars or changed whole societies (Wilson, 1995). Most recently, the COVID-19 pandemic is causing the largest and fastest decline in international population movement in modern history (WTO, 2020). Current forecasts call for a 13-32% decline in merchandise trade, a 30-40% reduction in foreign direct investment, and a 44-80% drop in international airline passengers in 2021.

Governments around the world have turned to immigration management tools—such as border closures, travel restrictions, and bars on asylum—initially in hopes of keeping COVID-19 from entering their countries, and later as part of a wider suite of mobility restrictions to contain the spread. According to experts, refugees and asylum seekers as well as migrant communities in host nations have falsely been blamed for spreading coronavirus (Sars-CoV-2) and face stigma and discrimination while the COVID-19 pandemic wreaks havoc across the globe (ANADOLU AGENCY, 2020). However, researchers and policymakers have not yet reached a consensus on what drives natives to view immigrants as particularly threatening under a natural disaster such as a global pandemic (Raijman et al., 2003).

This research sought to examine whether perceived threats from the COVID-19 pandemic would affect people's attitudes towards immigrants. It argues that there are mainly two types of perceived threats from the pandemic, realistic (a threat to life and material resources) and symbolic (a threat to one's customs and cultural practices). Both perceived realistic and symbolic threats can be translated into or explained by threats to a society's sense of who they are as a nation via their national identity certainty and threats to the society's future vitality via collective angst. Below is a literature review on how the current global pandemic posed both realistic and symbolic threats to people's lives, causing enormous uncertainty and anxiety in their beliefs, norms, and identity. Driven by desires to reduce this uncertainty or collective angst, the receiving society then excludes immigrants to maintain a positive, distinctive and vital ingroup identity (Esses & Hamilton, 2021). Therefore, the pandemic creates an environment that makes immigrants less welcoming and exceptionally vulnerable to prejudice and discrimination. Given limited studies on attitudes towards immigrants in the context of a global pandemic, two studies were conducted in the end to assess the effects of pandemic-induced threats on people's attitudes

towards immigrants and if the effects could be explained by social identity uncertainty and collective angst.

Perceived Realistic Threat under a Pandemic and from Immigrants

A realistic threat is a material assault on physical or material well-being (Esses et al., 1998). Infectious diseases very obviously pose realistic threats to an individual's (or group's) physical health and economic well-being (Hennekens, et al., 2020; Matsuishi, et al., 2012; O'Leary, Jalloh, Neria, 2018; Smith et al., 2009; Viboud et al., 2006). Diseases have posed one of the largest realistic threats to human survival and welfare throughout both ancient and recent history (Inhorn & Brown, 1990; Wolfe, Dunavon, & Diamond, 2007). The total death caused by infectious disease in human history exceeds the total deaths caused by wars, natural disasters, and any other types of catastrophes (World Health Organization, 2015). Infectious disease has a profound impact on the history and the psychological state of human development. Since the 1940s, there has been a steady increase in the occurrence of global pandemics (Jones et al., 2008), threatening the health and wellbeing of all (for example, SARS-CoV, MERS-CoV, COVID-19).

Indeed, COVID-19 alone has caused 3.3 million global deaths as of today - May 7, 2021, worldwide and a 5.2 percent contraction in global GDP in 2020 (World Bank, 2020). Public health officials have warned that COVID-19 is an "almost perfect killing machine" (Sanchez, 2020; also see Hennekens, et al., 2020), and attempts to stop its spread have created mass unemployment (Davies et al., 2020; Patterson, 2020). Not surprisingly then, a recent Pew Research poll of Americans' perceptions of COVID-19 related threats focused exclusively on the realistic threat (Pew Research Poll, Wave 63.5, March 10, 2020).

When the economic situation in a country is poor or declining, resources become scarce and immigrants are especially likely to be perceived as competing with members of the receiving society (Esses, et al., 2001). Based on previous research, the immigrant population can pose two distinct threats to the host nation. One threat is competition over resources, also known as realistic threats (Rios et al., 2018). Intergroup threat theories (e.g., Blalock, 1967; Riek et al., 2006 for an overview) suggest that when resources are scarce, immigrant minorities are perceived as a source of competition and anticipated negative consequences for the national majority. This can translate into prejudice and discrimination against the minority. Realistic Group Conflict Theory (Campbell, 1965; Sherif, 1966) also argues that perceived group competition for resources sponsors efforts to reduce the access of other groups to the resources. Both theories have received support from multiple research projects in Europe and North America that link scarcity of resources and perceived competition with a higher perceived threat, thereby strengthening anti-immigrant attitudes (e.g., Esses et al., 2001; Green, 2009; Pereira, 2010; Quillian,1995; Scheepers et al., 2002).

Under the current economic downturn due to loss of job at the beginning of the pandemic and the later global inflation (World Bank, 2020), it is thus expected that negative attitudes and discrimination against immigrants would be especially prevalent.

Perceived Symbolic Threat during a Pandemic and from Immigrants

Perceived competition can revolve around tangible goods such as jobs, housing, and social benefits, thus producing realistic threats. It can also penetrate non-tangible goods related to values, religion, and status, causing symbolic threats (Stephan et al., 1999; Stephan & Renfro, 2003). The COVID-19 pandemic precisely poses such a scenario because social distancing—the primary method for combatting its spread—may result in a weakened sense of community or

national identity. People are no longer able to engage in group activities that reinforce and affirm their various important group identities, such as cheering for their favorite teams at sports games, getting together with their families for special occasions, or mourning collectively for the loss of a significant other (Borkowska & Laurence, 2020; ur-Rehman et al., 2020; Maxouris, et al., 2020).

The rapid spread and severe destruction of the disease also damage people's values and lowers their perceived positivity and faith in their communities and community leaders (Borkowska & Laurence, 2020). Popular media and research have shown that people perceive less positivity, intimacy, and cohesion within their groups as the norms, routines, and institutions of social groups that give people a sense of meaning are unraveled by COVID-19 (Borkowska & Laurence, 2020; ur-Rehman et al., 2020; Maxouris, et al., 2020). COVID-19 means that "America [and all Nations] as we knew it, is on hold" (Maxouris et al., 2020). The economy is declining. The bonds of families, communities, and nations are weakening as we practice social distancing. No groups are special or strong enough to escape from being overwhelmed by the pandemic as tens of thousands of people are defeated by the disease all over the world (WTO, 2020). When an ingroup identity such as one’s national identity is weakened and disrupted, outgroups such as immigrants are especially likely to be outcast and derogated by the receiving society, to restore a sense of positive distinctiveness (Abrams et al., 2005; Frederic & Falomir-Pichastor., 2018).

For symbolic threat, Social Identity Theory (Tajfel & Turner, 1986; see also Self-Categorization Theory: Turner et al., 1987) states that the social categorization of people into outgroups (different from the self) and an ingroup (which includes the self) stimulates a

motivation to perceive or achieve a sense of positive group distinctiveness (for more recent integrative overviews of social identity theory see Abrams & Hogg, 2010; Hogg. 2018).

There are two key underlying assumptions of social identity theory. Judgments about the self as a group member are associated with the outcome of social comparisons between the in-group and relevant out-groups. Second, it is assumed that people desire a satisfactory self-image and positive self-esteem. Positive self-evaluation as a group member can be achieved by ensuring that the in-group is positively distinctive from the out-group. Usually, group members will engage in social competition with out-groups to try to make the in-group positively distinctive. For example, in minimal group experiments, people show a consistent bias both towards maximizing in-group profit and toward maximizing differential profit in favor of the in-group, even when the total in-group profit suffers. The theory does not argue that material considerations are unimportant, but that the symbolic meaning of the group's position relative to other groups is a powerful motivating consideration.

