THE MINORITY-GROUPS HOMOGENEITY EFFECT: SEEING MEMBERS OF DISTINCT MINORITY GROUPS AS MORE SIMILAR THAN MEMBERS OF THE MAJORITY

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

Stephanie Jane Tepper

May 2023

THE MINORITY-GROUPS HOMOGENEITY EFFECT: SEEING MEMBERS OF DISTINCT MINORITY GROUPS AS MORE SIMILAR THAN MEMBERS OF THE MAJORITY

Stephanie Jane Tepper, Ph.D.

Cornell University 2023

The widely documented "outgroup homogeneity effect" in psychology refers to people's tendency to view members of groups to which they do not belong (outgroups) as more similar to one another than members of their own groups (ingroups). Here, I present evidence for a novel but related phenomenon: people tend to view members across different minority groups as collectively more similar to one another than members of the majority group are to one another. Across 13 studies, I demonstrate a robust "minority-groups homogeneity effect" among participants from both majority and minority groups (albeit less consistently among the latter) and along different dimensions of identity. In Chapter 1, I provide an overview of the theoretical underpinnings of people's perceptions of majority and minority groups, especially in the context of shifting demographics in the United States. In Chapter 2, I describe studies that examined this effect among members of different majority groups in terms of race and ethnicity, sexual orientation and gender identity, and minimal group assignment (i.e., fictional groups), finding evidence of a minority-groups homogeneity effect in all contexts. In Chapter 3, I present results from studies that examined this effect among minority group members, finding a minority-groups homogeneity effect among minority participants based on sexual orientation and nationality but not based on race/ethnicity. In Chapter 4, I describe studies designed to investigate the

mechanisms underlying the minority-groups homogeneity effect and some of its implications. Finally, in Chapter 5, I discuss pathways for future research aimed at furthering our understanding of why this effect emerges and how perceptions of the similarity of minority groups might influence intergroup attitudes and behaviors.

BIOGRAPHICAL SKETCH

Stephanie Tepper grew up in Westfield, New Jersey and developed an early interest in social psychology after reading pop psychology books on happiness in high school. She built on this passion throughout college at the University of North Carolina at Chapel Hill, where she learned how to conduct experimental research and earned a Bachelor's degree in psychology in 2016. She then spent two years as an applied behavioral science researcher at the Center for Advanced Hindsight in Durham, North Carolina, before beginning her social psychology graduate studies in 2018 at Cornell University. Following graduation, she will begin a fellowship at the Office of Evaluation Sciences in the U.S. government, where she will design and test federal policy interventions aimed at promoting economic opportunity.

ACKNOWLEDGMENTS

I feel incredibly lucky to have been surrounded by a large, loving, and unconditionally supportive community throughout my time in graduate school. These folks deserve much more than the words that will fit on this page (and I will be sure to thank them and show them the same support for years to come).

I am extremely grateful to my advisors and committee members for their immense support during my time at Cornell. Tom Gilovich is brilliant, generous, and one of the most positive people I have had the pleasure to work with. I feel honored to have had the opportunity to learn how to think like (and be) a social psychologist from such a wonderful and legendary scholar, writer, teacher, and person. Neil Lewis, Jr. is a prolific researcher and represents everything that the future of social psychology should be. He has encouraged me to think about social issues and applied research with thoughtfulness and clarity, and he has helped me live out my values through my work. I am very thankful to Amy Krosch, Thom Cleland, David Pizarro, and the faculty of the social psychology area for helping to shape the direction of my research through their thoughtful engagement and investment in my work and my development as a scholar. I am also grateful to all of the wonderful collaborators I have had the pleasure of working on projects with over the last several years, including Bharathy Premachandra, Shai Davidai, Jesse Walker, Taylor Phillips, Daniela Goya-Tochetto, Jon Jachimowicz, Ashley Whillans, and more, including my amazing former colleagues at the Center for Advanced Hindsight.

The best part about this program has been the community of students in the social psychology area. My cohort—Mikaela Spruill, Andres Montealegre, Randy Lee, and Rachel King—has been my family in Ithaca, as have all the students in the social area. Thank you for the FaceTime calls, walks, writing sessions, research advice, life advice, office chats, and more. I can’t imagine having done grad school without all of you by my side. I am also so grateful for the friends that I have made in

Ithaca, especially the housemates of Middle Sister, my home for the last five years. Years 3-5 of grad school were made significantly more fun thanks to TV marathons with Taylor and cooking adventures with Anshuman. Thank you to the QGrads community, of which I have been a part since my first year in Ithaca, for all of the queer joy.

I am so lucky to have many friends from different stages of my life who support me through phone calls, visits, virtual DND sessions, and more. Alina, Kayla, Julia, Sam, Alli, Mary Hannah, Michelle, Jeff, Angie, and all of the wonderful friends who have stayed with me through the years: I adore you all, and I love celebrating all of the amazing things you do.

My sweet, wonderful partner Caroline has been the most incredible source of support over the last nearly two years. Thank you, Caro, for believing in me and showing me so much love every day, for growing with me, for being proud of me, for being the best dog mom to Jamie (to whom I also give many thanks for getting me to this moment), for listening and giving input when I needed to talk about research, and for adventuring and/or relaxing with me when I needed to not talk about research.

Finally and most importantly, I offer infinite gratitude to my amazing parents, Nancy and Neal, and my sister/best friend, Danielle, who have been my cheerleaders forever. I cannot even begin to express my gratitude for having such a wonderful family who have supported all of my decisions without question and celebrated every milestone with me. You have given me so much, and your pride in me keeps me going every day. I absolutely could not have reached this goal without you. I dedicate this degree and all of my future accomplishments to you three.

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CHAPTER ONE

INTRODUCTION

Over the last 15 years, news sources have repeatedly reported that the U.S. will be a so-called "majority-minority" nation by 2042. That is, racial and ethnic groups who have historically been numerical minorities in the U.S.—such as Black, Latino, and Asian Americans—will together make up more than 50% of the American population (Frey, 2018, 2021; Goldman, 2008; Roberts, 2008; U.S. Census Bureau, 2012). This projection is based on a number of shifting social and cultural forces, including increasing immigration rates and differences in birth and death rates across ethnic groups (Frey, 2018). As the United States supposedly shifts in terms of racial and ethnic demographics, it is also changing along other social dimensions, with more people than ever before—and one in five Generation Z adults—identifying as members of the LGBTQ community (Jones, 2022). Beyond the context of the United States, similar demographic trends are mirrored in other parts of the world, including Canada (Statistics Canada, 2006), the United Kingdom (Coleman, 2010), and parts of Europe (Parsons & Smeeding, 2006).

With this changing social landscape comes a range of responses, most notably among members of existing majority groups. Burgeoning research in the social sciences finds that racial and ethnic majority group members (e.g., non-Hispanic White Americans and Canadians) tend to feel threatened when they learn about these demographic changes, showing more anger and fear toward ethnic minorities (Burrow et al., 2014; Outten et al., 2012) and greater support for conservative policies (Craig et al., 2018; Craig & Richeson, 2014). These responses to increasing diversity are

broadly explained by the feeling that an increase in the size of minority groups will threaten the dominant status of the majority (Craig & Richeson, 2014). In other words, as minorities gain in size, the majority will lose status and influence. This threatened response may be further bolstered by the fact that majority group members tend to overestimate the size and influence of minority groups in society, even without considering the potential consequences of demographic shifts (Alba et al., 2005; Gallagher, 2003; Gorodzeisky & Semyonov, 2020).

Despite these statistical projections and perceptions that minority groups are increasing in size—and that they may together form a multiracial "majority"—White Americans' concerns may be assuaged by the fact that they are and will continue to be the largest racial or ethnic group in the U.S. for decades to come (Alba, 2018; Alba et al., 2021). Furthermore, as the share of multiracial people in the U.S. grows, the ways that we define and categorize people by race become increasingly complicated. While projections of a "majority-minority" typically focus on the declining share of people who identify solely as White and non-Hispanic, there is likely to be an increasing share of people who identify as both White *and* another race or ethnicity (Wang & Talbot, 2021). Finally, White Americans are still advantaged across many domains of life, including health, wealth, and education (e.g., Akee et al., 2019; Lopez et al., 2021; Merolla & Jackson, 2019), and the changing demographic landscape is unlikely to affect this status hierarchy without significant policy intervention to address underlying inequities (e.g., Bailey et al., 2021). Why, then, might many White Americans ascribe to the threatening belief that they are becoming a minority group in a diversifying United States?

In the present research, I explore one reason why White Americans may be susceptible to this belief. I test whether members of majority groups tend to perceive members of minority groups as having shared values and traits, making the collection of minority groups seem more *homogeneous* than they really are. Since it is difficult to establish an objective measure of homogeneity against which I can compare participants' perceptions, I instead use a proxy, measuring participants' perceptions of the similarity of minorities relative to the majority. Across studies of majority and minority group members, and across various social contexts and types of identities, I find evidence for a broad "minority-groups homogeneity effect," in which people tend to perceive members across multiple minority groups as more similar to one another than members of a single majority group. I suggest that this broad tendency to perceive minorities as homogeneous may provide an additional explanation for majority group members' concerns about changing demographics. Before describing this evidence, in this chapter, I discuss the theoretical background for the hypothesized effect in the context of changing demographics in the United States.

Majority Group Responses to Diversity

Projections from the U.S. Census Bureau indicate that the share of the population made up of minority groups is increasing, such that the U.S. will be a "majority-minority" nation within the next few decades (Frey, 2021; U.S. Census Bureau, 2012). These societal trends have prompted a number of social science researchers to explore majority group members' responses to changing demographics. Overall, researchers have demonstrated that White Americans on average tend to feel threatened by increasing racial and ethnic diversity in the U.S. (for a review, see Craig

et al., 2018). When prompted to consider changing demographics, White Americans (and White Canadians; Outten et al., 2012) show increased feelings of threat (Burrow et al., 2014) and more anger and fear toward ethnic minority group members (Outten et al., 2012). Reminders of changing demographics not only affect attitudes toward minority group members but also influence political attitudes and behaviors. When prompted to think about an impending "majority-minority" society, White Americans show greater support for conservative policies, greater preference for racial homophily (i.e., preferring to have less diverse social networks), and greater desire to move out of diversifying neighborhoods (Craig & Richeson, 2014; Zou & Cheryan, 2022). Researchers have also examined the effects of changing demographics on perceptions of race and racial categorization, finding that White Americans who learn about demographic shifts exhibit a lower perceptual threshold for categorizing mixed-race faces as members of minority racial and ethnic groups (i.e., a greater tendency to categorize people as outgroup members; Krosch et al., 2022). Across studies, researchers have suggested that these results are driven by increases in group status threat: the belief that as minorities increase in size, they will also gain status, thus threatening the status of White Americans (Craig et al., 2018; Craig & Richeson, 2014; Krosch et al., 2022).

These threatened responses to racial diversity may result from (mis)perceptions of the meaning of demographic changes in society. The widely touted claim about an impending "majority-minority" is likely to stoke unnecessary concern among White Americans, as the methodology underlying this claim has been widely critiqued. In the year 2000, the Census Bureau changed its method of measuring racial identification,

allowing participants to select more than one racial category with which they identify. Whereas the number of people selecting only "White" decreased from 2010 to 2020, the number of people selecting "White" and another race *increased* over the same timeframe (Wang & Talbot, 2021). According to Census Bureau projections, among the projected "nonwhite majority," 52% will *also* identify as White (U.S. Census Bureau, 2017; Alba et al., 2021). As a result, the projection of a "majority-minority" nation hinges on a very narrow definition of what it means to be White in America, despite the changing meaning of racial categories. Indeed, when White participants in an experiment were prompted to consider rising numbers of people who identified as both White *and* another race or ethnicity, they showed less threat and anxiety relative to those who read the traditional majority-minority narrative and to those in a control condition (Levy & Myers, 2021). However, that study also found that nearly 40% of participants were familiar with the majority-minority narrative, compared to 14% who had heard about increasing mixed-race identification, underscoring the spread of this narrative through the media.

Despite its misleading nature, the majority-minority narrative may be consistent with White Americans' experiences of the world, making it psychologically appealing. Decades of social science research point to a pattern wherein people tend to overestimate the size of minority groups such as racial and ethnic minorities and immigrants (Alba et al., 2005; Gallagher, 2003; Gorodzeisky & Semyonov, 2020). As early as 2000, about half of Americans believed that White people were already a numerical minority, despite making up about 75% of the U.S. population at the time (Alba et al., 2005; U.S. Census Bureau, 2001). Furthermore, members of dominant

groups such as White Americans may have lower thresholds for perceiving diversity, believing a group or organization to be diverse at lower levels of representation of nondominant groups (Danbold & Unzueta, 2020). This suggests that increases in the size or degree of representation of minority groups may be especially salient to White Americans, leading them to be more perceptually sensitive to increases in diversity (even if they themselves still make up the largest group). Importantly, people's *perceptions* of how things are changing in the world are often more consequential than how things objectively are, meaning that perceptions of diversity and inequality can shape attitudes and behavior even when these perceptions do not match reality (see Griffin & Ross, 1991; Hauser & Norton, 2017; Wilson, 2022).

White Americans may also be susceptible to majority-minority narratives because of a lack of recognition of persistent racial inequalities in the United States. On average, White Americans drastically overestimate racial progress and underestimate racial economic inequality, believing that wealth gaps between White Americans and racial minority groups are much smaller than they actually are (Kraus et al., 2017, 2019; Kuo et al., 2020; Richeson, 2020). Furthermore, many White Americans fail to recognize or acknowledge the advantages of being White, as these advantages may be relatively invisible compared to parallel disadvantages experienced by minority groups (Davidai & Gilovich, 2016; Knowles et al., 2014; Phillips & Lowery, 2018; Wu & Dunning, 2020). This lack of awareness of ongoing racial inequality may mean that White Americans view increases in racial diversity as consistent with the narrative that they are *losing* status in society rather than maintaining high status. Indeed, recent evidence indicates that White conservatives

tend to believe that anti-White bias is a bigger issue than anti-Black bias (Rasmussen et al., 2022), suggesting that this group may be especially susceptible to societal messages consistent with White people losing status and influence (like the majority-minority narrative). And, though threatening—indeed, *because* it's threatening—this narrative may be easily adopted and spread by conservative politicians and political commentators because it feeds into existing fears about a changing cultural landscape.

Existing research thus paints a relatively clear picture of why many White Americans may feel threatened by a perceived loss of status. Yet Census data also indicate that White Americans will continue to be the largest demographic group for years to come, and projections about future resource distributions suggest that White Americans' advantages in terms of health and wealth will likely persist unless major policy changes are implemented (Darity et al., 2018). Despite this reality, many White Americans see themselves as disadvantaged relative to other racial groups that are each smaller in number and that face ongoing systemic disadvantages.

To further explain this misperception, rather than considering their size relative to each minority group, White Americans may be considering their size relative to the collection of *all* minority groups, leading them to feel particularly threatened by changing demographics. I propose that this sense of threat comes from a perception that minority groups share a common fate in the U.S., having some degree of shared history, a shared experience of being marginalized, and shared political values (Craig & Richeson, 2016; Knowles et al., 2022). As a result, White Americans might tend to perceive members of different minority groups as being relatively similar to one another.

Beyond the context of racial categories in the U.S., I also hypothesize that the tendency to group minorities together in terms of similarity may apply to other domains of social life. Narratives of minority growth and increasing diversity have been espoused with regard to other social categories (e.g., sexual orientation, immigration status) and in other contexts (e.g., countries, organizations), leading members of various types of majority groups to potentially view minority groups as homogeneous.

Group Cognition: Majority and Minorities as "Us vs. Them"

Social cognition researchers often study how members of one group think about or interact with members of another group, highlighting people's tendency to think in terms of "us vs. them" (Dixon et al., 2020). Social neuroscience research, for example, has examined how people form representations of social groups in terms of ingroup and outgroup (e.g., Cikara & Van Bavel, 2014). Moving from mental representations to attitudes and behavior, researchers have similarly studied the prevalence and consequences of people's zero-sum beliefs: beliefs that gains for an outgroup result in losses for the ingroup (e.g., Wilkins & Kaiser, 2014). Another widely known manifestation of this "us vs. them" thinking is the outgroup homogeneity effect: the tendency to perceive members of one's outgroup as more similar to one another than members of one's ingroup (e.g., Jones et al., 1981; Judd & Park, 1988; Quattrone & Jones, 1980). This phenomenon has been studied with respect to a number of different features of group perception. For example, people tend to rate outgroups as having lower variability than ingroups on a number of personality traits and behavioral characteristics (e.g., Jones et al., 1981); people show

better recall for individual ingroup members than individual outgroup members (Lorenzi-Cioldi, 1993; Ostrom et al., 1993); people show better recognition accuracy for ingroup faces than outgroup faces, i.e., the cross-race effect (Chance & Goldstein, 1996; Hughes et al., 2019; Meissner & Brigham, 2001); and people list more subgroups within their ingroup than within various outgroups (Linville et al., 1996; Park et al., 1992). The outgroup homogeneity effect (and especially the cross-race effect) has been linked to negative societal consequences, such as eyewitness misidentification in the legal system, wherein people are less able to identify or recall individual members of racial outgroups in a line-up (e.g., Wilson et al., 2013). Furthermore, experimentally *increasing* the perceived variability of outgroups results in decreased prejudice, suggesting a causal relationship between perceived outgroup homogeneity and attitudes toward outgroups (Brauer & Er-rafiy, 2011).

In modern society, people are often categorized in ways that reinforce boundaries not just between ingroup and outgroup (e.g., White people vs. Black people, women vs. men) but also between ingroup and *outgroups* (e.g., White people vs. people of color, straight people vs. LGBTQ people, Christians vs. non-Christians, U.S.-born citizens vs. immigrants from various countries). People also commonly categorize minority groups under a superordinate label or acronym, thus creating a division between the majority group and different minority groups in society (Lasher & Campano, 2022; Malesky, 2014). A number of psychological factors may underscore this tendency to group minorities together. First, in the psychology of intergroup relations, ingroup positivity and identification is as much a cause of prejudice as is outgroup negativity (Brewer, 1999). Strong identification among

majority group members with the ingroup may contribute to the tendency to create a division between the ingroup and outgroups, resulting in a broad, superordinate category for all minority groups. This tendency may be especially strong in an increasingly diverse society, wherein projected demographic changes are often framed in ways that reinforce binaries between the majority and the minorities, e.g., White vs. non-White and straight vs. LGBTQ (Alba et al., 2021; Jones, 2022). Members of different minority groups may also share common experiences of marginalization in society, further strengthening boundaries between the majority vs. the minorities. For example, in the U.S., Black and Hispanic families both have significantly less wealth on average than White families (Bhutta et al., 2020), creating a potential dimension of common experience between Black and Hispanic people. Indeed, the common experience of perceived discrimination may lead to feelings of solidarity among minority group members, even along different dimensions of identity, bolstering the binary division between majority and minorities (Craig & Richeson, 2016). In this research, I am interested in understanding the psychology of how people think about minority groups as a whole relative to a majority group.

Perceiving Minorities as Homogeneous

In the studies conducted for my dissertation, I test the hypothesis that people perceive minority groups as homogeneous relative to the majority. Under this hypothesis, I expect that people will rate members of *different* minority groups as more similar to one another than members within the *same* majority group. While perhaps counterintuitive, this hypothesis draws on a number of findings in the social psychological literature. Here, I outline the logic behind the hypothesis by discussing

how both majority group members and minority group members think about these divisions.

Majority Group Members' Perceptions

As described above, the outgroup homogeneity effect refers to people's tendency to perceive an outgroup as more homogeneous than one's ingroup. A number of explanations have been proposed for this effect (see Ostrom & Sedikides, 1992 for an overview). For example, in Western cultures, people tend to value individual complexity, uniqueness, and heterogeneity; since people may be motivated to view themselves and their groups positively, they may be more likely to perceive their ingroup as heterogenous relative to their outgroups (e.g., Quattrone & Jones, 1980). Another reason for the outgroup homogeneity effect is that people may be likely to think about *themselves* when considering the similarity of members of the ingroup, providing a salient comparison between oneself and other ingroup members (e.g., "I am very religious, but I have friends from my ingroup who are *not* religious, so my ingroup is heterogeneous;" (Park & Judd, 1990; Robinson et al., 1995)). Furthermore, in a society often divided along group lines, people are likely to have more interactions with members of their ingroups than their outgroups. As a result, they may encounter a greater number of different types or subgroups of people within their ingroup (and may have higher quality interactions with them), compared to their outgroups (Linville et al., 1996; Park et al., 1992; Park & Judd, 1990). Because of the higher quantity and quality of ingroup interactions, people may store information about the ingroup in terms of individual people, whereas they store information about

outgroups in terms of stereotypes or group-level attributes, resulting in greater individuation in perceptions of the ingroup (Ostrom et al., 1993).

Although these theories have been proposed in the context of perceptions of a single outgroup, I expect that they may extend to perceptions of *outgroups* in general. Because people often have homogeneous social networks, they likely have fewer experiences with members of outgroups generally, relative to experiences with their ingroup. This may result in the encoding and storage of stereotypical or group-level (vs. individuating) information about outgroups, resulting in the belief that members of different outgroups are similar to one another on these higher-level traits. This belief may be further bolstered by the language used to describe minority groups, which tends to group multiple minorities together under umbrella labels or acronyms (e.g., "BIPOC," "LGBTQ," or simply "minorities"). Members of majority groups may be likely to endorse a binary between the majority and the various minorities, perceiving people from distinct minority groups as belonging to a single outgroup. Indeed, recent research on stereotyping provides some support for perceptions of minority homogeneity; counterintuitively, greater diversity in an area is associated with less stereotype dispersion, meaning that people perceive fewer differences between various ethnic groups along the dimensions of warmth and competence (Bai et al., 2020). Given this evidence, I hypothesize that majority group members may be likely to perceive members of different minority groups as more similar to one another than members of the majority ingroup.

Minority Group Members' Perceptions

Majority group members' perceptions of minorities are hypothesized to parallel the outgroup homogeneity effect, resulting in an *outgroups* homogeneity effect. Might it be the case that minority group members also perceive minorities as more homogeneous than the majority? Like majority group members, minority group members also have more experience with their ingroup relative to their outgroups, as well as a similar need for uniqueness, which may lead them to also perceive their ingroup as more heterogeneous relative to other minorities or to the majority. However, members of minority groups also likely share common experiences of being marginalized in society, which may foster a sense of solidarity among them (Craig & Richeson, 2016). For example, the common experience of discrimination in society may lead members of different minority groups to share a common ingroup identity (Gaertner & Dovidio, 2014), leading to the perception that minority groups share more in common than members of the majority. This common ingroup identity may encompass shared experiences of marginalization and shared goals for social progress toward equality and may in turn lead members of minority groups to similarity exhibit the minority-groups homogeneity effect, rating minorities as more homogeneous than the majority.

On the other hand, it remains possible that members of minority groups might *not* show the same pattern in their perceptions of minorities vs. the majority. Although minority groups have shared experiences of marginalization, they tend to have different histories and unique aspects of their modern experience in society, as well. Furthermore, the outgroup homogeneity effect predicts that members of a given minority group will rate the majority outgroup as more homogeneous given greater

knowledge of and experience with members of their own ingroup. This pattern should only be amplified when the supposed ingroup consists of *multiple* minority groups, creating a more diverse and varied ingroup. Thus, there are reasons to predict that the minority-groups homogeneity effect may only hold for members of majority groups but also to predict that it may similarly apply to both minority and majority group members.

Present Research

In the present studies, I test the hypothesis that people perceive minority groups as more homogeneous than the majority. Across 13 studies, I test this hypothesis (and its underlying mechanisms) by asking participants to rate the similarity of people within a majority group or people across minority groups on a number of traits and characteristics. In Chapter 2, I present evidence of a robust minority-groups homogeneity effect among participants from majority groups across different dimensions of identity. First, I show that White Americans rate members of racial and ethnic minority groups (across groups) as more similar to one another on a number of traits than White people are to one another. Moving beyond race and ethnicity, I demonstrate a similar pattern of results in which members of various non-racial majority groups rate members of minority groups as more homogeneous than the majority, even in a paradigm with novel groups. In Chapter 3, I examine the generality of this effect by testing whether members of minority groups also see minorities as more homogeneous, finding evidence that this minority-groups homogeneity effect applies not only to members of majority groups, but also to members of *some* (but not all) minority groups. In Chapter 4, I present studies testing

potential mechanisms for this effect, including 1) whether people perceive minority group members as sharing a common fate, 2) whether people tend to think about minority groups in terms of categories, but majority groups in terms of individuals, and 3) whether people tend to think that traits are distributed more narrowly (i.e., that there is less trait variability) within minority groups. Some of these mechanisms may explain not only why I find a minority-groups homogeneity effect generally, but also why I observe this effect among some minority group respondents and not among others. In Chapter 5, I offer a general discussion of these findings as they relate to broader phenomena within social cognition and intergroup relations. Overall, this body of work demonstrates the existence of a broad tendency for people to view minority groups as more homogeneous than majority groups.

CHAPTER TWO

SUPPORT FOR THE MINORITY-GROUPS HOMOGENEITY EFFECT AMONG MAJORITY GROUP MEMBERS

I began this research by testing a simple hypothesis: that members of U.S. racial and ethnic minority groups would be perceived as sharing more in common *politically* than members of the U.S. racial majority group. Despite the common view of people of color as a diverse category made up of multiple smaller groups, I expected that White Americans would place greater emphasis on the shared values and political goals of people of color, especially in an increasingly diverse society, in which people of color may purportedly outnumber White Americans in the near future. In other words, might White Americans feel threatened in response to these changing demographics because they believe people of color share political values that they will be able to act on as a collective "majority"? Thus, in an extension of the outgroup homogeneity effect, I predicted an *outgroups* homogeneity effect regarding perceptions of the political similarity of people of color.

In the studies that followed, I discovered a broader and more surprising pattern of results: across various social contexts, participants from both majority and (some) minority groups tend to view people across multiple minority groups as more homogeneous than members of a single majority group, on a range of traits and characteristics. In this chapter, I provide an overview of the accumulated evidence establishing the "minority-groups homogeneity effect" among samples of majority group members. I discuss the evidence for a similar pattern among some minority

group members in Chapter 3. The aim of this chapter is to document the primary effect and its generalizability across different contexts and samples, as well as to rule out possible alternative explanations for this pattern of results. Following a narrative overview of the evidence supporting the minority-groups homogeneity effect, I will describe in more detail the methods and results of each study.

Establishing the Primary Effect

As the U.S. is projected to become more racially and ethnically diverse, members of the racial majority, on average, tend to feel threatened about the future status of their group. One possible reason for this threatened response is that White Americans might perceive racial and ethnic minorities as sharing political ideologies, such that in a majority-minority society, members of minority groups might together have greater collective political influence than White Americans. To test this prediction, I surveyed a sample of White Americans and asked them to rate the similarity of either White people or people of color on items such as their political attitudes, their vision for America, and their core values. Averaging across these items, White participants rated people of color as more similar to one another than White people are to one another on politically-relevant items.

This may constitute evidence in support of a broad homogeneity effect, or it might instead be the case that White people simply tend to assume that a greater proportion of people of color are liberals or Democrats, thus explaining their tendency to group them together on political items. To test the breadth of this effect, I moved beyond the context of politics. I sampled existing measures of personality traits and

values to create a broad, 9-item measure of group similarity, including both positive and negative traits:

How similar are [White people / people of color] in terms of … ?

1. *How helpful they are*
2. *How much they value a sense of community*
3. *How much they value personal success*
4. *How open they are to new experiences*
5. *How extraverted they are*
6. *How religious they are*
7. *How political they are*
8. *How rude they are*
9. *How moral they are*

The studies that followed all employed the same general method: participants were randomly assigned to rate the similarity of either the majority group or the minority groups on this 9-item measure (or similarly broad measures of group traits). In all studies of racial majority group members, White participants rated people of color as more similar to one another than White people are to one another across this range of traits, providing evidence of a more general outgroups homogeneity effect. Even though people of color represent a diverse, superordinate outgroup comprised of multiple smaller outgroups, they tend to be perceived by White Americans as relatively more homogeneous than the ingroup.

Does Changing the Framing of Groups (via Umbrella Labels) Influence the Results?

One possible explanation for this effect is that members of minority groups, at least in the U.S., are often grouped under umbrella labels, like "people of color" or "LGBTQ+." Might the use of these labels reinforce the idea that minorities all belong to a single group, such that White people would then treat this superordinate group as a single outgroup? In two early studies, I directly compared a condition using the umbrella label of "people of color" against a condition that individually listed each of the minority groups to test the impact of these labels. I found that participants in both conditions rated minority groups as more similar than the majority, further underscoring that this pattern of results represents an *outgroups* homogeneity effect, and not just a direct extension of the established outgroup homogeneity effect.

Is This an Artifact of the Question Wording?

In the first study in this project, I presented participants with the following instructions before they rated the similarity of the minority groups:

> *In this set of questions, you will be asked to rate how similar people of color in the U.S. (people who are Black, Native American, Asian American, Pacific Islander, Latino American, or Multiracial) are to one another. Please note that you will be asked to rate your impression of how similar these group members are on average, recognizing that members of all groups can be very different from one another.*

Participants may have reasonably interpreted these instructions to mean that they should consider the similarity of members *within* each of these groups (e.g., the similarity of two Black Americans to each other, two Native Americans to each other,

etc.), rather than the intended task of rating the similarity of members *across* all of these groups.

To rule out the possibility that participants did not interpret the instructions as intended, I ran studies using different phrasings to be more and more certain that they were rating the similarity of members of the different minority groups generally—that is, the similarity of any two minority individuals within a given minority group or *across* any of the minority groups. In one study, I asked participants to "consider the likely similarity of **two randomly selected people from any of these groups**" as they made their ratings. In another, to further clarify the task, I asked participants to "consider the likely similarity of **two randomly selected people of color**," using the umbrella label to make it clear that participants should compare people from across any and/or all of these subgroups. Studies of other identity dimensions also used different wordings, such as in the context of people from different countries in the U.K.: "consider the likely similarity of **two people from within and across these three countries**." And, in arguably the clearest version of these instructions, participants were asked to consider "how similar [members of these groups] are, on average, **to other members of their own group and to members of the other groups**." Across all of these studies, I found consistent evidence of the minority-groups homogeneity effect, underscoring its robustness and undermining the possibility that it is an artifact of the way the task was described.

Does the Minority-Groups Homogeneity Effect Only Apply to Perceptions of Racial and Ethnic Minority Groups?

The early studies in this body of work all involved tests of the minority-groups homogeneity effect regarding White people's perceptions of racial and ethnic minority groups. To further explore the breadth of this effect, I designed tests of various majority groups' perceptions of the homogeneity of majority and minority groups. I explored perceptions of the homogeneity of groups based on their sexual orientation and gender identity, comparing cisgender, heterosexual participants' perceptions of straight people vs. LGBTQ+ people. I moved outside the U.S. context to compare perceived homogeneity based on national identity, asking participants from England to rate the similarity of people from England (the "majority" U.K. country) or people from Scotland, Wales, and Northern Ireland (the "minority" U.K. countries). In a novel context, I instructed participants to imagine themselves as members of the majority group in a fictional society and, after learning some information about members of different groups in that society, to rate the similarity of either the majority group or the minority groups.

Each of these contexts provides a test of different features related to the generalizability of the minority-groups homogeneity effect. First, studying perceptions of sexual and gender minority groups offers a test of whether the effect extends beyond perceptions of race and ethnicity. Second, the study of groups in the U.K. examines whether the minority-groups homogeneity effect is a phenomenon limited to the U.S. context, where minority groups are often grouped together under umbrella labels, or whether it extends to situations where minority groups may not typically be grouped in this manner. Finally, the study in a fictional context helps to elucidate whether this effect is a result of cultural exposure to information about minority

groups (which may reinforce their similarities to one another) or whether it extends to novel situations, in which participants have no prior knowledge of these groups.

Across each of these contexts, I find evidence of the same effect: members of majority groups (whether based on race, sexual orientation, nationality, or minimal group assignment) tend to perceive members across various minority groups as more similar to one another than members of the majority are to one another. This evidence suggests that there may be a broad, social cognitive mechanism underlying majority group members' tendency to view minority groups as homogeneous across different dimensions of social identity.

Do the Words "Majority" and "Minority" Matter?

In most of the studies presented here, I used the words "majority" and "minority," as these labels are commonly used to refer to groups of different sizes. The majority label implies that the largest group makes up over half of the total population. But beyond the literal interpretations of these labels, there are also culturally ascribed meanings; traditionally, minority groups in society are those that are marginalized or lower in status relative to a more powerful majority group. Might the use of these labels lead majority group members to believe that minority group members share common experiences of marginalization, driving perceptions of minority similarity? Also, might these labels lead majority group members to want to distance themselves from other members of their ingroup if they perceive that group as potentially oppressive toward minorities, resulting in greater perceptions of majority *heterogeneity*?

To test these possibilities, I ran another study in the context of the fictional society that varied the framing and size of the majority group. If this effect is driven by these labels, then one might expect it to decrease as the majority is described as smaller, or when it is not a majority at all (i.e., less than 50% of the population, but still the largest group). I randomly assigned participants to one of three conditions, describing the majority group as either: 1) the overwhelming majority group, making up about 70% of the population; 2) a slight majority group, making up about 55% of the population; or 3) the largest group, making up about 30% of the population. The results of this study revealed that the framing of the size of the largest group in society was irrelevant; participants consistently rated the smaller groups as more homogeneous than the larger group, providing initial evidence that this effect is likely driven by perceptions of groups based on their relative size and not based on these labels alone.

In the remainder of this chapter, I present the methods and results for the studies I briefly described above. Each study in this chapter contributes to the overall body of evidence in support of the minority-groups homogeneity effect among participants from different majority groups.

Study 1

In Study 1, I tested whether racial majority group members (White people in the U.S.) believe that members of distinct minority groups (people of color in the U.S.) are more similar to one another than members of the majority group are to one another. I began by measuring similarity with regard to political interests and traits to assess whether any such minority-groups homogeneity effect might be related to

White Americans' belief that minorities might work together to achieve their shared political goals, thereby fueling White Americans' concerns about the U.S. becoming a "majority-minority" country. Accordingly, I also measured participants' feelings of status threat to ascertain whether participants' assessments of minority-group similarity are related to their concerns about the changing demographic landscape of the United States. Finally, I was interested in whether any such minority-groups homogeneity effect would be amplified when the minority groups in question are described with an overarching label (e.g., as "people of color") or not (e.g., as "Black Americans," "Asian Americans," "Hispanic Americans," etc.). I expected that thinking of members of minority groups in terms of a superordinate label would increase the sense that they are more similar to one another, compared to when the groups are individuated.