One way of achieving and maintaining positive distinctiveness for one's group is by limiting the opportunities of other groups and their members. Immigrants who do not fare well socially and thus are not integrated into the “mainstream” may be perceived as outgroup members and threats to collective identity (e.g., Johnson et al., 1997). When the receiving society’s national identity valence is under question or their values are being threatened, to restore a clear sense of what it means to be a true citizen becomes essential. Under these scenarios, immigrants are especially likely to be perceived as outgroup members and consequentially to be prejudiced against, marginalized, or expelled (Esses et al., 1993; Esses et al., 2001; Kinder & Sears, 1981; Sears & Henry, 2003; Stephan et al., 2002).

On the contrary, a small number of emerging research has found and argued that threats from the COVID-19 pandemic might have presented a unique opportunity for communities to come together and fight the virus as a common enemy and bond through a sense of shared fate (Esses et al., 2021; Muis & Reeskens, 2022; Zagefka, 2022). Consequentially, results from these studies also suggested that group boundaries have weakened during the pandemic and previously held minority outgroups such as immigrants are more integrated, perceived and treated better by majority ingroups. Therefore, the impact of COVID-19 related threats on communities is under debate.

Threats of Uncertainty under a Pandemic

Global pandemics such as COVID-19 can impose both symbolic and realistic threats on people's lives and create a climate of social identity uncertainty amongst the general public. Uncertainty-identity theory helps provide a psychological integration of realistic and symbolic threats posed by immigrants to the host population. Uncertainty-identity theory (Hogg, 2000, 2007, 2012, 2021a, 2021b) argues that people are motivated to reduce feelings of uncertainty relating to their sense of self and identity. Feelings of uncertainty can be derived from an individual's perceptions, attitudes, values, and so forth. The process of social categorization of self and others as described by social identity theory (for an overview see: Abrams & Hogg, 2010; Hogg & Abrams, 1988; Hogg, 2018) maximizes perceived within-group similarity and between-group differences and is thus a highly effective way to reduce self-relevant uncertainty. There is good evidence to support the uncertainty-identity theory (e.g., Grieve & Hogg, 1999, Hohman & Hogg, 2015) – confirming that group identification is motivated by elevated self-uncertainty (see Choi and Hogg's, 2020, a meta-analysis of 35 studies involving 4,657 participants).

The potential rise in anti-immigration sentiment under COVID-19 might result from the underlying psychological mechanism of how people in the receiving society handle rising uncertainty. This uncertainty is deeply rooted in the realistic and symbolic threats imposed by the pandemic. COVID-19 is a test of how people and societies experience and respond to overwhelming uncertainty—existential uncertainty, economic uncertainty, socio-political uncertainty, and uncertainty about our cultural beliefs and practices (Abrams et al., 2021; Krings, et al., 2021; Rosenfeld et al., in press). There are no definite answers for how one can completely avoid infection, survive if infected, or when the economy will recover, things will return to normal, and whom people should trust for advice. What people believe to be strong, positive, and true are either shattered into pieces or called into question. For example, some people were having doubts about or were entirely opposed to the idea of family gatherings during the 2020 holiday season, which was previously held to be one of the most cherished traditions and cultural practices. Yet others still challenge the very idea that there is a global crisis, as misinformation spreads on the internet calling the pandemic a hoax.

This sense of uncertainty is likely to impact one's sense of self and identity in the world. Under this extreme and impactful self-uncertainty, people strive to identify strongly with groups and categories that most effectively reduce uncertainty. People desire a group that could restore their sense of positive distinctiveness. These groups are typically distinctive and well-structured, with simple and clearly defined identities that are largely consensual. However, they also tend to be ethnocentric, xenophobic, and intolerant of diversity and criticism; have authoritarian leaders, and subscribe to populist ideologies that nourish conspiracy theories. The picture painted here is of an uncertainty-induced transformation of society—an increasing appeal of populism, autocracy, and extremist identities (Hogg, 2014, 2021 b; Hogg & Gøtzsche-Astrup, 2021).

When positive distinctiveness of group identities is threatened under the realistic and symbolic threats posed by COVID-19, virulent forms of prejudices can accelerate in growth as group boundaries harden in times of uncertainty and social change (Abrams et al., 2021; Krings, et al., 2021; Rosenfeld et al., in press). Being perceived as "different" can become a justification for group-based discrimination and exclusion against already marginalized groups (Danbold & Huo, 2015; Huo, 2002). Previous research suggests that when threatened with viruses alike, people exhibited higher levels of racism (Navarrete & Fessler, 2006), prejudice against outgroups (Faulkner et al., 2004; O'Shea et al., 2020), and less acceptance of certain groups such as foreigners, immigrants, gays and obese population (Buckels & Trapnell, 2013; Faulkner et al., 2004; Ji et al., 2019; Huang et al., 2011; Inbar et al., 2012; Park et al., 2007; Tybur & Lieberman, 2016; Yamagata et al., 2020). Indeed, one of the most notable and widespread changes brought about by the COVID-19 pandemic may be a sudden spike in hostility toward individuals perceived as “outsiders.” Even when compared to other kinds of threat, the threat of disease can be an especially potent stimulant of prejudice and discrimination against individuals and groups whose appearances and/or actions deviate from local norms (Schaller & Neuberg, 2012).

Immigrants represent one of those groups, and they are often the scapegoat for blame when there is a disease spreading. For example, a common charge laid against immigrants by social media is that they are bringing in infectious diseases that threaten the health of the locals. In Canada and elsewhere, well-known anti-immigrant websites that operated for many years had sections devoted to presenting published news articles that highlighted the association of immigrants with disease (Esses et al., 2013).

Collective Angst

A considerable body of theory and research has highlighted the importance of symbolic and realistic group threat in shaping intergroup behavior (e.g., Branscombe & Wann, 1994; Hornsey & Hogg, 2000; Spears, Tabri, et al., 2018). When members of a group feel threatened, the effect can be increased intolerance and ethnocentrism (Bettencourt, Dorr, Charlton, & Hume, 2001; Jetten, et al., 2021; LeVine & Campbell, 1972; Tabri et al., 2018). Not all types of social identity threats elicit the same type of response (see Branscombe, et al., 1999). Realistic threats that undermine the physical and material aspect of the group (in terms of resources and power) could prompt groups to be particularly defensive against marginal and deviant members through an aversive group-based emotional response—collective angst (Jetten et al., 2021; Wohl & Branscombe, 2008; Wohl & Branscombe, 2009). Previous research has found that collective angst was a mediator between group status threat and opposition to immigration (Jetten et al., 2021). Since the COVID-19 pandemic poses severe realistic threats to the status and resources of many nations and states, there is reason to speculate that attitudes towards immigrants would become increasingly negative and collective angst might be the mediator in this relationship.

CHAPTER TWO

Current Research

To this point, the impact of various pandemic-associated threats on attitudes towards immigrants has been reviewed – these threats include symbolic, realistic, uncertainty identity threats, and collective angst. This research set out to empirically establish and explain the implications of these threats for attitudes towards immigrants.

Though realistic threats can translate into symbolic threats, often in the context of a natural disaster — if everyone in a group dies, so will its culture —the integrated threat theory of intergroup relations suggests that both kinds of threats can have unique consequences (Stephan & Stephan, 2000; Zárate et al., 2004). For example, realistic threats that involve lack of safety or enhanced competition for resources will trigger prejudice against outgroups seen as dangerous or competitive, but not necessarily against outgroups violating fundamental values (Rios et al., 2018).