Method

Participants. Three hundred participants (147 women, 150 men, 3 non-binary people; mean age = 38.63) were recruited from Prolific. Participation was restricted to U.S. residents who identified as White.

Procedure. Participants were invited to complete a 4-minute survey about demographic groups in the United States and were randomly assigned to one of three conditions: majority group (White people), individuated minority groups (Black people, Native Americans, Asian Americans, Pacific Islanders, Latino Americans, and Multiracial people) or umbrella minority groups (people of color). Participants read the following instructions:

In this set of questions, you will be asked to rate how similar [White people / Black people, Native Americans, Asian Americans, Pacific Islanders, Latino Americans, or Multiracial people / people of color in the U.S. (people who are Black, Native American, Asian American, Pacific Islander, Latino American, or Multiracial)] are to one another. Please note that you will be asked to rate your impression of how similar these group members are on average, recognizing that members of all groups can be very different from one another.

In each condition, participants rated how similar members of their assigned group(s) are to one another on five items—their political attitudes, their vision for America, their core values, the causes they care most about, and the cultural impact they have on the United States—on a 7-point scale (1 = *Very dissimilar* to 7 = *Very similar*). Responses to the similarity items were averaged to create a composite score (Cronbach's alpha = 0.85). After providing their similarity ratings on all 5 items, participants were asked to consider what the U.S. would be like in 20 years (the year 2042) and to rate their agreement with a number of statements about the projected social, economic, and political status of people of color in the U.S. (e.g., "By 2042, people of color will have more political power than White people" and "By 2042, people of color will have higher social status than White people on average"). These ratings were also made on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*) and averaged to create a composite measure of perceptions of the future status of people of color (Cronbach's alpha = 0.90). I also included an existing measure of "group status threat" from Craig & Richeson (2014), measured on the same response scale: "If people of color increase in status, they are likely to reduce the influence of

White Americans in society." Participants then answered several demographic questions and were given the option to comment on the survey.[1]

Results

I ran a regression with condition as the predictor of composite similarity scores and conducted pairwise comparisons of the estimated marginal means in each condition using the *emmeans* package for R (Lenth, 2020). Participants rated members of the minority groups (people of color in the U.S.) as more similar than members of the majority group (White people in the U.S.; $M = 3.48$, $SD = 1.22$), both in the individuated minority groups condition ($M = 4.15$, $SD = 1.04$), $t(297) = 4.22$, $p < .001$, Cohen's $d = 0.59$, and in the umbrella minority groups condition ($M = 4.44$, $SD = 1.09$), $t(297) = 6.10$, $p < .001$, Cohen's $d = 0.83$. Similarity ratings in the individuated minority groups and umbrella minority groups conditions did not differ significantly from each other, $t(297) = -1.87$, $p = .15$. In other words, White participants rated people of color as more homogeneous than White people on political items. However, participants were not more likely to perceive people of color as more homogeneous when they were labeled as a singular (umbrella) group vs. when they were not, suggesting a general tendency to rate people of color as more politically homogeneous regardless of how the groups are presented.

Minority group similarity was positively correlated with feelings of status threat regarding the future of the U.S. (our five-item measure; $M_{overall} = 3.60$, $SD = 1.26$) in the umbrella minority groups condition, $r(97) = .25$, $p = .01$, but not in the

[1] Participants generally provided commentary either thanking the researchers for the survey or sharing some brief thoughts on the subject matter. Given that these comments did not reveal that anything in the survey was confusing for participants, I did not make any changes to future studies in response to participants' comments.

individuated minority groups condition, $r(97) = .11$, $p = .28$. Majority group similarity was also positively correlated with feelings of status threat regarding the future of the U.S., $r(100) = .20$, $p = .048$. Similarity ratings in all three conditions were not significantly correlated with the Craig & Richeson (2014) measure of group status threat, rs for each condition < .15, ps > .13. Feelings of status threat did not differ significantly between any conditions on either of the measures, ps > .37.

Even though people of color represent a heterogeneous, superordinate group made up of members of different racial and ethnic groups, participants nonetheless rated them as more similar to each other than White people are to each other in terms of various political characteristics, even in the absence of an umbrella label. Furthermore, ratings of the similarity of the majority group and the umbrella minority groups (but not individuated minority groups) were related to feelings of status threat, such that participants who perceived greater group similarity were more likely to believe that people of color will have higher political, social, and economic status than White people by the year 2042. However, the correlations with the status threat measure were relatively small, and minority similarity was not significantly correlated with a status threat measure that has been used in previous research, providing mixed support for the hypothesis regarding the association between perceived minority-groups homogeneity and group status threat.

The results of Study 1 suggest that White people perceive people of color as more homogeneous than White people, at least in terms of their political attitudes and interests. Although this may represent a general minority-groups homogeneity effect, it could simply be an artifact of participants' belief that people of color tend to lean

left politically and thus have political traits in common, but not more general traits. To begin to explore this possibility, I analyzed the differences between conditions separately for each item, examining whether the effect was stronger on items that were more directly related to political ideology. I found a significant difference between conditions—with participants in the minority groups conditions providing higher similarity ratings on average than those in the majority group condition—on all items, except for similarity in terms of the cultural impact people of color have on the U.S. The effect was also descriptively smaller on the item measuring similarity in terms of core values, relative to the items about political values, visions for America, and causes they care most about. Thus, it seems that items that are more directly related to politics are most likely to invoke the minority-groups homogeneity effect, but the effect may still emerge on less politically oriented items.

Study 2

The results of Study 1 suggest that there is a minority-groups homogeneity effect in the political domain. To test the breadth of this effect more directly, I measured perceived similarity on a range of items beyond politics, including personality traits, values, and other characteristics.

Method

Participants. Three hundred participants (147 women, 146 men, 5 non-binary people, 2 other gender; mean age = 38.36) were recruited from Prolific. Participation was restricted to U.S. residents who identified as White.

Procedure. The procedure for Study 2 was nearly identical to Study 1, except that the similarity ratings were made using a broader set of nine items: helpfulness,

openness to new experiences, extraversion, rudeness, religiosity, morality, politicalness, and how much they value personal success and a sense of community. I selected these items by gathering validated measures of values (Schwartz et al., 2001) and personality traits (John et al., 1991) and choosing items from those measures that would be easiest for participants to rate in the context of group evaluations. I also added novel items regarding life experiences (e.g., how religious and political they are) and other behavioral characteristics (e.g., how rude and helpful they are) as they might be dimensions along which people commonly rate members of different groups. This resulted in a 9-item measure, with scores on the 9 items averaged to create a composite measure of perceived similarity (Cronbach's alpha = 0.90). As in Study 1, participants were assigned to one of three conditions (majority group, individuated minority groups, or umbrella minority groups) and rated the similarity of members of their assigned group using the following instructions. I revised the task description from Study 1 (changes displayed here in bold) to improve clarity and reduce the likelihood that participants were providing ratings of similarity *within* minority groups as opposed to *across* minority groups:

> *In this set of questions, you will be asked to rate how similar [White people / Black people, Native Americans, Asian Americans, Pacific Islanders, Latino Americans, or Multiracial people / people of color in the U.S. (that is, people who are Black, Native American, Asian American, Pacific Islander, Latino American, and Multiracial)] are to on another.* ***As you make these ratings, consider the likely similarity of two randomly selected people from any of these groups.*** *Please note that you will be asked to rate your impression of*

*how **similar members of these groups** are to each other on average, recognizing that members of all groups can be very different from one another.*

Participants then answered the status threat questions used in Study 1, followed by demographic questions and an option to comment on the survey. My hypotheses were as follows:

H1: Participants (White people in the U.S.) will rate minority groups (people of color in the U.S.) as more similar to one another than members of the majority group are to one another.

H2: When all subgroups of "people of color" are listed individually, without an overarching label, participants will rate members of the minority groups as less similar than when they are listed under the "umbrella" label. In other words, similarity ratings will be highest in the umbrella minority groups condition, followed by the individuated minority groups condition, and lowest in the majority group condition.

H3: Group similarity ratings across all three conditions will be positively correlated with feelings of status threat (i.e., the sense that people of color are gaining status in the U.S.).

Results

To test the first two hypotheses, I ran a regression with condition as the predictor of composite similarity scores and conducted pairwise comparisons of the estimated marginal means in each condition. On this broader range of items, participants again rated the minority groups (people of color in the U.S.) as more similar than the majority group (White people in the U.S.; $M = 3.73$, $SD = 1.00$), both

in the individuated minority groups condition (M = 4.57, SD = 1.07), $t(297) = 5.85$, $p < .001$, Cohen's d = 0.81, and in the umbrella minority groups condition (M = 4.40, SD = 0.99), $t(297) = 4.66$, $p < .001$, Cohen's d = 0.68, providing support for Hypothesis 1. Similarity ratings in the individuated outgroup and umbrella outgroup conditions did not differ significantly from each other, $t(297) = 1.18$, $p = .47$, demonstrating a lack of support for Hypothesis 2. In other words, White participants rated people of color as more homogeneous than White people on a set of items assessing the similarity of their personalities, values, and other traits, regardless of whether the minority groups were individuated or described using an umbrella label.

Next, I analyzed the relationship between similarity ratings and feelings of group status threat. Perceived similarity was positively correlated with feelings of status threat regarding the future of the U.S. ($M_{overall}$ = 3.49, SD = 1.11) in the majority group condition, $r(99) = .25$, $p = .01$, and negatively correlated with status threat in the individuated minority groups condition, $r(98) = -.22$, $p = .03$, but not significantly correlated with status threat in the umbrella minority groups condition, $r(97) = .14$, $p = .18$, providing mixed evidence for Hypothesis 3. Similar patterns of correlations were observed using the Craig & Richeson (2014) measure of group status threat ($M_{overall}$ = 4.16, SD = 1.47; majority group: $r(99) = .21$, $p = .04$; individuated minority groups: $r(98) = -.26$, $p = .008$; umbrella minority groups: $r(97) = .02$, $p = .86$). Feelings of status threat did not differ significantly between any conditions on either of the measures, ps > .40.

Despite the diversity of the groups represented under the umbrella term "people of color," White participants rated members of these minority groups as more

homogeneous than members of the majority group on a range of traits and characteristics. Results did not differ based on whether the minority groups were represented by their umbrella label or by their constituent groups. I also failed to find reliable evidence of an association between perceived homogeneity of the different groups and status threat regarding the future of the U.S.

Studies 1 and 2 provide evidence for a minority-groups homogeneity effect regarding how the majority racial group in the U.S. perceives the country's most prominent racial and ethnic minority groups. This effect may be influenced by cultural narratives surrounding the growing size of minority groups in the U.S. and their shared interests and experiences in U.S. society, including experiences of marginalization. To begin to test the breadth of the minority-groups homogeneity effect, I selected another set of minority groups that shares many of the same cultural features as those of the racial and ethnic minority groups in the U.S., using a similar design among a sample of majority group members.

Study 3

In Study 3, I designed a test of the minority-groups homogeneity effect regarding perceptions of sexual and gender minorities (i.e., LGBTQ people). Much like racial and ethnic minorities, sexual and gender minorities are often grouped together under umbrella labels like "LGBTQ" or "queer." They also have shared histories and experiences of marginalization in the U.S.: for example, the famed Stonewall Uprising of the late 1960s involved participation from gay, lesbian, bisexual, and transgender people alike (Lorenzo, 2019). I predicted that majority group members—cisgender, heterosexual people—might perceive the groups within

the LGBTQ community (i.e., lesbian, gay, bisexual, transgender, and queer people) as more similar to one another than members of the majority are to one another.

Method

Participants. Two hundred participants (100 women, 99 men, 1 did not provide their gender; mean age = 36.55) were recruited from Prolific. Participation was restricted to U.S. residents who identified as cisgender and heterosexual.

Procedure. Participants were invited to complete a 3-minute survey about social groups in the United States and were randomly assigned to one of two conditions: majority group (heterosexual people)[2] or minority groups (LGBTQ people: lesbian, gay, bisexual, transgender, and queer people). Because ratings did not differ between the umbrella and individuated minority group conditions in Studies 1 and 2, I omitted the individuated minority condition in Study 3. In each condition, participants rated how similar members of their assigned group(s) are to one another on the same traits and characteristics as in Study 2, using the following instructions (revised once again to reduce the likelihood that participants would rate similarity *within* groups, e.g., of two gay people or two transgender people, as opposed to similarity *within and across* groups):

> *In this set of questions, you will be asked to rate how similar [heterosexual people (i.e., straight people) / LGBTQ people (i.e., lesbian, gay, bisexual, transgender, and queer people)] are to one another. As you make these ratings, consider the likely similarity of two randomly selected [heterosexual*

[2] Note that I recruited participants who were cisgender *and* heterosexual, but in the survey itself, I only used the label heterosexual. I expected that most cisgender participants would bring to mind cisgender, heterosexual people, even though transgender people can also be heterosexual. I also omitted the word cisgender to avoid having to define another term in the survey.

people / people from the LGBTQ community]. Please note that you will be asked to rate your impression of how similar members of [this group / the LGBTQ community] are to each other on average, recognizing that members of all groups can be very different from one another.

Responses to the similarity items were averaged to create a composite measure of similarity (Cronbach's alpha = 0.92). Participants then answered several demographic questions and were given the option to comment on the survey. I hypothesized that participants would rate members of the minority groups (LGBTQ people) as more similar than members of the majority group (heterosexual people).

Results

I ran a regression with condition as the predictor of composite similarity scores and conducted pairwise comparisons of the estimated marginal means in each condition. Participants, who were all members of the majority group, rated members of the minority groups (LGBTQ people: $M = 4.64$, $SD = 0.94$) as more similar than members of the majority (heterosexual people: $M = 3.78$, $SD = 1.31$), $t(198) = 5.32$, $p < .001$, Cohen's $d = 0.75$. In other words, participants who were cisgender and heterosexual rated members of the different sexual and gender minority groups as more homogenous than the majority group to which they belong, providing additional support for a minority-groups homogeneity effect among majority group participants. Furthermore, this study suggests that the minority-groups homogeneity effect extends beyond perceptions of racial and ethnic minority groups to perceptions of minority groups along other dimensions of social identity.

Study 4

The results of Studies 1-3 indicate that majority group members tend to think that members of distinct minority groups in the United States—both in terms of race/ethnicity and sexual orientation/gender identity—are more similar to one another than the members of their own (majority) groups. This pattern of results may be due to factors related to the cultural context of the United States, in which minorities are often grouped together and addressed using umbrella labels (e.g, "people of color," "LGBTQ"). This cultural grouping of minorities may lead majority group members to think about minority groups as having shared values and interests. On the other hand, this effect may be the result of a more basic psychological process that determines how people think about groups based on their size, rather than their experience or status in society. In this case, one might expect that, absent any relevant cultural context, people might still judge minority groups to be more similar to one another.

To tease apart these possible explanations, I designed a paradigm to measure the perceived similarity of majority and minority groups in the fictional society of Bimboola, inspired by a paradigm used in previous research (see Jetten et al., 2015). After brief exposure to non-diagnostic information about the behaviors of different group members, participants (who were asked to imagine themselves as members of the majority group) were instructed to rate the similarity of members of either the minority groups or the majority group. By using something of a minimal-group paradigm, I was able to assess whether the minority-groups homogeneity effect is unique to the sociocultural context of the United States, in which minority groups have some common experiences, or whether it characterizes people's perceptions of minority groups more broadly.

Method

Participants. Two hundred and two participants (98 women, 101 men, 2 non-binary people, 1 other gender; mean age = 37.36; self-reported race and ethnicity: 58.9% White, 12.4% Black or African American, 11.4% Asian, 5.0% Hispanic or Latino, 12.4% Multiracial or another race/ethnicity) were recruited from Prolific.[3] Participation was restricted to U.S. residents.

Procedure. Participants were invited to complete a 4-minute survey about their impressions of others. Participants read the following prompt:

> *Imagine for the purpose of this study that you live in a fictitious society called Bimboola. You are a member of a group called the Ackians. Within Bimboola, there are several other groups of people called the Brites, the Cepians, the Drivians, and the Elies. Each of these groups has a unique set of beliefs and cultural practices – for example, the Brites and Cepians generally practice different religions. However, there is also similarity across the groups – a person from the Ackians and a person from the Elies might be more similar to each other than they are to the people from their own groups. People in Bimboola regularly interact with others from their own groups and with people outside of their groups. And although there are areas of Bimboola that are largely inhabited by Brites, Cepians, etc., people from all groups live in reasonable proximity to*

[3] Participants reported their race and ethnicity in all studies by selecting the checkbox(es) that best represented their identity. I summarize these data here by reporting the percentages for the largest categories and aggregating the remaining selections into the "multiracial or another race/ethnicity" category.

each other. Your group, the Ackians, are the majority group in Bimboola, making up over half of the population. All of the other groups are minority groups that together make up less than half of the population.

Participants then went through a brief "learning phase" so that they would have some basic information on which to base their impressions of group similarity. I used a set of positive and negative statements from the literatures on impression formation and illusory correlations (see Ratliff & Nosek, 2010) and presented participants with a total of fifteen statements about actions taken by individuals in these different groups: two positive statements and one negative statement about individuals in each of the five groups. For example, some participants read that, "An Ackian helped an elderly man who dropped some packages," and "A Drivian shoplifted an inexpensive item from a store." The statements were presented in randomized order, with the assignment of actions to different groups also randomized across participants (e.g., some participants read than an Ackian helped an elderly man and a Drivian shoplifted, whereas others read that a Drivian helped an elderly man and an Ackian shoplifted).

Participants were randomly assigned to one of two conditions, which entailed rating the similarity of members of the majority group (the Ackians) or members of the minority groups (the Brites, Cepians, Drivians, and Elies). In each condition, participants rated how similar members of their assigned group(s) are to one another on nine items: friendliness, selfishness, helpfulness, riskiness, morality, rudeness, similarity in general, and how much they value personal achievement and a sense of community. I selected these items because they were traits that could be judged or

inferred based on the behaviors described in the learning phase (e.g., behaviors indicating how friendly someone is), whereas the items from previous studies might not necessarily be applicable to these novel groups. Participants were asked to make these ratings using the following instructions:

> *In this set of questions, you will be asked to rate how similar [the Ackians (your group) / the minority groups in Bimboola (the Brites, the Cepians, the Drivians, and the Elies)] are to one another. Please note that you will be asked to rate your general impression of how similar these group members are on average based on the information you have learned.*

Responses to the similarity items were averaged to create a composite score (Cronbach's alpha = 0.90). Participants then answered several demographic questions and were given the opportunity to provide comments on the survey.

Study 4 was pre-registered on the Open Science Framework (https://osf.io/3r2hx).[4] I hypothesized that participants would rate the fictional minority groups as more homogeneous than the fictional majority.

Results

I ran a regression with condition as the predictor of composite similarity scores and conducted pairwise comparisons of the estimated marginal means in each condition. Overall, participants rated the minority groups in Bimboola (M = 5.24, SD = 0.78) as more similar than the majority group in Bimboola (M = 4.84, SD = 1.01), $t(200) = 3.17$, $p = .002$, Cohen's $d = 0.45$. Thus, even in the context of fictional

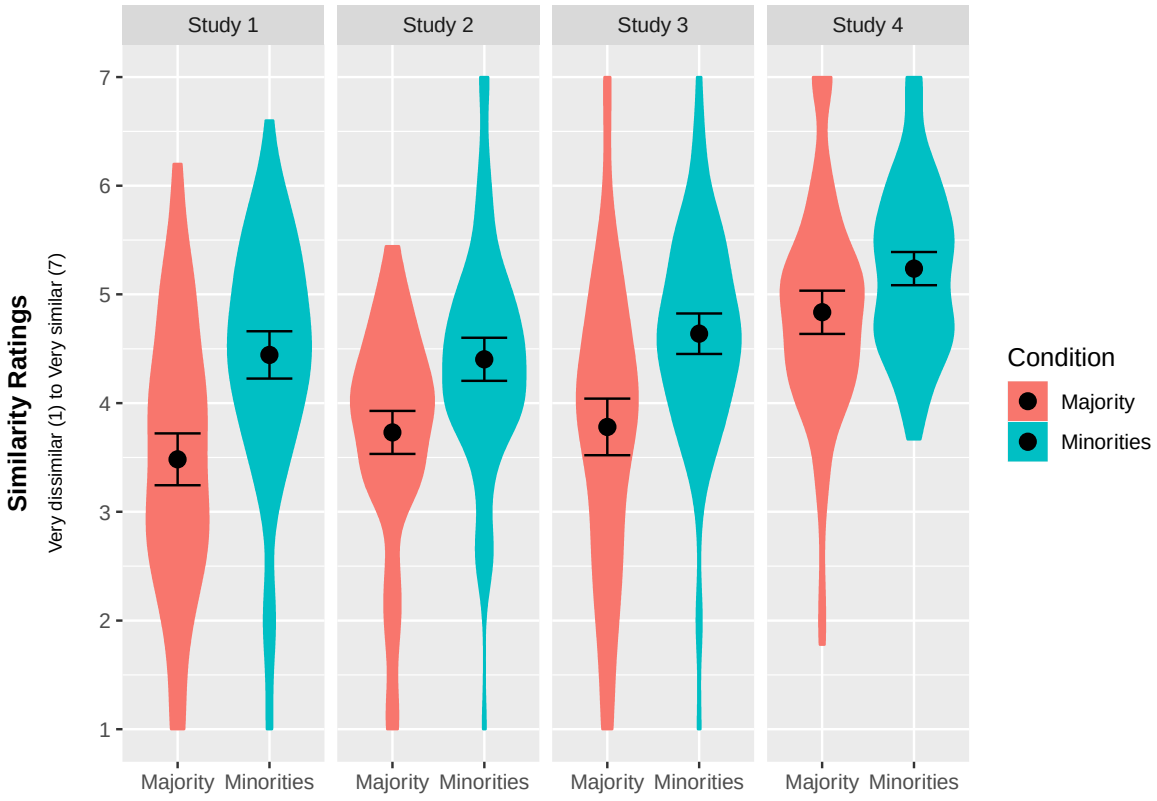
[4] At the time of pre-registering and running this study, I had only tested the effect among members of majority groups under the name of the "outgroups homogeneity effect." As a result, in the pre-registration, the label "outgroup" corresponds to the minority groups and the label "ingroup" corresponds to the majority group.

groups, participants taking the perspective of the majority group rated the minorities as more homogeneous than the majority.

The evidence from Studies 1-4 provides support for a minority-groups homogeneity effect among majority group members, in which members of different minority groups tend to be rated as more similar to one another than members of a single majority group (see Figure 1). I demonstrate support for this effect in the context of U.S. racial and ethnic groups, groups based on sexual orientation and gender identity, and novel, fictional groups. The results from Study 4 suggest that it may not just be the cultural context of the U.S., in which minorities tend to be grouped together under umbrella labels, that contributes to this effect. Instead, this pattern of results may be due to more fundamental cognitive processes that lead people to view members of different minority groups as sharing similar traits or, stated differently, to view majority groups as being more "diverse" on these traits.

Figure 1

The minority-groups homogeneity effect among majority group participants



Note: This figure shows the differences between majority group participants' ratings of the similarity of majority group members vs. minority group members. Across all four studies, participants rated members of minority groups as more similar than members of the majority group. The black dots and error bars represent mean values within each condition and 95% confidence intervals. The red and blue shapes show the distributions of responses within each condition. For the sake of presentation, I omitted the "individuated minority groups" condition from the plot for Studies 1 and 2.

Studies 1-4 provide evidence of a minority-groups homogeneity effect among majority group members, but they do not provide evidence as to what is driving this pattern of results. One possible factor is the use of the labels "majority" and "minority." Cultural meaning ascribed to these labels may lead participants to overestimate the similarities between the minority groups, as members of minority groups tend to share the experience of being marginalized by the more powerful majority group in society. Furthermore, in the context of racial and ethnic groups in the U.S., even if the U.S. were to become a "majority-minority" per Census Bureau projections, White people would still remain the largest racial group even if they no longer made up over 50% of the population, underscoring the importance of understanding how these labels influence majority group members' perceptions. Thus, I was interested in whether perceptions of group similarity would vary when the majority group is presented as smaller (or when it is no longer presented as a majority at all).

Study 5: Varying Majority Group Size and Labels

To assess the role of these labels, I designed a study to vary the way that the groups in the fictional society of Bimboola were described. Specifically, I described the "majority" as either an overwhelming majority (70% of the population), as a slight majority (55% of the population), or as simply the largest group in the society, outnumbered by the combination of all the other groups (30% of the population).

Method

Participants. Two hundred ninety-nine participants (143 women, 147 men, 8 non-binary, 1 other gender; mean age = 36.50) were recruited from Prolific. Participation was restricted to U.S. residents.

Procedure. Study 5 employed a 3 (condition, between-subjects) x 2 (rating type, within-subjects) design. Participants were randomly assigned to one of three conditions: overwhelming majority, slight majority, and non-majority. Across all three conditions, participants read the same description of the groups in Bimboola as in Study 4. The only additional difference in this study was that participants were not prompted to imagine themselves as members of the Ackians. Instead, they provided their ratings from an outside perspective. Following this text, participants read additional text based on their condition. In the overwhelming majority condition, participants read the following:

> *The Ackians are the overwhelming majority group in Bimboola, making up about 70% of the population. All of the other groups are minority groups that together make up 30% of the population.*

In the slight majority condition, participants read the following:

> *The Ackians are a slight majority group in Bimboola, making up about 55% of the population. All of the other groups are minority groups that together make up 45% of the population.*

In the non-majority condition, participants read the following:

> *The Ackians are the largest group in Bimboola, making up about 30% of the population. All of the other groups together make up 70% of the population.*

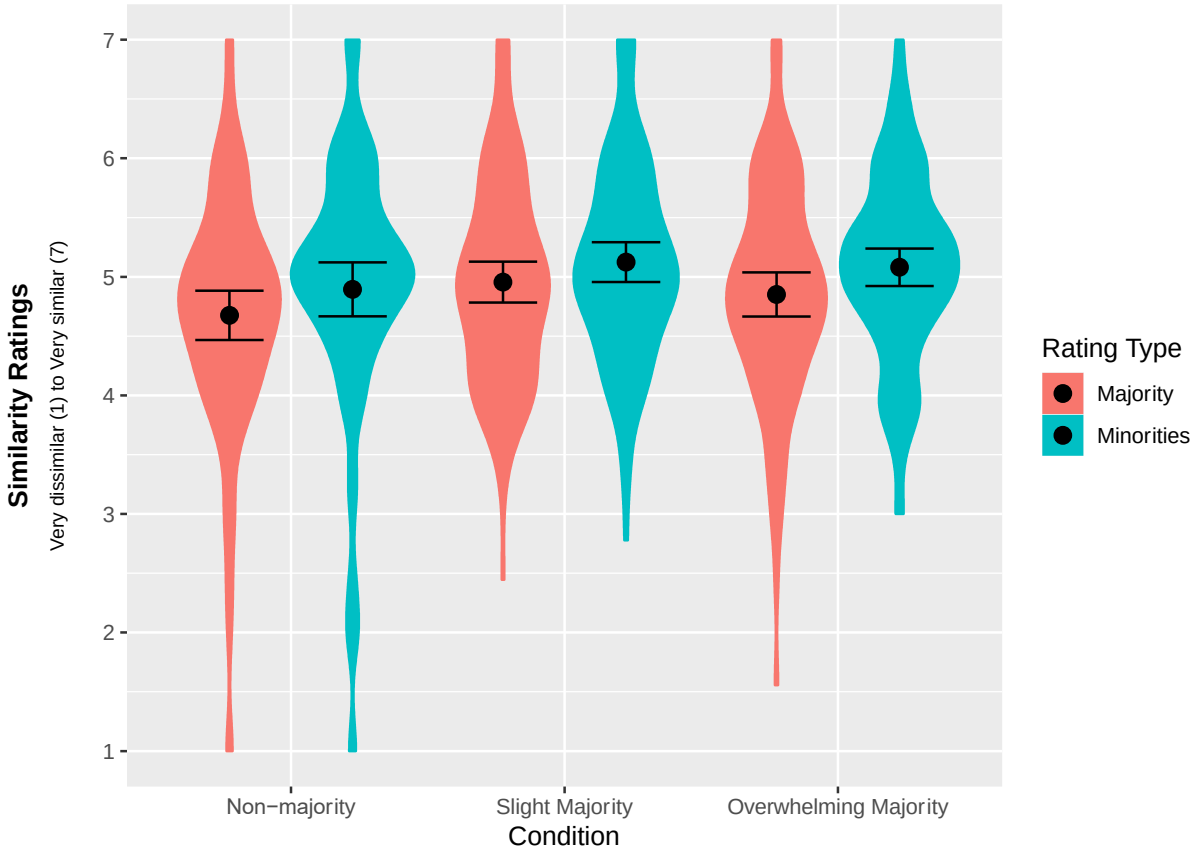
Participants then went through the same learning phase as in Study 4. Then, participants rated the similarity of both the majority *and* the minorities, with the order of these ratings counter-balanced across participants. Finally, participants answered several demographic questions and were given the option to comment on the survey.

Results

I ran a 3x2x2 mixed ANOVA to assess the effect of majority size condition (between-subjects), rating type (within-subjects), and rating order (between-subjects) on similarity ratings. This yielded no main effect of condition, $F(2, 293) = 2.38$, $p = .10$, a significant main effect of rating type, $F(1, 293) = 23.64$, $p < .001$, $\eta_p^2 = 0.075$, a significant main effect of rating order, $F(1, 293) = 13.10$, $p < .001$, $\eta_p^2 = 0.043$, and no significant two-way or three-way interactions, ps > .19. Averaging across all three conditions, participants rated members of the minorities ($M = 5.03$, $SD = 0.94$) as more similar than members of the majority ($M = 4.83$, $SD = 0.96$) (see Figure 2). These results suggest that, regardless of whether the majority group is presented as an overwhelming majority, as a slight majority, or simply as the largest group, the minority groups are still rated as more homogeneous than the majority. Furthermore, and unexpectedly, participants who rated the minority groups first had higher overall ratings of group similarity ($M = 5.11$, $SD = 0.91$) than those who rated the majority group first ($M = 4.75$, $SD = 0.96$). This suggests that participants made similarity ratings of the majority and minorities relative to one another, with these ratings influencing one another. As a result, for the remaining studies, I returned to using between-subjects ratings of similarity to avoid potential order effects.

Figure 2

Similarity ratings of the majority group vs. the minority groups based on condition



Note: This figure shows the average similarity ratings for the majority group and the minority groups in Bimboola for each condition. Averaging across all conditions, participants rated members of the minority groups as more similar to one another than members of the majority group.

Studies 1-5 provide robust support for the existence of a minority-groups homogeneity effect among majority group participants. These studies also rule out alternative interpretations of these findings, demonstrating that this effect is not dependent on the use of particular words or labels but instead characterizes a broader phenomenon related to group cognition. This is most apparent given the evidence of a minority-groups homogeneity effect in the perception of fictional groups, of which participants have no prior knowledge or cultural associations.

In these studies, I assessed perceptions of group homogeneity from the perspective of majority group members (or, in the case of Study 5, from the perspective of outside observers). Given this evidence alone, it is not yet established whether this pattern of results represents a *minority-groups* homogeneity effect or an *outgroups* homogeneity effect because, in Studies 1-4, the minority groups also represent the participants' outgroups. To better understand the nature of this effect and its generalizability, I sought to understand how members of *minority* groups perceive the homogeneity of minorities compared to the majority, and I discuss those efforts in Chapter 3.

CHAPTER THREE

SUPPORT FOR THE MINORITY-GROUPS HOMOGENEITY EFFECT AMONG MINORITY GROUP MEMBERS

The studies in Chapter 1 demonstrate support for an *outgroups* homogeneity effect among participants from majority groups. But how do members of minority groups perceive the similarity of the majority vs. the minorities? The studies in this chapter test whether members of minority groups also tend to rate members of minority groups as more homogeneous than members of the majority group.

There are two possible patterns of results that one might expect based on existing research on group perceptions and identity. One is that members of minority groups will rate members of the majority (an outgroup) as more similar to one another than members of the minority groups (an ingroup), due to the various mechanisms underlying the original outgroup homogeneity effect, such as greater familiarity with individuals and subgroups within the ingroup. Indeed, this effect might only be strengthened by the fact that members of minority groups may identify to varying degrees with the superordinate "minority" category (e.g., an Asian American may or may not identify strongly with the broader group of people of color, which includes members of different racial and ethnic minority groups). As a result, the ingroup might be perceived as more varied and diverse relative to the majority outgroup.

Another possibility is that members of minority groups will rate the minorities as more homogeneous than the majority, just as the majority group participants did in the studies in Chapter 1. Majority group members' perceptions of minority

homogeneity may be driven by beliefs that members of minority groups share common experiences in society. This belief may also be shared by members of the minority groups, who may feel a sense of solidarity with other minority groups.

As one might expect given these competing hypotheses, I find mixed results among participants from minority groups. Among members of racial and ethnic minority groups—people of color in the U.S.— ratings of the similarity of White people and people of color did not differ significantly. As outlined above, it may be the case that some members of racial and ethnic minority groups do not identify as strongly with the superordinate group of people of color or that they do not share as strong a belief in the common fate of minorities, relative to the perceptions of members of the majority group.

Next, I returned to the domain of gender and sexual identity to study the minority-groups homogeneity effect among LGBTQ people. Given that LGBTQ people may have a clearer shared history in the U.S. and, thus, a greater belief in the common fate of these groups, they may be more likely to exhibit the minority-groups homogeneity effect. The use of the phrase "LGBTQ community" further underscores the generally tendency to view LGBTQ people as sharing common interests and goals, whereas umbrella labels for racial and ethnic minority groups do not typically invoke this same sense of communal interests. Indeed, among LGBTQ participants, LGBTQ people were rated as more similar to one another than heterosexual people are to one another, and their ratings did not differ from those of a sample of heterosexual people (the majority group). I also found that LGBTQ participants expressed a greater belief in the common fate of LGBTQ people than heterosexual participants did, and that

belief in the common fate of LGBTQ people was positively associated with perceptions of LGBTQ homogeneity among both samples.