In the context of COVID-19, there are even reasons to speculate that the perception of one threat might diminish the perception of the other. For example, seeing the pandemic as more of a symbolic threat to a nation's norms and culture rather than a realistic threat to health and physical safety might lead some people to resist practicing public health measures such as social distancing and lockdown. In contrast, viewing the pandemic as more of a realistic threat than a symbolic threat might lead some people to support draconian measures such as enacting the Marshall law and closing the borders which could disrupt normal life and individual freedom that a nation may value and cherish. Already, researchers have found that perceived symbolic and realistic threats predicted different behaviors regarding public health measures and beliefs in

conspiracy theories related to the COVID-19 pandemic (Chen et al., 2022; Kachanoff et al., 2020).

Thus, an integrated approach to study threats brought up by the COVID-19 pandemic is proposed here that differences between the two threats were defined, contrasted, and compared. This research operationalized realistic threat as COVID-19's danger to the physical health and financial wellbeing of both individuals and their group, and symbolic threat as its danger to the group's values and identity, as affirmed by core social processes. The liaison of both threats is that they both induce social identity uncertainty. However, one should expect symbolic threat to induce more social identity-related uncertainty while realistic threat should induce more anxiety about a group's future vitality (Wohl & Branscombe, 2010).

Although research has focused primarily on uncertainty about identity and cultural practices caused by symbolic threats, groups can also experience uncertainty from realistic threats. For example, nations can collectively experience uncertainty about their economic future, universities can collectively experience uncertainty about funding, and natural disasters can produce uncertainty for entire regions of people. Research has shown that these realistic threat indices of self-uncertainty map onto feelings of social identity uncertainty (Godinic et al., 2020, Hogg & Mahajan, 2018) and generally affect behavior as predicted by uncertainty-identity theory (Choi & Hogg, 2020; Gøtzsche-Astrup, 2019).

However, others (Wagonor et al., 2018) have argued that in these instances, it is not uncertainty about one's social identity, but a sense of politico-economic uncertainty where people feel uncertain and anxious about their future resources, economic outlook, and group vitality. These dimensions of realistic threat-induced uncertainty differ in that politico-economic uncertainty is focused on feeling uncertain about possessing tangible resources and economic

and political opportunities, which potentially harms the future vitality of a group and leads to an increase in collective angst (Wohl & Branscombe, 2010), while identity-uncertainty is focused on the symbolic nature of what the group stands for and what it means to be a group member. Limited research has investigated whether this type of realistic threat-induced politico-economic uncertainty produces similar effects as symbolic threat-induced social identity uncertainty. This research addressed this gap by first testing if, like a symbolic threat, a realistic threat induces social identity uncertainty. Secondly, this research also examined if both threats have effects on attitudes towards immigrants and if the effects could be explained by either social identity uncertainty or collective angst.

COVID-19 is likely to be relevant to many group contexts, but this research investigated the national group of the United States of America, given its salience in public, political, and global health discussion (e.g., statistics about the number of cases in America). People in America strive to see their ingroup as both certain and positive. However, COVID-19 has severely threatened Americans' national identity, probably more so than any other country in the world (Kachanoff et al., 2020). For those who think America is great, the very fact that America tops any other countries in the world in terms of total confirmed cases, exponential growth in cases as well as the country's initial lack of testing kits and personal protective equipment, the government's slow and confusing responses to the virus might be particularly threatening.

This research examined if Americans' attitudes towards immigrants were impacted by the perceived symbolic and realistic threats from COVID-19, mediated by a perceived threat on their national identity uncertainty and collective angst. It was predicted that priming people with COVID-19 related symbolic and realistic threats would increase their levels of national identity uncertainty (H1). Subsequently, priming people with COVID-19 related threats would have a

negative effect on their attitudes towards immigrants (H2). Further, the effect of priming realistic threats on attitudes towards immigrants would be mediated by collective angst (H3). The effect of priming symbolic threat on attitudes towards immigrants would be mediated by national identity uncertainty (H4).

To test these predictions, two studies were conducted. Study 1 primed COVID-19 related symbolic or realistic threat and measured national identity uncertainty to establish that priming threats would induce national identity uncertainty. Study 2 again primed both types of threats and measured the effects of threats, national identity uncertainty, and collective angst on attitudes towards immigrants.

CHAPTER THREE

Study 1

Study 1 was a one-factor experiment with three conditions (control vs. symbolic threat vs. realistic threat), aiming to establish that priming COVID-19 related symbolic or realistic threat was priming national identity uncertainty. It was predicted that participants primed with symbolic and realistic threats from COVID-19 would have higher COVID-19 related national identity uncertainty, and national identity uncertainty, compared to the control group (H1).

Method

Participants and Design

A total of 362 participants, who are U.S. citizens, were recruited through Amazon Mechanical Turk and randomly assigned to one of the three levels of threat prime (control, symbolic and realistic). Out of the three hundred and sixty-two, 43 participants were excluded for either having failed the attention checks or not completed the prime as required, leaving a final sample size of 319 (162 female, 154 male, 3 female-to-male transsexuals; M_{age} = 40.61, SD_{age} = 13.43; 76.8% White). Multivariate outlier analysis was conducted, and no outliers were found. The sample size was determined a priori by using the G*Power v3.1(Erdfelder et al., 1996), which showed that the minimum sample size that can yield a power of .80 is 303. Results also indicate that with this sample size the effect size and α value are predicted to be .18 and .05, respectively. A sample size slightly more than the analysis had suggested was collected in case some participants failed to take the experiment seriously.

There was one predictor variable – threat condition (control vs. symbolic threat vs. realistic threat) and two dependent variables - COVID-19 related national identity uncertainty and national identity uncertainty. Demographic variables were measured as control variables.

Procedures and Materials

Participants took online surveys via Qualtrics. The surveys were conducted in January, 2021, a time when COVID-19 was surging in the United States but people were traveling anyway to unite with their families. They first received threat prime developed for this study based on previous research (Rios et al., 2018). Specifically, they were randomly assigned into one of the three conditions: in the control condition, participants were asked to recall what they did the previous day and write down three thoughts related to what they did. In the realistic threat condition, participants read about pandemic-related threats to such things as American public health, the economy, and people's security and wrote down three thoughts about this. In the symbolic threat condition, participants read about COVID-19 related symbolic threat to American norms, values, and customs and wrote down three thoughts related to it. They then answered questions about the perceived symbolic and realistic threat, COVID-19 related national identity uncertainty, national identity uncertainty, and demographics.

Manipulation Check. To check the effectiveness of priming, participants completed a 10-item COVID-19 Threat Scale, which was developed and validated by Kachanoff and colleagues (2020), stating perceived COVID-19 related realistic threat: (a) Your personal health, (b) The health of the U.S. population as a whole, (c) Your personal financial safety, (d) Day-to-day life in your local community, (e) The U.S. economy; 1 *disagree strongly,* 9 *agree strongly,* $\alpha = .75$; and felt COVID-19 related symbolic threat, (f) American values and traditions, (g) The rights and freedoms of the U.S. population as a whole, (h) What it means to be American, (i) American democracy, and (j) The maintenance of law and order in the U.S.; 1 *disagree strongly,* 9 *agree strongly,* $\alpha = .90$.

COVID-19 Specific National Identity Uncertainty. A three-item scale based on relevant literature (e.g., Hogg, 2007) was developed to measure COVID-19 related national identity uncertainty: COVID-19 made me feel uncertain about (a) what America stands for, (b) how great it is to be an American, (c) how special it is to be an American; 1 *not very much*, 9 *very much*, α = .92.

National Identity Uncertainty. A six-item national identity uncertainty scale was adopted from the Social Identity Uncertainty Scale developed, validated, and used by previous research to measure participants' national identity uncertainty (Wagoner et al., 2017). Sample items are: "I feel that the definition of an American identity is unclear," "I feel uncertain about what it means to be an American". Responses were provided on 9-point scales anchored 1 *not very much*, 9 *very much,* α = .96.

Results

Scale Assessment and Demographic Analysis

An exploratory factor analyses with oblimin rotation was conducted on the COVID-19 Specific National Identity Uncertainty Scale and the National Identity Uncertainty Scale. A two-factor solution emerged for each set of items. Factor 1 explained 71.55% (Eigenvalue = 6.44) and beyond the variance explained by Factor 1, Factor 2 accounts for 13.51% of the variance (Eigenvalue = 1.22). National Identity Uncertainty items all loaded on Factor 1 with loadings above .84. The COVID-19 Specific National Identity Uncertainty items all loaded on Factor 2 with loadings above .85. There was a high correlation between the two factors, r = .60, and Factor 1 accounted for most of the variance. Therefore, though the two scales were analyzed separately in this study, they were combined into a single scale in Study 2[1].

[1]Conducting data analysis in Study 1 with the two scales combined or separate does not change the results.

Multivariate analyses were conducted to confirm that the participants in each experimental condition did not differ significantly in terms of demographic variables such as sex, age, and political orientation (*ps* > .35). See Table 1 for descriptive statistics, reliabilities, and correlations of the demographic variables, the manipulation check items, and the dependent variables.

Table 1.

Descriptive Statistics, Cronbach's alphas, and Correlations of the IVs and DVs in Study 1.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Sex	1.53	.52	--							
2. Age	40.61	13.43	-.04	--						
3. Political Orientation	4.11	2.39	-.00	.18**	--					
4. Perceived Realistic Threat	6.94	1.38	.15**	-.07	-.23**	--	(.75)			
5. Perceived Symbolic Threat	4.98	2.15	.04	.04	.32**	.20**	--	(.90)		
6. COVID-19 Specific National Identity Uncertainty	4.24	2.54	-.10	-.16**	-.09	.15**	.35**	--	(.92)	
7. National Identity Uncertainty	4.25	2.46	-.08	-.24**	-.27**	.19**	-.16**	.62**	--	(.96)

Note. $N = 303$; Reliability coefficients are reported in brackets; Means range between 1(low) and 9 (high), except for sex, political orientation, and age; * $p < 0.05$, ** $p < 0.01$.

Manipulation Check

A one-way ANOVA was conducted to examine the effect of priming on the threat manipulation check. The analysis revealed a significant effect of the realistic threat prime on perceived realistic threat, $F(2, 316) = 4.16$, $p = .016$, $\eta^2_p = 0.026$. Simple effect analyses suggested that those in the realistic threat condition reported significantly more perceived realistic threat ($M = 7.2$, $SD = 1.27$) than those in the control condition ($M = 6.65$, $SD = 1.4$), $p = .004$, $d = 0.41$, 95% CI [.17, .93]. However, perceived realistic threat did not differ significantly between those in the realistic threat condition and those in the symbolic threat condition ($M = 6.92$, $SD = 1.44$).

The analysis also revealed a significant effect of the symbolic threat prime on the perceived symbolic threat, $F(2, 316) = 8.72$, $p < .001$, $\eta^2_p = 0.052$. Simple effect analyses suggested that those in the symbolic threat condition reported significantly more perceived symbolic threat ($M = 5.52$, $SD = 2.0$) than those in the control condition ($M = 4.3$, $SD = 2.19$), $p < .001$, $d = 0.58$, 95% CI [.52, 1.94]. However, perceived symbolic threat did not differ signifcantly between those in the symbolic threat condtion and those in the realistic threat condition ($M = 5.0$, $SD = 2.13$).

Taken together, priming worked such that priming pandemic-related realistic threat induced more perceived realistic threat, and priming pandemic-related symbolic threat induced more perceived symbolic threat. However, priming either threat also appeared to invoke the other.

Primary Analysis

Turning to the main hypothesis, a significant effect of threat prime on COVID-19 specific national identity uncertainty and national identity uncertainty was predicted that the participants in the threat conditions were expected to exhibit higher COVID-19 specific national identity uncertainty and national identity uncertainty. A multivariate analysis was conducted. The analysis revealed a significant main effect of prime on COVID-19 specific national identity uncertainty, $F(2, 316) = 4.78$, $p = .009$, partial $\eta^2 = .029$ and national identity uncertainty, $F(2, 316) = 3.73$, $p = .025$, partial $\eta^2 = .023$. Simple effect analyses suggested that those in the symbolic threat condition reported significantly higher COVID-19 specific national identity uncertainty ($M = 4.74$, $SD = 2.54$) than those in the control condition ($M = 3.65$, $SD = 2.42$), $p = .002$, $d = 0.44$, 95% CI [-.40, 1.78]. They also reported significantly higher national identity uncertainty ($M = 4.64$, $SD = 2.42$) than those in the control condition ($M = 3.71$, $SD = 2.17$), $p = .007$, $d = 0.4$, 95% CI [.25, 1.59]. However, those in the realistic threat condition did not differ signifcantly from the control condition in COVID-19 specific national identity uncertainty ($M = 4.24$, $SD = 2.55$) and national identity uncertainty ($M = 4.3$, $SD = 2.64$).

Discussion

Study 1 primed COVID-19 related symbolic and realistic threats and examined if the priming induced national identity uncertainty. Results partially confirmed H1 and suggested that priming symbolic but not realistic threat affected feelings of social identity-uncertainty, lending credence to speculation that COVID-19 related symbolic threats may be the underlying motivational dimension for negative attitudes towards immigrants, although negative attitudes towards immigrants was not measured in Study 1. The results also suggested that realistic threats that were found to provoke politico-economic uncertainty in previous studies (Wagoner et al., 2018) did not induce social identity uncertainty in the current study. However, previous studies

did find the mediating role of collective angst between realistic threats and anti-immigration attitudes (Jetten et al., 2021). In Study 2, collective angst was thus measured as the mediator of the effect of realistic threat on attitudes towards immigrants.

CHAPTER FOUR

Study 2

Building on Study 1, which primed COVID-19 related symbolic and realistic threats and found that only symbolic threat induced a sense of national identity uncertainty, Study 2 was another one-factor experiment with three conditions (control vs. symbolic threat vs. realistic threat) with hypotheses modified based on Study 1 results. Study 2 was very similar to Study 1 and the key difference was the addition of attitudes towards immigrants as the dependent variable and measuring COVID-19 specific national identity certainty and collective angst as mediators between the threat prime and attitudes towards immigrants. It was predicted that priming people with COVID-19 related threats would have a negative effect on their attitudes towards immigrants (H2). Further, the effect of priming realistic threats on attitudes towards immigrants would be mediated by collective angst (H3). The effect of priming symbolic threat on attitudes towards immigrants would be mediated by national identity uncertainty (H4).

Method

Participants and Design

A total of 363 participants, who were all U.S. citizens, were recruited through Amazon Mechanical Turk and randomly assigned to one of the three levels of threat prime (171 female, 191 male, 1 female-to-male transsexual; M_{age} = 39.79, SD_{age} = 12.08; 81.8% White). Multivariate outlier analysis was conducted, and no outliers were found. Because both one-way ANOVA and mediation analyses were planned, the sample size was determined a priori by using the G*Power v3.1, and based on the analysis that requires most participants (Erdfelder et al., 1996). The minimum sample size that can yield a power of 0.80 for one-way ANOVA would require more

participants than the mediation analysis, which is 303 (101 participants per condition). Results also indicate that with this sample size the effect size and α value are predicted to be .18 and .05, respectively. A sample size slightly more than the analysis had suggested was collected in case some participants failed to take the experiment seriously.