Given the differing results of these two studies, I conducted a third test to compare minority and majority group participants. I recruited participants from England (the majority country in the U.K.) and from Scotland, Wales, and Northern Ireland (the minority countries in the U.K.) and asked them to rate the similarity of either people from England or people from the smaller U.K. countries. Here again I found support for the minority-groups homogeneity effect, with participants from all countries rating people from the minority countries as more similar to one another than people from the majority country. This result may perhaps be less surprising, since the population of England is indeed more diverse along a number of dimensions, such as race and ethnicity. However, this finding, taken together with the study of LGBTQ people, suggests that there are some contexts in which members of minority groups also exhibit the minority-groups homogeneity effect. Below, I describe each of these studies in more detail, outlining evidence that members of some, but not all, minority groups perceive people across minority groups as more similar to one another than people within the majority group. Following the presentation of these studies, I present meta-analytic results of the average minority-groups homogeneity effect among majority and minority group participants.

Study 6

To begin exploring minority group members' perceptions, I revisited the context of racial and ethnic groups in the U.S. I recruited participants of color and White participants and measured their perceptions of the similarity of either people of

color or White people so that I could directly compare patterns of results between samples.

The primary goal of this study was to test whether racial and ethnic minority group members also show a minority-groups homogeneity effect in their ratings of the similarity of minorities vs. the majority. On one hand, if this effect is driven by perceptions that minority groups have shared interests or solidarity with one another, then I might expect that minority group members also perceive members of the minorities as more similar than members of the majority. On the other hand, if the effect is driven by features of *outgroup* perceptions (e.g., members of majority groups having less contact and experience with minority group members), then I might expect majority group members, but not minority group members, to show this effect—and possibly that minority group members might see members of the majority as more similar to one another than members of different minority groups.

Method

Participants. Four hundred participants (193 women, 200 men, 6 non-binary people, 1 other gender; mean age = 34.09) were recruited from Prolific. To ensure even representation between samples, I used Prolific's demographic screeners to recruit 200 White participants (self-reported race: 98% White, 1.5% White and another race, 0.5% did not report) and 200 participants who were people of color ("POC"; self-reported race: 31.0% Asian, 23.5% Black or African American, 16.5% Hispanic or Latino, 10.0% White and Hispanic or Latino, 10% selecting two or more races, 5.0% White non-Hispanic, 4.0% selecting another race). Participation was restricted to U.S. residents.

Procedure. Participants were invited to complete a 3-minute survey about demographic groups in the United States and were randomly assigned to one of two conditions: majority group (White people) or minority groups (people of color). In each condition, participants rated how similar members of their assigned group(s) are to one another on the same nine traits and characteristics as in Studies 2 and 3 (e.g., helpfulness, openness to experience, religiosity), following these instructions:

> *In this set of questions, you will be asked to rate how similar [White people / people of color in the U.S. (that is, people who are Black, Native American, Asian American, Pacific Islander, Latino American, and Multiracial)] are to one other. As you make these ratings, consider the likely similarity of two randomly selected [White people / people of color]. Please note that you will be asked to rate your impression of how similar members of these groups are to each other on average, recognizing that members of all groups can be very different from one another.*

Responses to the similarity items were averaged to create a composite score. I also included the status threat measures from Studies 1 and 2. Participants then answered several demographic questions and were given the option to comment on the survey. I had two competing hypotheses for this study:

> H1: White participants and participants of color will both exhibit a minority-groups homogeneity effect (i.e., rating people of color as more similar than White people).
>
> H2: White participants will exhibit a minority-groups homogeneity effect, but participants of color will not exhibit the same effect (i.e., rating people of color

and White people as equally similar or rating White people as more similar than people of color).

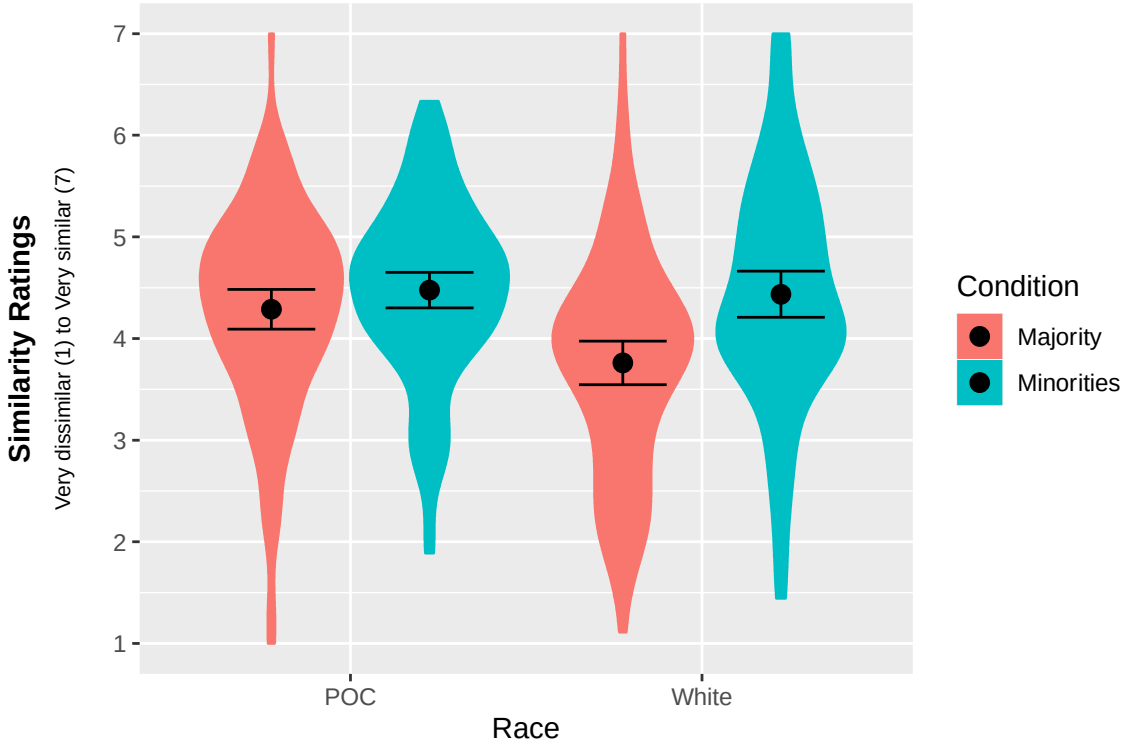
Results

I ran an ANOVA with condition (majority vs. minorities) and participant race (White vs. POC) as predictors of composite similarity scores.[5] This yielded no main effect of condition, $F(1, 396) = 1.69$, $p = .19$, a significant main effect of participant race, $F(1, 396) = 13.21$, $p < .001$, with participants of color ($M = 4.38$, $SD = 0.94$) seeing more homogeneity in whatever group they rated than White participants ($M = 4.10$, $SD = 1.16$), and a significant interaction, $F(1, 396) = 5.62$, $p = .018$. To probe this interaction, I computed simple main effects to test the difference between majority and minority similarity ratings within each group of participants (White participants and participants of color). Among White participants, similarity ratings were higher when rating minority groups ($M = 4.44$, $SD = 1.14$) vs. the majority group ($M = 3.76$, $SD = 1.08$), $F(1, 396) = 21.70$, $p < .001$, $\eta_p^2 = .052$—the minority-groups homogeneity effect documented in all of the previous studies. But among participants of color there was no such effect, as their similarity ratings did not differ significantly whether they were rating the minority groups ($M = 4.48$, $SD = 0.88$) or the majority group ($M = 4.29$, $SD = 0.99$), $F(1, 396) = 1.69$, $p = .19$, $\eta_p^2 = .004$ (see Figure 3), though the direction of the mean difference is the same.

[5] As detailed in the participant demographics, participants' self-reported race did not perfectly match the race information from Prolific's screening feature. I ran the analysis here using the race information from Prolific, but the results are the same when using participants' self-reported race to create categories of White vs. POC participants, as well.

Figure 3

Similarity ratings of the majority group vs. the minority groups based on participant race (participants of color vs. White participants)



Note: This figure shows the average similarity ratings of people of color and White people for each group of participants. White participants rated people of color as more similar to one another than White people are to one another, whereas participants of color did not rate people of color as more similar to one another than White people are to one another.

For the "status threat" measure, I computed correlation coefficients to assess whether perceptions of group similarity were associated with beliefs about the future status of minorities in the U.S. among White and POC samples. Among White participants, perceptions of *majority* group similarity were positively correlated with the belief that minorities would soon have higher status in the U.S., $r(98) = .32$, $p = .001$, but minority groups similarity was not significantly correlated with this belief, $r(98) = .11$, $p = .29$. Among POC participants, perceptions of majority and minority similarity were not significantly correlated with this belief (majority: $r(98) = .06$, $p = .54$; minority: $r(98) = .13$, $p = .22$).

The results thus far suggest that the minority-groups homogeneity effect is observed among majority group members, but not minority group members. However, racial minority group members in the U.S. may identify to different degrees with other minority groups given the vast diversity within the larger group of people of color. As a result, when thinking about the similarity among people of color, they may be more likely to think about differences between their own group's experiences and the experiences of other minority groups. Indeed, racial and ethnic minority groups in the U.S. tend to have very different histories in terms of how they came to be in the U.S. (e.g., Native Americans are the Indigenous peoples of the U.S., whereas Asian Americans tend to be the descendants of immigrants). Might this effect emerge in a context in which minority groups tend to share more history in common?

Study 7

To test this possibility, I revisited the context of sexual and gender identity, as LGBTQ people in the U.S. may be more likely to share a sense of common history

and common fate. I recruited cisgender, heterosexual participants and LGBTQ participants and measured their perceptions of the similarity of either heterosexual people or LGBTQ people.

To further explore why minority group members may or may not perceive homogeneity among minority groups, I included a measure of their belief in the common fate of LGBTQ people. Based on the studies presented thus far, I hypothesized that the minority-groups homogeneity effect may be driven by the belief that minority groups share a common fate, meaning that they have a shared history, a shared experience of being marginalized in society, and a shared investment in societal progress toward equality. As a first test of this proposed mechanism, I included a novel measure of belief in the common fate of minority groups to assess whether it correlates with perceptions of the similarity of these groups.

To begin to understand the potential implications of the minority-groups homogeneity effect, I also added two new measures: 1) a measure of perceived social progress, to capture the extent to which people believe that there has been progress in U.S. society regarding the acceptance of LGBTQ people and 2) a measure of support for public policies related to LGBTQ people. Given the motivation to understand responses to changing demographics, I was interested in further testing whether perceptions of minority groups as homogeneous are related to beliefs about the status and treatment of minority groups in society. Consider, for example, a straight, cisgender person who believes that LGBTQ people are a rather homogeneous group. This person might be more likely to feel concerned about the rising number of LGBTQ people in society—perhaps this threatens their belief in traditional gender

norms and roles—and might thus feel like LGBTQ people have the power to influence the culture at large. As a result, they may overestimate the extent to which societal progress has already been made toward LGBTQ equality, and they may be less likely to support policies that grant additional rights to LGBTQ people. The inclusion of these measures allows me to test whether perceptions of homogeneity, especially among majority group members, are associated with attitudes toward minority groups in society.

Method

Participants. Three hundred ninety-eight participants (186 women, 181 men, 14 non-binary or genderqueer, 17 other gender; mean age = 35.90) were recruited from Prolific. To ensure even representation between samples, I used Prolific's demographic screeners to recruit 200 heterosexual, cisgender participants (self-reported sexual orientation and gender identity: 97% heterosexual; 99.5% cisgender, 0.5% transgender; self-reported race: 76.5% White non-Hispanic, 9.0% Black or African American, 6.5% selecting two or more races, 4.5% Asian, 3.5% selecting another race) and 198 participants who were members of the LGBTQ community (self-reported sexual orientation and gender identity: 32.8% bisexual, 12.6% gay, 11.6% heterosexual, 8.6% pansexual, 34.3% another sexual orientation; 83.3% cisgender, 16.7% transgender; self-reported race: 64.1% White non-Hispanic, 11.6% selecting two or more races, 10.6% Hispanic or Latino, 7.1% Black or African American, 6.6% Asian).[6] Participation was restricted to U.S. residents.

[6] Participants reported their sexual orientation by selecting the checkbox(es) that best represented their identity. I summarize these data here by reporting the percentages for the largest categories and aggregating the remaining selections into "another sexual orientation." Participants reported their gender identity (here, referring to their identification as cisgender or transgender) by selecting whether

Procedure. The procedure for Study 7 was nearly identical to that of Study 3. Participants were randomly assigned to rate the similarity of either heterosexual people or LGBTQ people on nine traits and characteristics (e.g., helpfulness, openness to experience, religiosity), as in previous studies. Following the similarity measure, participants responded to three new measures.[7] First, participants rated their perceptions of the common fate of the minorities on four items: 1) "A gain for one group in the LGBTQ community is a gain for all groups in the LGBTQ community," 2) "LGBTQ people generally share the experience of being marginalized in society," 3) "Generally speaking, LGBTQ people share a common history," and 4) "Generally speaking, LGBTQ people have similar experiences in the world" (Cronbach's alpha = 0.79), rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Second, participants rated their perceptions of societal progress for LGBTQ people on four items: 1) "Over the last several decades, conditions in U.S. society have improved significantly for LGBTQ people," 2) "Over the last several decades, there has been significant progress toward social equality for LGBTQ people," 3) "People in U.S. society are generally accepting of LGBTQ people," and 4) "U.S. institutions, like professional sports teams and the military, are generally friendly toward LGBTQ people" (Cronbach's alpha = 0.77), rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Third, participants rated their support for pro- and anti-LGBTQ policies on four items: 1) "Protecting same-sex marriage – pro-LGBTQ," 2)

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or not they identify as transgender. As in the case of the studies on racial and ethnic groups, there were some differences between Prolific's demographic data and participants' self-reported identities (resulting in some self-reported LGBTQ participants in the cisgender, heterosexual sample, and vice versa). I ran an additional analysis using participants' self-reported identities and did not find any differences, so I report results here using Prolific's demographic markers.

[7] I was unable to find existing measures for perceptions of common fate, perceptions of social progress for LGBTQ people, and support for LGBTQ policies, so I created novel measures for these constructs.

"Protecting access to hormone therapy for transgender people (used to produce physical changes in the body during a person's gender transition) – pro-LGBTQ," 3) "Passing legislation to outlaw teaching of LGBTQ issues and history in schools, e.g., 'don't say gay' laws – anti-LBTQ," and 4) "Passing religious exemption laws (i.e., laws that allow businesses to refuse service to LGBTQ people) – anti-LGBTQ," rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*).[8] Responses to the items for each measure were averaged to create composite scores. Participants then answered several demographic questions and were given the option to comment on the survey.

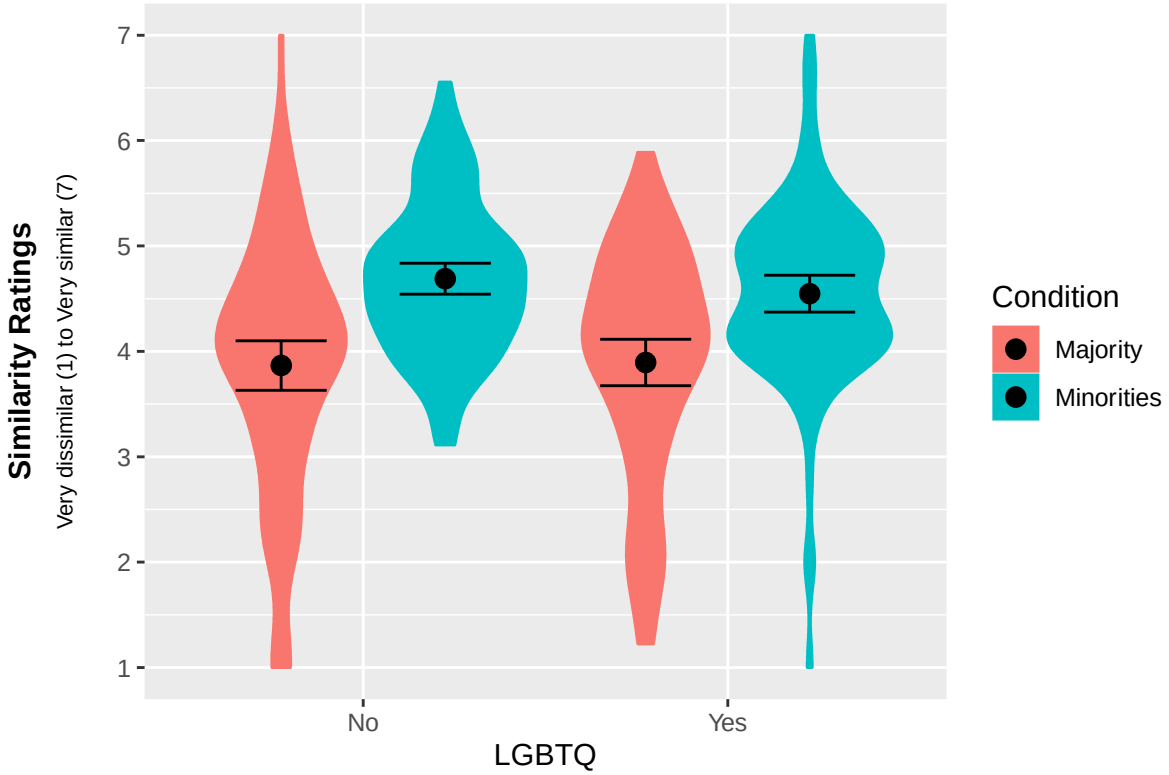
Results

First, I ran an ANOVA with condition (majority vs. minorities) and participant identity (LGBTQ vs. non-LGBTQ) as predictors of composite similarity scores. This yielded a significant main effect of condition, $F(1, 394) = 34.29$, $p < .001$, no main effect of participant identity, $F(1, 394) = 0.04$, $p = .84$, and no interaction, $F(1, 394) = 0.73$, $p = .39$. Across LGBTQ and non-LGBTQ samples, similarity ratings were higher when rating minority groups ($M = 4.62$, $SD = 0.81$) than when rating the majority group ($M = 3.88$, $SD = 1.15$), $t(394) = 7.41$, $p < .001$, providing initial evidence of a minority-groups homogeneity effect even among minority participants (see Figure 4).