There was one predictor variable – threat condition (control vs. symbolic threat vs. realistic threat) and one dependent variable –attitudes towards immigrants. COVID-19 related national identity uncertainty and collective angst were measured as mediators. Demographic variables were measured as potential control variables.

Procedures and Materials

Participants took online surveys via Qualtrics. They first received the threat prime as in Study 1 and completed the same thought listing task. The data was collected in January, 2022, a time when Omicron was spreading rapidly and there was rising inflation.

Manipulation Check. To check the effectiveness of priming, participants completed the same 10-item COVID-19 Threat Scale as in Study 1, stating perceived COVID-19 related realistic threat, $\alpha = .71$; and COVID-19 related symbolic, $\alpha = .87$.

COVID-19 Specific National Identity Uncertainty. Study 2 combines the 3 items COVID-19 Specific National Identity Uncertainty and 6 items National Identity Uncertainty measures in Study 1 into one scale based on the factor analysis results in Study 1. The newly combined scale has six items: The COVID-19 pandemic makes me feel uncertain about (a) what it means to be an American, (b) how great it is to be an American, (c) how special it is to be an American, (d) the characteristics that define being an American, (e) who I am as an American, (f) what American stands for? 1 *strongly disagree*, 9 *strongly agree*, $\alpha = .95$. An exploratory factor

analyses with oblimin rotation was conducted on the scale. A one-factor solution emerged with a single factor explained 81.4% (Eigenvalue = 4.88), and all factor loadings were above .88.

Collective Angst. Five items adopted from previously developed and validated by Wohl and Branscombe (2009) were used to assess collective angst. These items were: (a) I feel confident that the U.S. will survive(reversed), (b) I feel secure about the future of the U.S. (reversed), (c)I feel anxious about the future of the U.S., (d) I feel that the U.S. will always thrive (reversed), and (d) I feel concerned that the future vitality of U.S. is in jeopardy; 1 *strongly disagree*, 9 *strongly agree*, α = .88.

Attitudes towards immigrants Scale. In addition to the same measures used as in Study 1, Study 2 also included the six-item Attitudes towards Immigrants Scale developed, validated, and used by previous research (Abrams & Travaglino, 2018). Sample items are: "Do you think that immigrants make the customs of other people in America worse or better?" "Do you think that immigrants make the traditions of other people in America worse or better?" "Do you think that immigrants make the general way of life of other people in America worse or better?" "Do you think that immigrants make the safety of other people in America worse or better?" "Do you think that immigrants make the financial security of other people in America worse or better?" "Do you think that immigrants make the health of other people in America worse or better?". Responses were provided on 9-point scales anchored 1 *much worse*, 9 *much better,* α = .95.

Results

Demographic variables and Manipulation Check

The relationship between demographics and the prime was explored. A multivariate analysis found no significant main effects of the independent variable-prime condition (control vs. symbolic vs. realistic) on sex, age, and political orientation, *Fs* (2, 359) ≤ 1.98, *ps* ≥ .14.

A one-way ANOVA was conducted to examine the effect of the prime on the threat manipulation check. The analysis revealed a significant effect of the symbolic threat prime on perceived symbolic threat, $F(2, 359) = 3.70$, $p = .026$, $\eta^2_p = 0.02$. Simple effect analyses suggested that those in the the symbolic threat condition reported significantly more perceived symbolic threat ($M = 5.44$, $SD = 1.85$) than those in the the realistic threat condition ($M = 4.74$, $SD = 2.18$), $p = .009$, $d = 0.48$, 95% CI [.17, 1.24]. However, the perceived symbolic threat in the symbolic threat condition was not statistically different from the control condition ($M = 4.92$, $SD = 2.24$).

The analysis did not reveal a significant effect of the realistic threat prime on perceived realistic threat, $F(2, 316) = 4.16$, $p = .85$.

Taken together, priming COVID-19 related symbolic threat might induce more perceived symbolic threat. However, priming COVID-19 related realistic threat did not induce more perceived realistic threat.

Table 2.

Descriptive Statistics, Cronbach's alphas, and Correlations of the IVs and DVs in Study 2.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	
1. Sex	1.47	.5	--								
2. Age	39.79	12.08	.09	--							
3. Political Orientation	4.09	2.35	.00	.16**	--						
4. Perceived Realistic Threat	6.71	1.4	.16**	.00	-.19**	--	(.71)				
5. Perceived Symbolic Threat	5.03	2.12	.08	.08	.40**	.13*	--	(.87)			
6. COVID-19 Specific National Identity Uncertainty	3.53	2.36	.07	-.12*	.10	.06	.47**	--	(.88)		
7. Collective Angst	4.74	1.87	.12*	-.11*	-.06	.10	.18**	.26**	--	(.88)	
8. Attitudes towards immigrants	5.71	1.76	.02	-.12*	-.51**	.14**	-.34**	.01	-.08	--	(.95)

Note. $N = 363$; Reliability coefficients are reported in brackets; Means range between 1(low) and 9 (high), except for sex, age, and political orientation; * $p < 0.05$, ** $p < 0$.

Primary Analysis

Turning to the main hypothesis, it was predicted that there would be a significant effect of the threat prime on attitudes towards immigrants, mediated by COVID-19 related national identity uncertainty and collective angst. A multivariate analysis was conducted. The analysis revealed no significant main effects of the prime on attitudes about immigrants, COVID-19 specific national identity uncertainty and collective angst, Fs (2, 359) ≤ 1.39, ps ≥ .25.

Given the failure of the realistic threat prime, the partial success of the symbolic prime, and the insignificant effects of the threat prime on the dependent variables, the correlations between the self-reported symbolic and realistic threats measured by manipulation check items and other key variables were examined. As seen in Table 2, there was a negative correlation between symbolic threat and attitudes towards immigrants and yet a positive correlation between realistic threat and attitudes towards immigrants. Moreover, the symbolic threat was positively correlated with both COVID-19 specific national identity uncertainty and collective angst.

A mediation analysis was thus conducted in examining whether COVID-19 specific national identity uncertainty and collective angst mediated the relationship between self-reported threats and attitudes towards immigrants. Given the opposite correlations between the two types of threats and attitudes towards immigrants and for the simplicity of reporting, a difference score was calculated by subtracting scores of the COVID-19 related realistic threat from scores of the COVID-19 related symbolic threat. A higher score reflected more perceived symbolic threat than realistic threat while a lower score reflected more perceived realistic threat than the perceived symbolic threat.

Before the mediation analysis, demographic variables were analyzed as possible covariates. The regression of the predictor variables –symbolic threat, realistic threat, COVID-19

specific national identity uncertainty and collective angst – on age, sex and political orientation, revealed significant effects on age (R^2 = .047, F (4, 358) = 4.38 p = .002), such that COVID-19 specific national identity uncertainty significantly predicted age (B = -.94, t(357) = -3.09, p = .002). Symbolic threat also significantly predicted age (B = 1.02, t(357) = 3.04, p = .003). The regression analyses also revealed significant effects of the predictors on sex (R^2 = .038, F (4, 357) = 3.49, p = .008), such that realistic threat significantly predicted sex (B = .051, t(357) = 2.68, p = .008).).

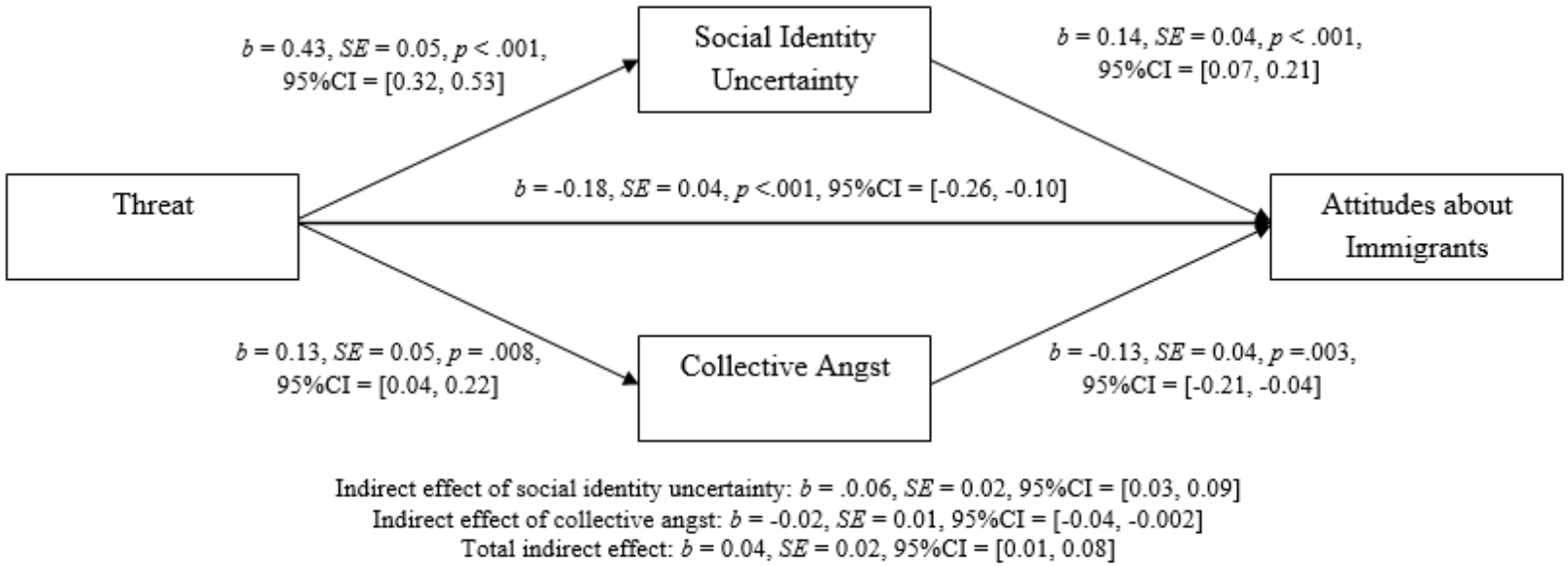
The regression analyses further revealed significant effects of the predictors on political orientation (R^2 = .24, F (4, 358) = 28.45, p < .001), such that realistic threat significantly predicted political orientation (B = -.40, t(357) = -.514, p < .001); symbolic threat significantly predicted political orientation (B = .55, t(357) = 9.41, p < .001); collective angst significantly predicted political orientation (B = .13, t(357) = 2.09, p = .038). Therefore, age, sex and political orientation were entered first as covariates in the mediation analyses. However, since age and sex did not significantly predict attitudes towards immigrants and removing them from the analysis did not change the results, age and sex were removed from covariates to maximize variance in the analysis.

The PROCESS macro for SPSS v 3.4 (Hayes, 2017, Model 4, with 5,000 bootstrap samples) was used to estimate the indirect effects. Both COVID-19 specific national identity uncertainty and collective angst were entered into the models as mediators so that the indirect effects could be teased apart from one another. As presented in Figure 1, the analyses revealed a significant indirect effect of symbolic vs. realistic threat on attitudes towards immigrants via both COVID-19 specific national identity uncertainty and collective angst. This suggested that people who perceived more COVID-19 related realistic threat than COVID-19 related symbolic threat

tend to have more positive attitudes towards immigrants when experiencing less COVID-19 specific national identity uncertainty but more collective angst. People who perceived more COVID-19 related symbolic threat than COVID-19 related realistic threat tend to have more negative attitudes toward immigrants when experiencing more collective angst and more COVID-19 specific national identity uncertainty.

Figure 1.

A Simple Mediation Analysis: the Indirect Effect of Threat on Attitudes about Immigrants through Social Identity Uncertainty and Collective Angst in Study 2.



Note. All paths reached conventional level of significance, $p < .005$. Higher score in Threat indicates more symbolic threat and lower score in Threat indicates more realistic threat.

Discussion

Building on Study 1, Study 2 examined attitudes towards immigrants as the dependent variable and measured COVID-19 specific national identity certainty and collective angst as the mediators between COVID-19 related threats and attitudes towards immigrants. Given the partial success of the threat prime and the insignificant effect of the prime on attitudes towards immigrants, Study 2 was transformed into a correlational study. Though H2: "priming people with COVID-19 related threats" would have a negative effect on their attitudes towards immigrants was not supported, the mediation analysis partially supported H3 and H4. Perceiving more COVID-19 related symbolic and realistic threats was related to having less positive attitudes towards immigrants in general, which was mediated by more perceived collective angst and COVID-19 specific national identity uncertainty. Further, perceiving relatively more COVID-19 related realistic threats than COVID-19 related symbolic threats was related to having more positive attitudes towards immigrants, which was mediated by less-perceived COVID-19 specific national identity uncertainty and collective angst.

CHAPTER FIVE

General Discussion

This research focused on attitudes towards immigrants during the COVID-19 pandemic. According to experts, refugees, and asylum seekers, as well as migrant communities in host nations, have been blamed falsely for spreading coronavirus and face stigma and discrimination, while the COVID-19 pandemic wreaks havoc across the globe (AA, 2020). However, researchers and policymakers have not yet reached a consensus on what drives natives to view immigrants as threatening during the COVID-19 pandemic (Raijman et al. 2003).

Across two studies, results showed that individual differences in perceived COVID-19 related symbolic and realistic threats predicted attitudes towards immigrants. Further, COVID-19 specific national identity uncertainty and collective angst explained the relationship between perceived threats and attitudes towards immigrants.

Study 1 primed COVID-19 related symbolic and realistic threats and examined if the priming induced national identity uncertainty. Results partially confirmed H1 and suggested that priming symbolic but not realistic threat affected feelings of social identity-uncertainty, lending credence to speculation that COVID-19 related symbolic threats may be the underlying motivational dimension for negative attitudes towards immigrants. The results also suggested that realistic threats that were found to provoke politico-economic uncertainty in previous studies (Wagonor et al., 2018) did not induce social identity uncertainty in the current study.

Building on Study 1, Study 2 examined attitudes towards immigrants as the dependent variable and measured COVID-19 specific national identity certainty and collective angst as the mediators between COVID-19 related threats and attitudes towards immigrants. Study 2 was transformed from an experimental study into a correlational study because of the partial success

of the threat prime and the insignificant effect of the prime on attitudes towards immigrants, Though H2: "priming people with COVID-19 related threats" would have a negative effect on their attitudes towards immigrants was not supported, the mediation analysis partially supported H3 and H4. People who perceived more pandemic-related symbolic than realistic threats are more likely to have less positive attitudes towards immigrants, which is explained by relatively higher national identity uncertainty and collective angst. People who perceived more pandemic-related realistic than symbolic threats are more likely to have more positive attitudes towards immigrants, which is explained by relatively lower national identity uncertainty and collective angst.