[8] There was an issue regarding the policy support measure. Two policies were pro-LGBTQ and two were anti-LGBTQ, but I suspect that many participants may have been confused by this design, because the two anti-LGBTQ policies were negatively correlated with the total scale *after* reverse coding them. As a result, I was unable to interpret the responses to the policy support measure (since participants may have misread them) and do not present the analyses for this measure.

Figure 4

Similarity ratings of the majority group and (LGBTQ) minority groups based on participant identity (non-LGBTQ vs. LGBTQ)



Note: This figure shows the average similarity ratings of LGBTQ people (minorities) and heterosexual people (majority) within each group of participants. LGBTQ and non-LGBTQ participants alike rated LGBTQ as more similar to one another than heterosexual people are to one another.

Next, I tested the correlation between perceptions of minority similarity and common fate among LGBTQ and non-LGBTQ participants. Participants who had greater beliefs in the common fate of LGBTQ people also had greater perceptions of LGBTQ similarity, both among LGBTQ participants, $r(98) = .42$, $p < .001$, and non-LGBTQ participants, $r(96) = .40$, $p < .001$. I compared belief in the common fate of LGBTQ people between the two samples as well, finding that LGBTQ participants were more likely to believe in the common fate of LGBTQ people ($M = 5.21$, $SD = 1.07$) than non-LGBTQ participants ($M = 4.99$, $SD = 0.96$), $t(396) = 2.25$, $p = .025$, Cohen's $d = .23$. I also explored the relation between beliefs in common fate and perceived similarity of the *majority*, finding that LGBTQ participants who had greater beliefs in the common fate of LGBTQ people perceived straight people as more similar to one another, $r(96) = .23$, $p = .021$, but this relationship did not hold among straight participants, $r(96) = .06$, $p = .58$.

Finally, I tested the correlation between perceptions of minority similarity and societal progress for LGBTQ people, finding no correlation among LGBTQ participants, $r(98) = .03$, $p = .79$, nor among non-LGBTQ participants, $r(96) = -.01$, $p = .95$. I also compared perceptions of societal progress for LGBTQ people between the two samples, finding that LGBTQ participants believed that less progress has been made toward LGBTQ equality ($M = 4.74$, $SD = 1.00$) than non-LGBTQ participants ($M = 4.96$, $SD = 0.89$), $t(396) = -2.31$, $p = .021$, Cohen's $d = .23$.

Study 7, unlike Study 6, suggests that some minority groups may exhibit patterns of perception like majority groups, rating minorities as more homogenous than the majority. These data provide initial evidence that the minority-groups

homogeneity effect may extend beyond majority group members, although it may not be universal among all minority groups and social contexts. One reason for this difference is that members of the racial and ethnic minority groups in the U.S. may be less likely to believe in the common fate of these groups, given large differences in their histories and their experiences in modern U.S. society. On the other hand, LGBTQ people may feel a greater sense of common fate with one another, having histories and social movements that are much more closely intertwined. Indeed, the correlational evidence from Study 7 suggests that people who have greater beliefs in the common fate of LGBTQ people are more likely to see them as a homogeneous group. And, in a brief follow-up study simply measuring beliefs in common fate, people of color rated their belief in the common fate of racial and ethnic minority groups on average as 4.38 on a 7-point scale, compared to LGBTQ participants' average ratings of 5.21 in the present study (measured on identical response scales, with similar but not identical items), which descriptively aligns with this explanation. In future studies, I will further assess the role of common fate in the minority-groups homogeneity effect. Before doing so, I sought to test the generalizability of the effect among another sample of majority and minority participants.

Study 8a

Studies 1-7 employed designs that asked participants to think about the similarity of social groups within a single cultural or societal context: racial and ethnic groups, sexual orientation and gender groups, or groups within a fictional society. In Study 8a, I tested whether the minority-groups homogeneity effect extends to another dimension of group-based identity: nationality. Specifically, I compared the perceived

homogeneity of people from the countries within the United Kingdom: England vs. the three "minority" countries of Scotland, Wales, and Northern Ireland. This design allowed us to test whether the minority-groups homogeneity effect occurs within a different type of context and, if so, whether it applies to both majority and minority group members' perceptions.

Method

Participants. Two hundred forty participants (118 women, 120 men, 1 non-binary, 1 did not respond; mean age = 40.03) were recruited from Prolific. To ensure even representation between samples, I used Prolific's demographic screeners to recruit 120 participants with English nationality and 40 participants each with Scottish, Welsh, and Northern Irish nationality. Participation was restricted to U.K. residents.

Procedure. Participants read the following text describing the four countries of the United Kingdom:

> *The United Kingdom (UK) is made up of England, Scotland, Wales, and Northern Ireland. The population of England (as of 2019) is 56,286,961, with the English making up 84% of the UK population. The populations of Scotland, Wales, and Northern Ireland together make up the remaining 16% of the UK population.*

Participants were then randomly assigned to answer questions about the similarity of either English people (majority condition) or Scottish, Welsh, and Northern Irish people (minorities condition) on the nine characteristics used in the

previous studies (e.g., helpfulness, openness to experience, religiosity) using the following instructions:

> *In this set of questions, you will be asked to rate how similar [people living in England / people living in Scotland, Wales, and Northern Ireland] are to one another. As you make these ratings, consider the likely similarity of two randomly selected [English people / people from within and across these three countries]. Please note that you will be asked to rate your impression of how similar members of these groups are to each other on average, recognizing that members of all groups can be very different from one another.*

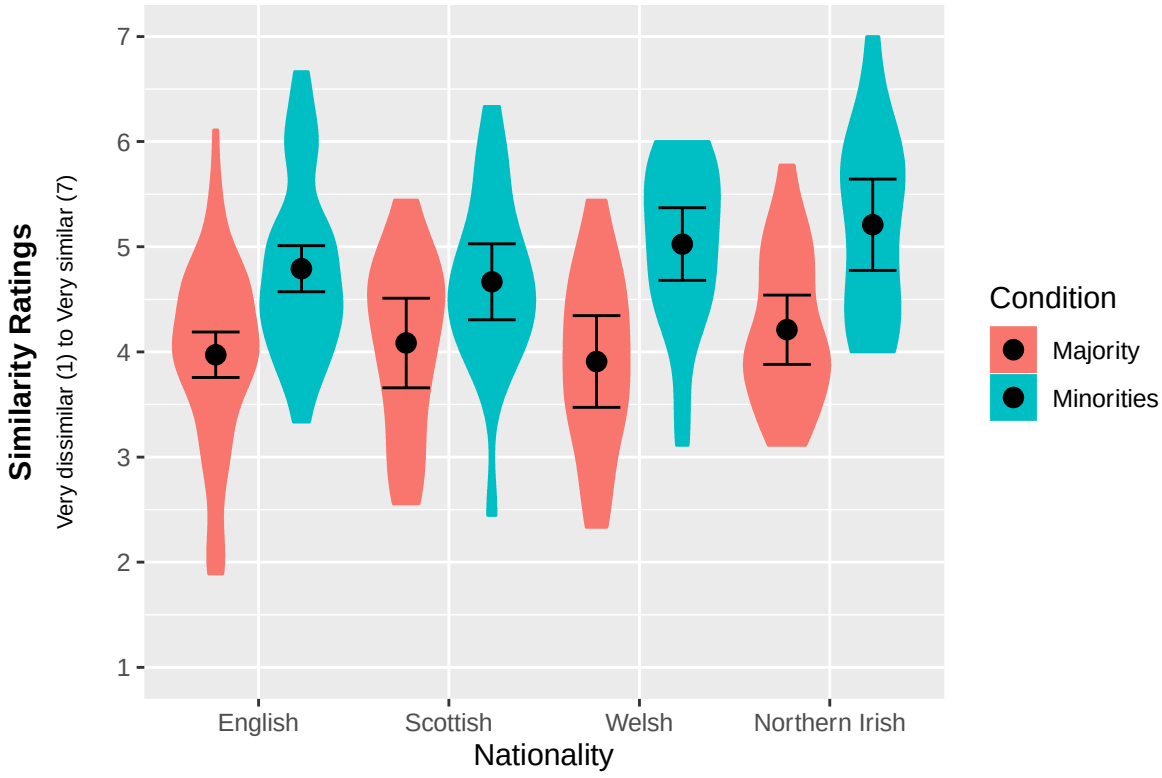
After responding to the similarity items, participants answered several demographic questions and were given the option to comment on the survey.

Results

I ran an ANOVA with condition (majority vs. minorities) and participant nationality (England vs. Scotland vs. Wales vs. Northern Ireland) as predictors of composite similarity scores. This yielded a significant main effect of condition, $F(1, 232) = 29.40$, $p < .001$, $\eta_p^2 = .214$, no main effect of participant nationality, $F(3, 232) = 0.58$, $p = .63$, and no interaction, $F(3, 232) = 0.78$, $p = .51$. Across samples from all four countries, similarity ratings were higher when rating the minority groups ($M = 4.87$, $SD = 0.84$) than when rating the majority group ($M = 4.02$, $SD = 0.83$), providing additional evidence of a minority-groups homogeneity effect even among minority participants (see Figures 5 and 6).

Figure 5

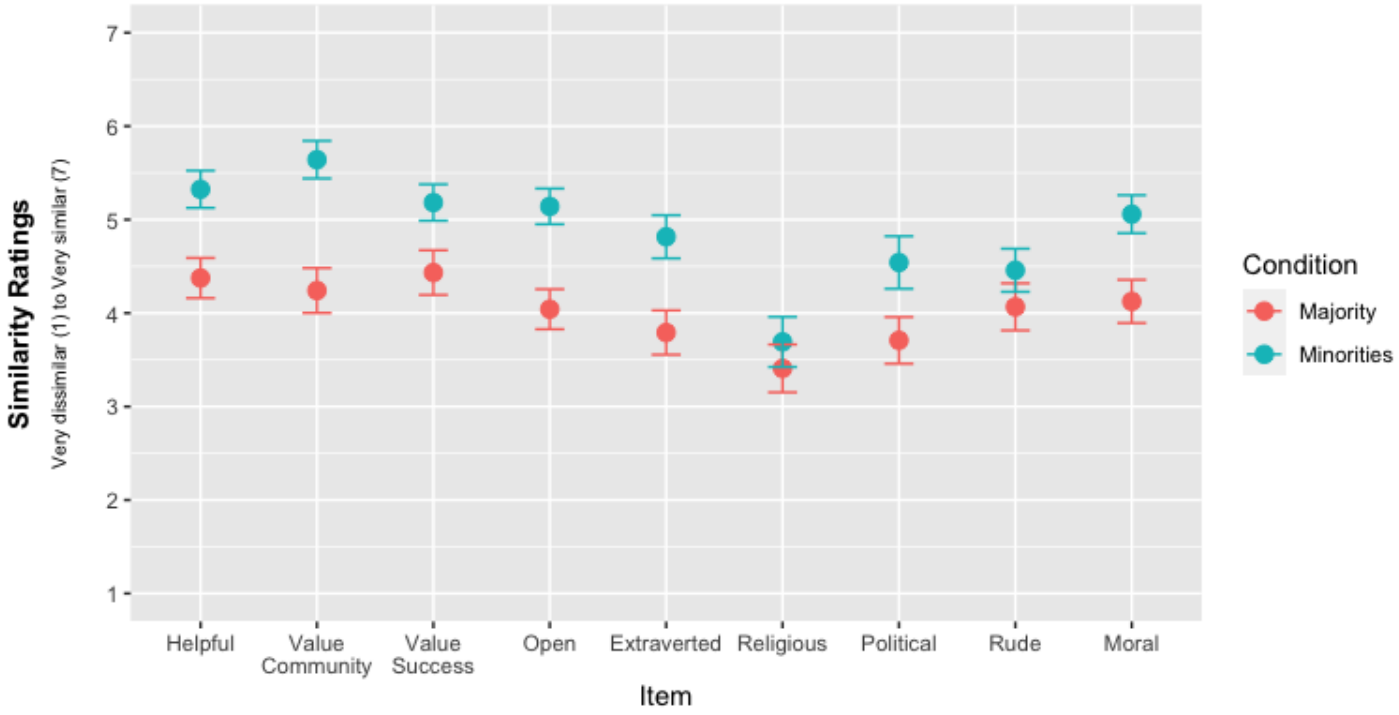
Similarity ratings of the majority country vs. the minority countries based on participant nationality



Note: This figure shows the average similarity ratings of English people (majority) and Scottish, Welsh, and Northern Irish people (minorities) for each group of participants. Participants from all countries rated people from the minority countries as more similar to one another than people from the majority country are to one another.

Figure 6

Similarity ratings of the majority group vs. the minority groups for each similarity item



Note: This figure shows the average similarity ratings of English people (majority) vs. Scottish, Welsh, and Northern Irish people (minorities) for each item measuring similarity. I include this figure to demonstrate that the overall difference in similarity rating does not seem to be driven by any single item or set of items in particular, as the difference appears to be present on nearly all items. This is also the case for all other studies reported here.

Internal Meta-Analysis

The studies described in Chapters 2 and 3 test the minority-groups homogeneity effect among majority and minority group participants. To determine the average effect size of the minority-groups homogeneity effect, I conducted an internal meta-analysis of the studies in this dissertation, separately for participants who belong to the majority and minority groups.

First, I collected the effect sizes from Studies 1-4 and 6-8a, all of which tested the minority-groups homogeneity effect among majority group members (in the contexts of race/ethnicity, sexual orientation, nationality, and fictional groups). I included Cohen's *d* effect sizes for comparisons between majority group members' ratings of the similarity of members of the majority group vs. members of the minority groups (N = 1,325), all of which were statistically significant. I excluded the comparisons involving the individuated minority groups conditions from Studies 1 and 2. I calculated a weighted average of these seven effect sizes using a template created by Goh et al. (2016). Averaging across these studies, the effect size for the minority-groups homogeneity effect was Cohen's $d = .66$, 95% CI [.53, .79], $z = 10.16$, $p < .001$, with majority group participants reliably rating members of minority groups as more similar than members of the majority group.

Next, I collected the effect sizes from Studies 6-8a, which tested the minority-groups homogeneity effect among minority group members (in the contexts of race/ethnicity, sexual orientation, and nationality). I included Cohen's *d* effect sizes for comparisons between minority group members' ratings of the similarity of members of the majority group vs. members of the minority groups (N = 516), two of

which were statistically significant and one of which was not. Averaging across these studies, the effect size for the minority-groups homogeneity effect was Cohen's d = .56, 95% CI [.38, .74], z = 6.20, p < .001, with minority group participants on average rating members of minority groups as more similar than members of the majority group.

This internal meta-analysis provides evidence of a robust minority-groups homogeneity effect, with a slightly smaller effect size (and a wider confidence interval for that effect size) among minority group participants. In the studies of majority group participants, individual study Cohen's d effect sizes ranged from .44 to .96 (with the smallest effect size from the study of fictional groups), whereas in the studies of minority group participants, effect sizes ranged from .20 to 1.06. Although there is a moderate effect averaging across the studies of minority group members, the heterogeneity among these studies is also meaningful, given the clear differences in how members of various minority groups make these ratings. In the following chapter, I explore these differences further by studying possible mechanisms underlying the minority-groups homogeneity effect.

CHAPTER FOUR

MECHANISMS AND IMPLICATIONS OF THE MINORITY-GROUPS HOMOGENEITY EFFECT

In Chapters 2 and 3, I described studies that demonstrate the minority-groups homogeneity effect and test its generalizability across perceptions of different groups, among both majority and minority group samples. The evidence supports the existence of a broad minority-groups homogeneity effect regarding majority group members' perceptions and provides evidence of the effect among minority group members as well (in all contexts except for race and ethnicity in the U.S.). These studies also suggest that this effect extends to several different dimensions of social identity—including race and ethnicity, sexual orientation, and nationality—and even applies to perceptions of fictional groups in a context in which participants have no prior knowledge. Furthermore, in Study 7, participants who had greater belief in the common fate of LGBTQ people also rated LGBTQ people as more similar to one another.