Given that the experimental prime of threats was failed for the most part in Study 2, findings of Study 2 should not be interpreted in causal terms (i.e., perceiving threats from the COVID-19 pandemic prompts people to have less positive attitudes towards immigrants). The emerged links should rather be seen as evidence for individual differences:

Implications

Taken together, this research joins emerging research (e.g., Esses et al., 2021; Muis & Reeskens, 2022; Rowe et al., 2021) to unfold the psychology behind people's attitudes towards immigrants during a natural disaster such as the COVID-19 pandemic. The findings highlight how perceiving relatively more pandemic-related symbolic threats than pandemic-related realistic threats can have opposite effects on people's attitudes towards immigrants. The findings also illustrated how the effects could be explained by national identity uncertainty and collective angst. Most research in the past suggests that an increase in symbolic and realistic threats from the environment (e.g. social-political unrest, economic downturns, natural disasters, terrorist attacks, etc.) are negatively related to attitudes about outgroups, immigrants included (for a

review, see Rios et al., 2018). This research suggests that having perceived more symbolic than realistic threats relates to negative attitudes towards immigrants. Conversely, when perceiving more realistic than symbolic threats, this relates to more positive attitudes towards immigrants.

This seemingly counterintuitive finding of the threat literature, especially regarding realistic threat does not stand alone in recent studies in the context of the COVID-19 pandemic. In both Canada and the United States, Esses and colleagues (2021) found that though COVID-related symbolic threats predicted negative attitudes toward immigrants, COVID-related realistic threats predicted more favorable views of immigrants. The reason is perhaps that many immigrants have provided frontline health care during the pandemic. The contribution of immigrants in fighting the war against COVID-19 has driven attitudes towards immigrants and informs strategies for supporting more positive views of immigrants and immigration.

Coincidentally, other research has also found that people's attitudes towards immigrants have become increasingly positive (Muis & Reeskens, 2022). Researchers argue that traditionally, threats stemming from majority and minority group conflicts are zero-sum: gains for the outgroup would imply losses for the ingroup (Quillian, 1995). Yet, in the case of the COVID-19 pandemic, such intergroup differentiation is less clear-cut, as the threat was posed universally by a common enemy- the coronavirus. The virus infects ingroup and outgroup members the same way and reduces the threat of virus for the ingroup, which also means reducing the threat for the outgroup. Therefore, a sense of shared fate is creating national collectiveness amongst all groups in a country (Adam-Troian & Bagci, 2021; Van Bavel et al., 2020).

Still, findings regarding pandemic-related attitudes towards immigrants are mixed and a psychological explanation addressing the underlying mechanism is yet to be established. Recent

evidence of growing societal polarization concerning attitudes towards immigrants highlights threat-induced sentiments towards immigrants as strongly positive for some yet strongly negative for others (Rowe et al., 2021). However, recent research is based exclusively on data collected from correlational studies and does not differentiate symbolic and realistic threats. The present research fills this research gap by conducting separate experimental inductions of COVID-19 related symbolic and realistic threats and observing their effects on attitudes towards immigrants. Further, the present research also explains previously found mixed effects of COVID-19 related threats on attitudes towards immigrants by contrasting the effects of symbolic and realistic threats and measuring national identity uncertainty and collective angst as mediators of the effects.

Limitations and Future Directions

This research has several limitations. First, although the naturalistic inductions of threats have the advantage of paralleling the types of information to which people may be exposed to in real life in contrast to the artificial inductions of threats in most past studies (Rios et al., 2018), they are limited in their external validity. For example, the effects of COVID-19 threats are highly unstable, as evident in the findings of this present research that the priming worked in Study 1 but did not work in Study 2. Further, the information given in the prime can also expose naïve participants the negative impact of COVID-19 and influence their perceptions of the pandemic, which might otherwise be neutral or even positive. Consequentially, the results of Study 2 as a correlational study might be hindered.

Second, a difference score between symbolic and realistic threat in the mediation analysis of Study 2 was used mainly for the simplicity of reporting. The tradeoff of this approach is that it left aside individual differences in threat perception (i.e., someone who scored high on both

threats was practically indistinguishable from someone who scored low on both threats). However, a path analysis separating the two threats was also conducted and the analysis results remain the same as the mediation analysis.

In addition to measurement issues, the research also identified some intriguing future directions. For instance, this research used samples exclusively from the United States. Given COVID-19 is a global public health crisis, future research could test the generalizability of our findings in other nations or groups. Relatedly, future research could explore other consequences of coping with COVID-19 as a symbolic or a realistic threat (e.g., attitudes towards other marginal groups, getting vaccinated, following public health measures, beliefs in conspiracy theories, etc.). Future research can also advance our understanding by validating the relationship between symbolic (vs. realistic) threats and attitudes towards immigrants and exploring potential moderators. For example, among conservatives (vs. liberals) in the United States, the threat of COVID-19 to national identity could be predominantly symbolic (vs. realistic). Therefore, this study provides a steppingstone for future research on various social issues related to the COVID-19 pandemic.

Conclusion

To conclude, this research confirmed that threats from the environment, such as a pandemic, can create uncertainty and can influence attitudes about outgroup members through the mediation of social identity uncertainty and collective angst. Further, the perception of symbolic and realistic threats can have different effects on attitudes about outgroup members.

Practically speaking, this research helped to facilitate the understanding of psychological mechanisms underlying issues related to immigrants, such as discrimination, prejudice, and exclusion, particularly under the threat of a global pandemic. As immigration is a very

significant global issue with widespread and often extreme consequences for individuals, societies, intergroup relations, and the global economic system, this research hopes to inform immigration policymakers about this phenomenon from a psychological perspective. Specifically, findings of this research point out that threats from the environment could have complicated and mixed effects on attitudes towards immigrants and should perhaps be monitored separately but considered together.

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Appendix 1

Manipulation

Group (1 control, 2 realistic, 3 symbolic)

Symbolic Threat Below, we would like you to spend some time thinking about the ways in which COVID-19 is a threat to your American identity and your way of life as an American. For instance, COVID-19 has stopped Americans from engaging in their normal behaviors and customs: Sports fans are not able to go and cheer for their teams at games, and families are not able to get together for special occasions like graduations, or important holidays. COVID-19 has also put many restrictions on Americans – Americans are not free to do what they want when they want to as they used to. Focus on and write in the space below some specific ways in which you feel that COVID-19 has threatened America in the ways mentioned above.

SY_1One threat from COVID-19_____

SY_2Another threat from COVID-19_____

SY_3Another threat from COVID-19_____

Realistic Threat Below, we would like you to spend some time thinking about the ways in which COVID-19 is a threat to your physical and financial safety as an American. For instance, COVID-19 has infected millions of Americans, and has killed hundreds of thousands of Americans. COVID-19 has also devastated the American economy with millions of people losing their jobs and businesses. Focus on and write in the space below some specific ways in which you feel that COVID-19 has threatened America in the ways mentioned above.

RL_1One threat from COVID-19_____

RL_2Another threat from COVID-19_____

RL_3Another threat from COVID-19_____

Control Below, we would like you to spend some time thinking about **a leisure activity in which you recently engaged (e.g., reading a book, watching a movie, etc.). Focus on and write in the space below some specific thoughts and feelings you had during the leisure activity.**

CL_1One threat from COVID-19_____

CL_2Another threat from COVID-19_____

CL_3Another threat from COVID-19_____

Manipulation Check

Symbolic and Realistic Threats (**Kachanoff et al., 2020)**

How much of a threat, if any, is the coronavirus outbreak for…..

(1 not very much a threat, 9 very much a threat)

RLT_1 1. Your personal health

RLT_2 2. The health of the U.S. population as a whole

RLT_3 3. Your personal financial safety

RLT_4 4. Day-to-day life in your local community

RLT_5 5. The U.S. economy

SYT_1 6. The rights and freedoms of the U.S. population as a whole

SYT_2 7. What it means to be American
SYT_3 8. American values and traditions
SYT_4 9. American democracy
SYT_5 10. The maintenance of law and order in U.S.

COVID-19 Specific American Identity Certainty (adapted and modified from Wagoner, Belavadi & Jung, 2017, 1not uncertain at all, 9 extremely uncertain)

The COVID-19 pandemic makes me feel uncertain about…
CUN_1 1. what American stands for?
CUN_2 2. how great it is to be an American
CUN_3 3. how special it is to be an American

American Identity Certainty (adapted and modified from Wagoner, Belavadi & Jung, 2017, 1not uncertain at all, 9 extremely uncertain)

UN1 1. I feel that the definition of America's identity is unclear.
UN2 2. I feel uncertain about what it means to be an American.
UN3 3. I feel uncertain about the characteristics that define being an American.
UN4 4. I feel uncertain about who I am as an American.
UN5 5. I feel uncertain about what America stands for.
UN6 6. I feel uncertain about the distinctiveness of America's identity.

Demographic questions

a) Age:
b) What is your age (in years)? _____
c) Sex:
d) What is your gender?
   Male
   Female
   Other (please specify): _____
e) Race What is your race/ethnicity (check all that apply):
   - American Indian or Alaska Native
   - Asian or Asian-American
   - Black or African-American
   - Latino/Latina or Hispanic
   - Native Hawaiian or other Pacific Islander
   - White
   - Other (please specify): _____
f) EDU What is your highest education completed?
   - High school or equivalent
   - College or equivalent
   - Graduate school or equivalent
g) PL Political ideology:
h) Politically, I consider myself: (1 very liberal, 9 very conservative)

i) Party Party affiliation:
Which political party/affiliation do you identify with?
- Democrat
- Republican
- Other (please specify): _____

j) Income:
Approximately how much total combined money did all members of your HOUSEHOLD earn last year? This includes income from jobs; net income from business, farm, or rent; pensions; dividends; interest; social security payments; and any other money income received by members of your HOUSEHOLD that are EIGHTEEN 18 years of age or older. Please report the total amount of money earned - do not subtract the amount you paid in taxes or any deductions listed on your tax return.
- Less than $20,000
- $20,000 to $34,999
- $35,000 to $49,999
- $50,000 to $74,999
- $75,000 to $99,999
- $100,000 to $149,999
- $150,000 or More

k) Country What country were you born in? _____
l) Yearsinus If you were born outside the U.S., how long have you lived in the U.S.?
_____
m) Attention It is important to know if our participants were paying attention during the study as this can greatly influence the results. Please indicate below whether or not you were paying attention while completing the study. Your HIT will be approved regardless of what you indicate below so please be honest.
- ____ Yes, I was paying close attention
- ____ No, I was not paying close attention

Appendix 2

Priming (Wagoner &Hogg, 2016)

Condition_1Symbolic

Spend a few minutes thinking how much of a threat COVID-19 is to American culture and identity - **American norms, values, and customs (e.g., sports fans not being able to cheer for their teams at games, families not being able to get together for special occasions, etc.)**. For example, America's response to the pandemic has fragmented American society, challenged what it means to be an American, and undermined America's reputation in the world.

Focus on and write in the space below some specific ways in which you feel that COVID-19 has threatened America in the ways mentioned above.

Condition_2Realistic

Spend a few minutes thinking how much of a threat COVID-19 is to the day-to-day life of Americas - **American public health, economy, and security (e.g., businesses closing down, high numbers of people being infected, etc.)**. For example, America's response to the pandemic has eroded economic prosperity, disrupted provision of goods and services, and made daily life more difficult.

Focus on and write in the space below some specific ways in which you feel that COVID-19 has threatened America in the ways mentioned above.

Condition_3Control

Spend a few moments thinking about a leisure activity you recently engaged **(e.g., reading a book, watching a movie, etc.)**. Focus on and write in the space below some specific thoughts and feelings you had during the leisure activity.

Predictors

Symbolic and Realistic Threats

(Kachanoff et al., 2020)

How much of a threat, if any, is the coronavirus outbreak for…..

(1 not very much a threat, 9 very much a threat)

1. covidthreatRL_1Your personal health
2. covidthreatRL_2The health of the U.S. population as a whole
3. covidthreatRL_3Your personal financial safety
4. covidthreatRL_4Day-to-day life in your local community
5. covidthreatRL_5The U.S. economy
6. covidthreatSY_6The rights and freedoms of the U.S. population as a whole
7. covidthreatSY_7What it means to be American
8. covidthreatSY_8American values and traditions
9. covidthreatSY_9American democracy
10. covidthreatSY_10The maintenance of law and order in U.S.

American Identity Certainty (adapted and modified from Wagoner, Belavadi & Jung, 2017, 1not uncertain at all, 9 extremely uncertain)

The COVID-19 pandemic makes me feel uncertain about…

1. coviduncertain_1what it means to be an American
2. coviduncertain_2how great it is to be an American
3. coviduncertain_3how special it is to be an American
4. coviduncertain_4the characteristics that define being an American
5. coviduncertain_5who I am as an American
6. coviduncertain_6what American stands for?

Five items adapted from Wohl and Branscombe (2009) to assess collective angst

1 (*strongly disagree*) to 9 (*strongly agree*)

CA1I feel confident that the United States will survive COVID-19.
CA2I feel secure about the future of the United States.
CA3I feel anxious about the future of the United States.
CA4I feel that the United States will always thrive.
CA5I feel concerned that the future vitality of the United States is in jeopardy.

DVs

Attitudes toward immigration (adapted from Abrams & Travaglino, 2018)

1. IA1Do you think that immigrants make the customs of other people in America worse or better? (1 much worse 9 much better)
2. IA2Do you think that immigrants make the traditions of other people in America worse or better? (1 much worse 9 much better)
3. IA3Do you think that immigrants make the general way of life of other people in America worse or better? (1 much worse 9 much better)
4. IA4Do you think that immigrants make the safety of other people in America worse or better? (1 much worse 9 much better)
5. IA5Do you think that immigrants make the financial security of other people in America worse or better? (1 much worse 9 much better)
6. IA6Do you think that immigrants make the health of other people in America worse or better? (1 much worse 9 much better)

Demographic questions

n) ageAge:
o) What is your age (in years)? _____
p) genderSex:
q) What is your gender?
Male
Female
Other (please specify): _____
r) raceWhat is your race/ethnicity (check all that apply):
- American Indian or Alaska Native
- Asian or Asian-American
- Black or African-American
- Latino/Latina or Hispanic
- Native Hawaiian or other Pacific Islander

- White
- Other (please specify): _____

s) eduWhat is your highest education completed?
- High school or equivalent
- College or equivalent
- Graduate school or equivalent

t) politicaloriantationPolitical ideology:

u) Politically, I consider myself: (1 very liberal, 9 very conservative)

v) partyParty affiliation:
Which political party/affiliation do you identify with?
- Democrat
- Republican
- Other (please specify): _____

w) SESSES:
Approximately how much total combined money did all members of your HOUSEHOLD earn last year? This includes income from jobs; net income from business, farm, or rent; pensions; dividends; interest; social security payments; and any other money income received by members of your HOUSEHOLD that are EIGHTEEN 18 years of age or older. Please report the total amount of money earned - do not subtract the amount you paid in taxes or any deductions listed on your tax return.
- Less than $20,000
- $20,000 to $34,999
- $35,000 to $49,999
- $50,000 to $74,999
- $75,000 to $99,999
- $100,000 to $149,999
- $150,000 or More

x) countryWhat country were you born in? _____

y) yearsinusIf you were born outside the U.S., how long have you lived in the U.S.?
_____

z) attentionIt is important to know if our participants were paying attention during the study as this can greatly influence the results. Please indicate below whether or not you were paying attention while completing the study. Your HIT will be approved regardless of what you indicate below so please be honest.
- ____ Yes, I was paying close attention
- ____ No, I was not paying close attention