In Chapter 4, I present studies testing three possible mechanisms underlying this effect: 1) whether people perceive minority group members as sharing a common fate, 2) whether people tend to think about minority groups in terms of categories, but majority groups in terms of individuals, and 3) whether people tend to think that traits are distributed more narrowly (i.e., that there is less trait variability) within minority groups. I expected that all three mechanisms might collectively contribute to the emergence of this effect.

To begin, I ran a follow-up to Study 8a, in which participants from countries in the U.K. rated people from the minority U.K. countries as more similar to one another than people from England. I aimed to directly measure whether participants from these countries believe in the common fate of people from the minority countries more so than the common fate of people from the majority country. This differs from Study 7, in which I only measured belief in the common fate of members of the minority groups. Indeed, I found that participants from across the U.K. nations believed that people from Scotland, Wales, and Northern Ireland share a common fate more than people from England share a common fate.

Next, to establish whether beliefs in the common fate of minorities causally influence perceptions of similarity, I experimentally manipulated the common fate of the minority groups. Returning to the fictional context of Bimboola (where participants' beliefs should be more malleable, relative to beliefs about familiar groups), I described the minority groups in different ways before asking participants about their similarity on various traits. To emphasize the common fate of the minorities, I described these groups as sharing a similar history in terms of how they came to Bimboola (i.e., as immigrants around the same time in history) and sharing a similar status in society (i.e., having less political and economic power compared to the majority group). To de-emphasize the common fate of the minorities, I described them as having different histories (i.e., arriving at different times and for different reasons) and having different status in society (i.e., some elite, some middle-class, some lower-class). Participants who learned about the common fate of the minority groups rated them as more similar to one another compared to those who learned

about the "non-common fate" of the minority groups, suggesting that the common fate of these groups affects perceptions of their similarity. However, across all conditions, participants still rated the minority groups as more similar to one another than members of the majority group, suggesting that decreasing perceptions of common fate is not sufficient to eliminate the overall minority-groups homogeneity effect.

To further study this proposed mechanism among real social groups, I designed a similar study manipulating the supposed common fate of members of racial and ethnic minority groups in the U.S. To emphasize their common fate, I described these groups as sharing similar experiences in society of being marginalized and experiencing disparities in status and resources. To de-emphasize their common fate, I described their experiences of marginalization as distinct from the other minority groups, with each group facing their own unique barriers. Here, White participants rated members of the minority groups as marginally more similar when their common fate was emphasized compared to when it was de-emphasized. Together, the results of these two studies suggest that belief in common fate likely plays a role in driving perceptions of minority similarity, but it may not be the only contributing factor given these small effects (and given the persistent difference in similarity ratings for the minority groups vs. the majority group).

As a final examination of the role of common fate, I designed a study intended to indirectly test a condition under which participants may view minorities as sharing less of a common fate. I asked majority group participants to rate the similarity of either all minority groups in a given context (i.e., people of color in the U.S.) or the similarity of a pair of minority groups (e.g., Black Americans and Asian Americans). I

expected that asking participants to think about a pair of minority groups might make the differences between these groups more salient, compared to thinking about all minority groups at a more abstract level. To illustrate this principle, consider asking participants how similar coffee and wine are to each other. Drawing people's attention to these two distinct categories might make them more likely to focus on the differences in features like their flavor, their temperature, the effect they have on the brain, or the times of day that people tend to enjoy them. On the other hand, asking participants how similar coffee, tea, wine, and beer are to each other will likely lead people to focus more on the higher-level commonalities between them (e.g., they are all beverages, they can all come from various regions of the world). Following this line of thought, I hypothesized that participants who were prompted to consider the similarities of a pair of different minority groups, compared to all minority groups, would focus more on their differences. In turn, I expected that participants would rate members of minority groups as more homogeneous than the majority only when they rated the collection of all minority groups, not when they rated a randomly selected pair of minority groups. Unexpectedly, this was not the case; participants rated members of minority groups as more similar regardless of whether they were rating just a pair of minority groups vs. all minority groups. Thus, rather than providing evidence for the "common fate" mechanism, this study provides additional support for the robustness of the minority-groups homogeneity effect, as it emerged even when participants were asked about the similarity of two distinct minority groups.

The studies that examined the common fate interpretation mechanism provide mixed evidence. Although participants who read about the common fate of the

minority groups tended to rate them as more similar than those who read about the *non*-common fate of the minority groups, the effects were small. Furthermore, emphasizing the non-common fate of the minority groups did not eliminate the minority-groups homogeneity effect, as the minority groups were still rated as more similar than the majority group.

What other psychological mechanisms and processes might be driving this effect, then? One possibility is that participants may bring different features to mind when considering members of the majority group compared to members of minority groups. Perhaps when participants think about minority groups, they are more likely to think in terms of higher-level categories (e.g., stereotypes, group-level traits), leading them to focus on abstract similarities between groups in general; but when participants think about the majority group, they may be more likely to think about individual people, making differences more salient. This might be because people personally know a greater number of majority group members or because majority group members are better represented in media. As an example, when participants are asked to think about the similarity of heterosexual people, they might make this judgment by calling to mind *individuals* that they know and comparing these people to each other. Since this group is so large, they may also easily call to mind exemplars who are very different from each other, like a conservative politician and a progressive college student. But when considering the similarity of LGBTQ people, they might make this judgment by considering the various subgroups that make up this larger group, focusing instead on higher-level features like how they are treated in society.

To test this hypothesis, in the study aimed at emphasizing the common fate of racial and ethnic minority groups, I also asked participants (majority group members) at the end to describe what they were thinking about when they rated the similarity of their assigned groups. I then instructed independent coders to rate these responses in terms of how much they referred to individuals (e.g., people they know, personal experiences) and to groups (e.g., stereotypes, group-level traits) on two separate items, described in more detail in the methods for Study 11. Here, I found that participants' responses reflected a greater tendency to think in terms of group-level traits when rating minorities compared to when rating the majority, lending support to the idea that thinking more abstractly about minorities may underlie perceptions of greater minority similarity.

Might there be additional mechanisms driving the minority-groups homogeneity effect? In a final study aimed at understanding why people rate minority groups as more homogeneous, I tested another related idea. Perhaps people assume that larger groups inherently span wider *ranges*, leading them to imagine that the majority group has greater variability in terms of different traits. This may be further bolstered by the fact that, as described just above, people may imagine individuals who are very different from each other when thinking about the majority group. On the other hand, when thinking about smaller groups, people might implicitly assume that there is less variability or a smaller range on given traits, perhaps because they are calling to mind stereotypes or expectations about how members of minority groups behave and creating distributions centered more narrowly around those tendencies.

To test this idea, I asked heterosexual (majority group) participants to generate trait distributions for randomly selected samples of 100 people. For example, to generate a distribution for the trait extraversion, participants considered 100 randomly selected LGBTQ people (or heterosexual people) and estimated how many of those people were very introverted, moderately introverted, somewhat introverted, neither introverted nor extraverted, somewhat extraverted, moderately extraverted, or very extraverted. I then calculated the standard deviation and interquartile range (two measures of variability) of these distributions to assess whether participants created distributions with less variability for minority groups compared to the majority group. I found this to be the case on one trait, with participants creating narrower distributions for how much LGBTQ people (vs. heterosexual people) value individuality, but not on the other two traits of extraversion and openness to experience. This may be because the trait of valuing individuality is more stereotypically associated with LGBTQ people, as LGBTQ people may be viewed as deviating from societal expectations in a heteronormative society. Thus, the tendency to construct less variable distributions for minority groups on stereotypical traits may contribute in part to the minority-groups homogeneity effect, but it likely does not fully explain why people view minority groups as more homogeneous than the majority group on non-stereotypical traits.

Beyond understanding the mechanisms underlying the minority-groups homogeneity effect, I also sought to study its potential consequences. Given that this research began with the question of how members of majority groups respond to changing demographics, I was especially interested in whether majority group

members' perceptions of minority similarity are associated with concerns about their own status, feelings of threat, and beliefs about social inequality. In the earlier studies of Chapter 2, I found mixed evidence for the hypothesis that White participants' perceptions of minority similarity were related to feelings of group status threat. In Chapter 3, I measured participants' perceptions of societal progress toward LGBTQ equality and did not find any association between this measure and participants' ratings of LGBTQ similarity. Here, in Chapter 4, I present studies testing the relation between perceptions of minority similarity and a broader range of possible consequences of these perceptions. I included items from various existing measures to assess different types of feelings of threat in response to societal changes, such as White participants' threat related to perceived declines in their own status, perceived increases in the status of other groups, and changes to the general culture of the U.S. Surprisingly, none of the measures included were associated with ratings of the similarity of minority groups. However, a few select items were associated with perceptions of minority similarity only for Republican participants or only for participants who also believed that minority group members share more of a common fate. Thus, it seems that the minority-groups homogeneity effect is not as clearly associated with concerns in response to changing demographics as originally hypothesized. In the general discussion of Chapter 5, I return to this question to consider other potential implications of the minority-groups homogeneity effect to explore in future research.

Below, I describe in detail these five studies exploring the potential mechanisms and implications of the minority-groups homogeneity effect. Following

the presentation of these individual studies, I include an internal meta-analysis summarizing the associations between perceived minority similarity, beliefs in the common fate of minorities, and beliefs about the future status of minorities in the U.S.

Study 8b

In Study 8a that was described earlier, participants who were members of both the majority group and the minority groups in terms of U.K. nationality rated people from the minority U.K. countries as more similar to one another than people from the majority U.K. country. In Study 8b, I measured the degree to which participants perceive people from the minority countries as sharing more of a common fate than people from England. Study 7 also included a measure of the common fate of LGBTQ people; but whereas Study 7 examined differences between majority and minority participants in their perceptions of the common fate of minorities, this study examines participants' perceptions of the common fate of the minorities compared to the common fate of the majority. If people believe that members of minority groups tend to share more of a common fate than members of the majority do, then this may explain, at least in part, why they perceive minority groups as more homogeneous than the majority.

Method

Participants. Two hundred participants (100 women, 99 men, 1 did not provide their gender; mean age = 38.39) were recruited from Prolific. To ensure even representation between the majority and minority samples, I used Prolific's demographic screeners to recruit 100 participants with English nationality and 100

participants with either Scottish, Welsh, or Northern Irish nationality. Participation was restricted to individuals who were U.K. residents.

Procedure. Participants read the same introductory text as in Study 8a about the populations of the U.K. countries. Participants were then randomly assigned to answer questions about the common fate of either English people (majority condition) or Scottish, Welsh, and Northern Irish people (minorities condition) using the following items:

1. *Compared to the [majority English population in the UK / minority populations in the UK (Scottish, Welsh, and Northern Irish people)], [Scottish, Welsh, and Northern Irish people / English people] generally share a common history.*
2. *Compared to the [majority English population in the UK / minority populations in the UK (Scottish, Welsh, and Northern Irish people)], [Scottish, Welsh, and Northern Irish people / English people] generally have similar experiences in the world.*

Responses to these two items were averaged to create a composite score (Cronbach's alpha = 0.76). Participants then answered several demographic questions and were given the option to comment on the survey.

Results

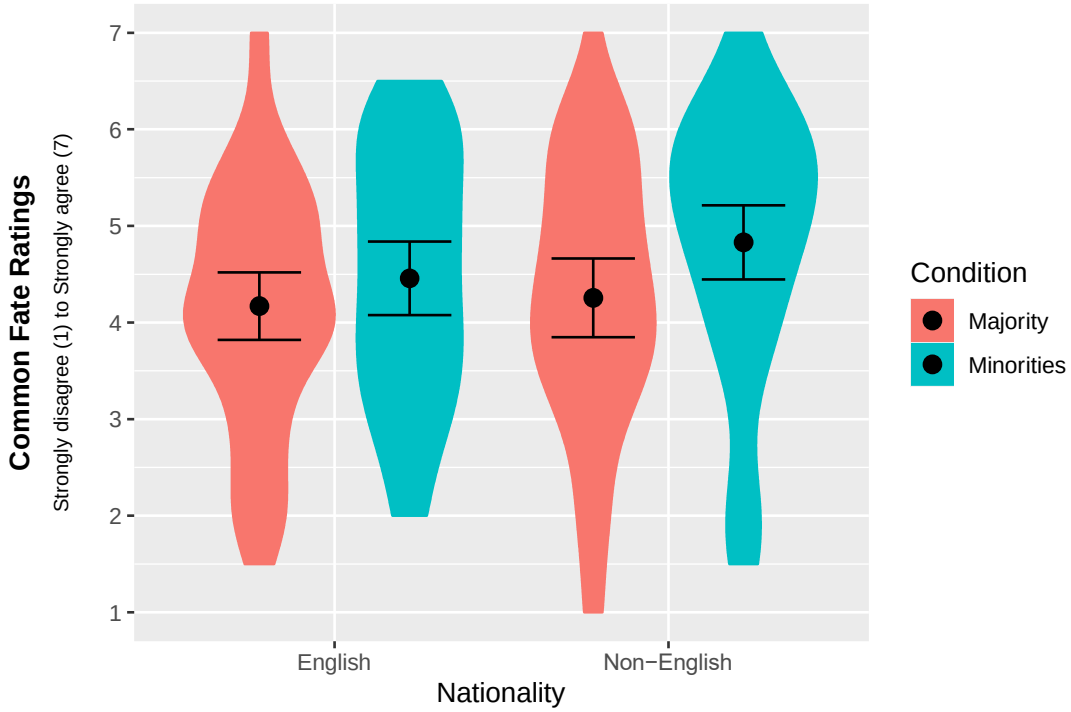
I ran a 2x2 ANOVA with condition (majority vs. minorities) and participant nationality (England vs. the three "minority" countries of Scotland, Wales, and Northern Ireland) predicting ratings of common fate. This yielded no main effect of condition, $F(1, 196) = 1.15$, $p = .28$, no main effect of participant nationality, $F(1,$

196) = 0.10, p = .75, and no interaction, $F(1, 196) = 0.57$, p = .45.[9] Given the nonsignificant interaction, I then compared ratings of the common fate of minorities vs. the majority, averaging over nationality. Across samples, ratings of common fate were higher for minority groups (M = 4.66, SD = 1.36) vs. the majority group (M = 4.21, SD = 1.32), $t(196) = 2.28$, p = .024. This pattern of results suggests that people across groups perceive the people of the minority U.K. countries as sharing more of a common fate than the people of England, which may in part explain why members of the minority countries are rated as more similar to one another (see Figure 7).

[9] I conducted this and all ANOVA analyses using Type III sums of squares, meaning that main effects should be interpreted as the effect of one factor, holding the other factor constant at the reference category (as one would interpret the coefficients in a regression analysis), as opposed to being interpreted as an average main effect averaging across the other factor. As a result, here, there is a nonsignificant "main effect" but a significant contrast between majority and minority ratings averaging over nationality.

Figure 7

Common fate ratings of the majority group vs. the minority groups based on participant nationality



Note: This figure shows the average belief in the common fate of English people vs. Scottish, Welsh, and Northern Irish people for each group of participants. Averaging across participant nationality, participants rated people from the minority countries as sharing a common fate to a greater degree than people from the majority country.

Study 9

In Study 9, I manipulated the extent to which the minority groups in a fictional context (the same as Study 4) were presented as sharing a common fate. Participants were randomly assigned to read the same basic description of the groups from Study 4 (control condition), a description that emphasized the shared history and status of the minority groups (common fate condition), or a description that emphasized the different histories and statuses of the minority groups (non-common fate condition). I expected that the minority groups would be rated as more homogeneous when their common fate was emphasized.

Method

Participants. Six hundred participants (298 women, 295 men, 4 non-binary, 2 other gender, 1 did not provide their gender; mean age = 39.41) were recruited from Prolific. Participation was restricted to U.S. residents.

Procedure. Study 9 employed a 3 (condition) x 2 (rating type) between-subjects design. Participants were randomly assigned to one of three conditions: control, common fate, and non-common fate. Across all three conditions, participants read the following text:

> *Imagine for the purpose of this study that there is a society called Bimboola. Within Bimboola, there are several groups of people called the Ackians, the Brites, the Cepians, the Drivians, and the Elies. The Ackians are the majority group in Bimboola, making up over half of the population. All of the other groups are minority groups that together make up less than half of the population.*

Each of these groups has a unique set of beliefs and cultural practices – for example, the Brites and Cepians generally practice different religions. However, there is also similarity across the groups – a person from the Ackians and a person from the Elies might be more similar to each other than they are to the people from their own groups. People in Bimboola regularly interact with others from their own groups and with people outside of their groups. And although there are areas of Bimboola that are largely inhabited by Brites, Cepians, etc., people from all groups live in reasonable proximity to each other.

In between these two paragraphs, there was additional information provided to participants in the common fate and non-common fate conditions. Participants in the common fate condition read the following:

The minority groups share a similar history in terms of how they arrived in modern Bimboola and what their current circumstances are like. The Cepians were the first group to establish the society of Bimboola, and the Brites, Drivians, and Elies immigrated to Bimboola shortly afterwards. Forty years later, the Ackians colonized Bimboola and became the largest and most powerful group, with the various minority groups having less political and economic power, and less cultural influence.

Participants in the non-common fate condition read the following:

Each of the minority groups has a different history in terms of how they arrived in modern Bimboola. The Cepians were the first group to establish the society of Bimboola, and the Drivians and Ackians immigrated there shortly

afterwards. Forty years later, the Brites arrived, moving from a nearby area. The Elies came to Bimboola more recently as refugees from a society further away. Although the Drivians are a minority in Bimboola, they tend to be wealthy and to occupy positions of economic and cultural influence. The Ackians and Brites are moderately well-off in terms of status, whereas the Cepians make up something of a working middle class. The Elies, given their status as refugees, are the worst off economically.

Following this descriptive text, the procedure was the same as in Study 4. Participants went through a learning phase in which they read non-diagnostic statements about actions taken by members of the different groups in Bimboola. Participants were then randomly assigned to rate the similarity of either the minority groups or the majority group, using the same items as in Study 4. Participants were then asked to complete a single-item manipulation check, rating their agreement with the statement: "The minority groups in Bimboola share a common fate (i.e., a gain for one of the minority groups is a gain for all of the minority groups)" on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Finally, participants answered several demographic questions and were given the option to comment on the survey.

Study 9 was pre-registered on the Open Science Framework (https://osf.io/3cae2). The hypotheses were as follows:

H1: In the "common fate"[10] condition, participants (who read that minority groups have similar backgrounds and status in society) will perceive the minority groups as more similar than the majority group.

[10] In the pre-registration, I refer to the conditions as "shared fate" and "non-shared fate." Here, I opted for the wording of "common fate" to invoke the gestalt principle by which elements moving together

H2: The "common fate" condition will not differ significantly from a control condition that does not receive explicit information about common fate.

H3: In the "non-common fate" condition, participants (who read that each minority group has a different history and status in society) will not perceive the minority groups as more similar than the majority group.

Results

First, I ran a one-way ANOVA to assess the effect of the manipulation on the manipulation check. I found a significant main effect of the manipulation, $F(2, 597) = 5.75$, $p = .003$, $\eta_p^2 = 0.019$. Pairwise comparisons revealed that participants in the common fate condition ($M = 4.99$, $SD = 1.32$) rated the minorities as sharing a common fate to a greater degree than those in the non-common fate condition ($M = 4.53$, $SD = 1.46$), $t(597) = 3.35$, $p = .003$, but not to a significantly greater degree than those in the control condition ($M = 4.70$, $SD = 1.34$), $t(597) = 2.15$, $p = .08$. Ratings on the manipulation check did not differ significantly between the control and non-common fate conditions, $t(597) = 1.23$, $p = .44$. This suggests that the manipulation was weakly effective in nudging participants to think about the minorities as sharing a common fate to a greater or lesser degree in the common fate and non-common fate conditions, respectively.

Next, I ran a 3x2 ANOVA to assess the effect of common fate condition and rating type on similarity ratings. This yielded no main effect of condition, $F(2, 594) = 0.67$, $p = .51$, a significant main effect of rating type, $F(1, 594) = 34.08$, $p < .001$, $\eta_p^2 =$

are perceived as a unified group (see Campbell, 1958). Also note that common fate differs from "linked fate," a concept in political science describing one's sense of connection to and identification with one's ingroup (Dawson, 1995).

0.099, and no interaction, $F(2, 594) = 1.14$, $p = .32$. Regarding the main effect of rating type, averaging across all three conditions, participants rated minorities ($M = 5.29$, $SD = 0.81$) as more similar than the majority ($M = 4.75$, $SD = 0.82$), $t(594) = 8.09$, $p < .001$. To further explore these data, I conducted pairwise t-tests grouped by rating type using a Bonferroni correction, revealing a significant difference in ratings of the similarity of minorities between the common fate condition ($M = 5.43$, $SD = 0.81$) and the non-common fate condition ($M = 5.11$, $SD = 0.71$), $p_{adjusted} = .018$, and no differences in minority ratings when comparing the common fate condition to the control and the non-common fate condition to the control. Furthermore, consistent with H2, ratings of minority similarity in the non-common fate condition were significantly lower than the average of the other two conditions, $p = .009$. Next, I conducted pairwise t-tests grouped by condition using a Bonferroni correction, revealing significant differences between majority and minority similarity ratings within each condition, $ps_{adjusted} < .001$.

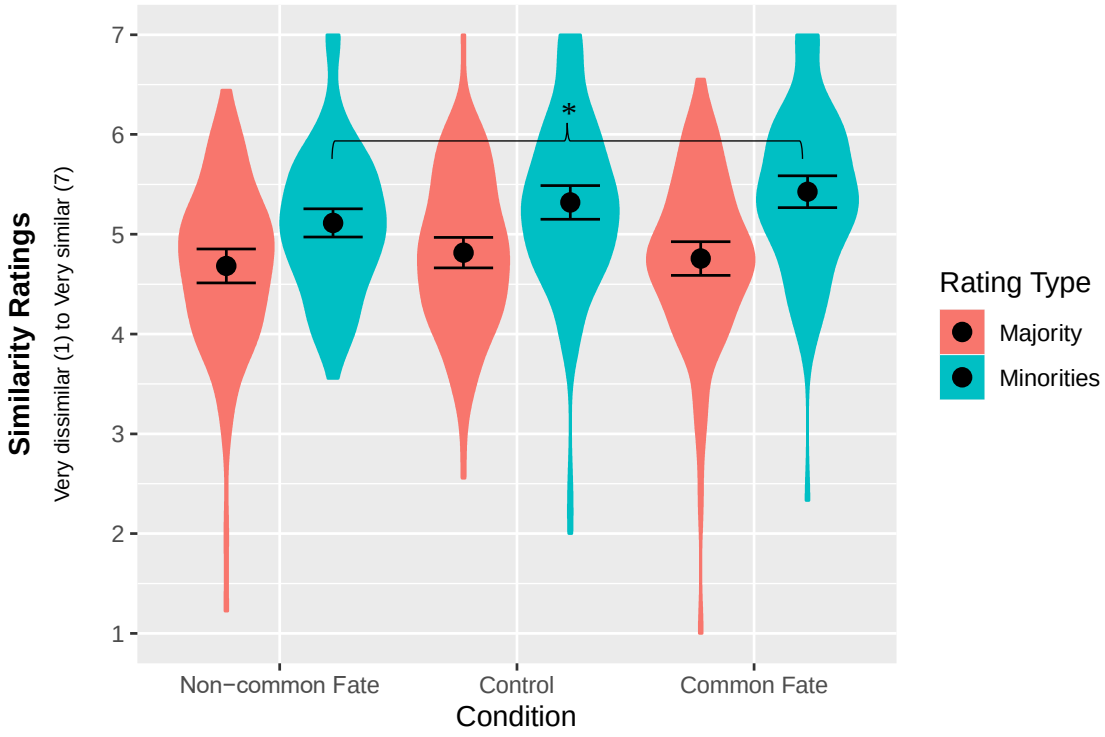
Contrary to the hypotheses, reducing the degree to which participants perceived minorities as sharing a common fate did not eliminate the difference between similarity ratings of the minorities and the majority (see Figure 8). However, several interesting results emerged from this experiment that contribute to a deeper understanding of the minority-groups homogeneity effect. First, the manipulation was somewhat effective in the sense that participants in the common fate condition rated the common fate of minorities as higher than in the non-common fate condition, but neither of these conditions differed significantly from the control condition. This may in part explain the persistent difference in similarity ratings between minorities and the

majority across all three conditions, as the manipulation may not have been strong enough to mitigate the effect entirely.

Second, while the interaction effect was not significant, pairwise contrasts revealed a significant difference between minority similarity ratings in the common fate and non-common fate conditions, and these were the two conditions that also differed in their perceptions of the common fate of the minorities based on the manipulation check. This provides some evidence that perceptions of common fate may influence the perceived similarity of minorities, even though the difference between the majority and minorities (i.e., the minority-groups homogeneity effect) was still present across conditions.

Figure 8

Similarity ratings of the majority group vs. the minority groups based on condition



Note: This figure shows the average similarity ratings for the majority group and the minority groups in Bimboola for each condition. In all conditions, participants rated members of the minority groups as more similar to one another than members of the majority group are to one another. Participants who learned about the common fate of the minority groups rated them as significantly more similar to one another than participants who learned about the *non*-common fate of the minority groups.

Study 10

As an additional test of the proposed common fate mechanism, I manipulated the extent to which U.S. minority groups would be viewed as sharing a common fate. Participants were randomly assigned to one of four conditions: majority similarity (simply rating the similarity of White people to another), minorities similarity (simply rating the similarity of people of color to one another), "common fate" minorities similarity (reading about commonalities in the experiences of U.S. racial and ethnic minority groups before rating their similarity), or "non-common fate" minorities similarity (reading about differences in the experiences of U.S. racial and ethnic minority groups before rating their similarity). I expected that these minority groups would be rated as more homogeneous when their common fate was emphasized.

Method

Participants. Three hundred ninety-nine participants (198 women, 193 men, 5 non-binary, 3 other gender; mean age = 41.06) were recruited from Prolific. Participation was restricted to U.S. residents.

Procedure. Study 10 employed a between-subjects design. Participants were randomly assigned to one of four conditions: control majority, control minorities, common fate minorities, and non-common fate minorities. In the control majority and control minorities conditions, participants simply read instructions about rating the similarity of their assigned group(s).

In the common fate minorities condition, before reading the instructions, participants read the following text emphasizing the shared experiences of U.S. racial and ethnic minority groups:

Consider the experiences members of different minority groups in the U.S. have had. Asian Americans, Black Americans, Hispanic Americans, Multiracial Americans, Native Americans, and Pacific Islanders have had many of the same experiences. They are often the only person of their ethnicity in a group. They know that many people harbor negative stereotypes about them and they worry that they might do something that appears to confirm those stereotypes. They can face barriers to living in the best residential neighborhoods that members of the majority don't have to face. They suffer higher rates of severe illness and death from a range of different medical conditions than their majority counterparts. They face educational hurdles that majority-group members face less often.

Participants in the non-common fate minorities condition read the following text emphasizing the distinct experiences of U.S. racial and ethnic minority groups:

Consider the experiences members of different minority groups in the U.S. have had. Asian Americans, Black Americans, Hispanic Americans, Multiracial Americans, Native Americans, and Pacific Islanders have had very different experiences in many ways. They tend to live in very different neighborhoods, segregated from one another. They have tended to arrive in the United States in very different ways. They know that many people harbor negative stereotypes about them that are different than the stereotypes of other minority groups (e.g. Asian Americans are stereotyped as docile, but Black Americans are stereotypes as dangerous)—and they worry that they might do something that appears to confirm the stereotypes of their group. They suffer

illness and death from medical conditions that afflict their group more than other groups (e.g. higher rates of mental illness among Native Americans, higher maternal mortality among Black Americans).

Participants then rated the similarity of the group(s) to which they were assigned, using the same nine items from earlier studies of U.S. racial and ethnic groups. Following these similarity ratings, participants responded to several measures assessing the potential implications of perceiving minority groups as homogeneous. I included 11 items designed to assess group status threat—the belief that minorities would gain status in the U.S. and/or would threaten the status of White people in the U.S.—and endorsement of a colorblind ideology. I expected that people who perceived minority groups as homogeneous would be more likely to believe that minority groups have gained or will soon gain status in the future of the U.S. and would be more likely to endorse the belief that people in U.S. society place too much of an emphasis on differences between racial and ethnic groups. Below, I describe the items included, organized by the underlying construct I aimed to measure. All items were measured on 7-point scales except where indicated. Items were averaged for each construct to create composite measures.

Future status of people of color (alpha = 0.85):

1. In the future, people of color will have considerably more political power than they do now.
2. In the future, people of color will have considerably higher social and economic status than they do now.

3. In the future, people of color will have a considerably larger influence on U.S. culture than they do now.

Realistic threat (items from Danbold & Huo, 2015; alpha = 0.74):

1. In the future, ethnic groups other than my own will get more from this country than they contribute.
2. In the future, social services will become less available to my ethnic group because of the growth of other groups.

Prototypicality threat (items from Danbold & Huo, 2015; alpha = 0.76):

1. I fear that in 40 years time, it won't be clear what it means to be American.
2. I fear that in 40 years time, my ethnic group will not represent the American identity.

Colorblind ideology, color evasion dimension (items from Whitley et al., 2022; alpha = 0.91)

1. I wish people in our society would stop obsessing so much about race and ethnicity.
2. America would be better off if we stopped placing so much importance on race and ethnicity.

Perceptions of minority representation in Congress (participants provided numeric responses):

1. In the year 2001, the U.S. Congress had 63 racial and ethnic minority members (out of 535 total members of Congress). Currently (in 2023), how many members of Congress do you think are from racial and ethnic minority groups?

2. In the year 2050, how many members of Congress do you estimate will be from racial and ethnic minority groups?

Participants then completed a three-item measure of belief in the common fate of minority groups (included as a manipulation check), rating their agreement with the following items: 1) "People of color generally share a common history," 2) "People of color generally have similar experiences in the world," and 3) "People of color generally share the experience of being disadvantaged in U.S. society." Finally, participants answered several demographic questions and were given the option to comment on the survey.

Study 10 was pre-registered on the Open Science Framework (https://osf.io/gf75w). The hypotheses were as follows:

H1a: Participants' perceptions of the similarity of minority groups will be higher when the common fate of minority groups is emphasized and lower when the common fate of minority groups is de-emphasized.

H1b: Regarding specific comparisons between conditions, I hypothesize that the emphasized common fate and de-emphasized common fate conditions will be significantly different from each other and that each of these conditions may or may not be significantly different from the control condition.

H2: Participants will rate members of minority groups as more similar than members of the majority group. The difference between minority and majority ratings will be greater when the common fate of minority groups is emphasized and smaller when the common fate of minority groups is de-emphasized.

H3: Perceptions of the similarity of minority groups will be positively correlated with feelings of group status threat (including beliefs that people of color will gain status in the future of the U.S. and that the status of White Americans will be threatened in the future) and with endorsement of a colorblind ideology.

H4: Feelings of group status threat and endorsement of a colorblind ideology will also differ between conditions. I hypothesize that the emphasized common fate and de-emphasized common fate conditions will be significantly different from each other and that each of these conditions may or may not be significantly different from the control condition.

Results

Primary Analyses

First, I ran a one-way ANOVA to assess the effect of the manipulation on the manipulation check (i.e., the measure of perceived common fate of minority groups). I did not find a significant effect of the manipulation, $F(3, 395) = 1.46$, $p = .23$. However, I included the manipulation at the end of the study, following the implication measures, so it is possible that any effect of the manipulation became weaker by the time participants reached the end of the survey. To assess the effect of the manipulation on perceptions of minority similarity, I ran a one-way ANOVA and found a significant main effect, $F(3, 395) = 12.44$, $p < .001$, $\eta_p^2 = 0.086$. Pairwise comparisons revealed that participants in the common fate condition rated the minorities as marginally more similar than participants in the non-common fate condition, $t(395) = 2.50$, $p = .06$, and no other differences between the three minority

conditions were significant (see Figure 9). Furthermore, replicating the robust minority-groups homogeneity effect, participants across all minority conditions rated the minority groups as more similar than the majority, *p*s < .003. As an additional, non-pre-registered analysis to examine the role of common fate, I assessed the correlation between ratings of the common fate of minorities (manipulation check measure) and perceptions of the similarity of the minority groups (collapsing across the three minority conditions) and found a significant, positive correlation, $r(297) = .30$, $p < .001$ (see Figure 10). Altogether, these results provide weak support for the idea that perceptions of the common fate of minorities may play a role in influencing perceptions of the similarity of minority groups. However, given these results, it is likely that there are additional mechanisms driving this effect.

Next, to explore potential implications of perceived minority similarity, I calculated correlation coefficients between minority similarity (across all three minority conditions[11]) and the measures of group status threat and colorblind ideology. Minority similarity was not significantly correlated with the anticipated future status of people of color, $r(297) = .09$, $p = .14$, realistic threat, $r(297) = -.05$, $p = .39$, prototypicality threat, $r(297) = -.09$, $p = .13$, endorsement of colorblind ideology, $r(297) = -.003$, $p = .96$, or estimates of the future number of people of color in Congress, $r(297) = .05$, $p = .42$. The only significant correlation was between perceived minority similarity and estimates of the *current* number of people of color in

[11] To examine the possibility that the manipulation might have influenced the relations between these variables, I also calculated correlations between the implication measures and perceived similarity only in the control minority condition, and the results did not differ.

Congress, $r(297) = .12$, $p = .045$. Furthermore, there were no significant differences between conditions on any of these measures.

Exploratory Analyses

Although participants' ratings of the similarity of people of color were not meaningfully correlated with these measures of potential implications, I explored the data further to examine whether these associations may depend on other factors. First, I was interested in whether participants' similarity ratings might be associated with feelings of threat specifically when they *also* feel that members of minority groups share a common fate. To test this possibility, I ran regression models testing the interactive effect of similarity ratings (across all three minority conditions) and belief in the common fate of people of color on these implication measures. Only one of these models yielded a significant interaction between similarity ratings and beliefs in the common fate of the minority groups. Specifically, participants' estimates of the future number of people of color in Congress was significantly predicted by the interaction between these two variables, $b = 11.63$, $p = .003$. To decompose this interaction, I computed simple slopes for the relationship between perceived minority similarity and participants' estimates for the number of people of color in Congress at different levels of belief in the common fate of minorities. Among participants with greater belief in the common fate of minorities (one standard deviation above the mean), estimates of the future number of people of color in Congress increased with greater perceptions of minority similarity (slope = 23.49, 95% CI [6.67, 40.32], whereas this relationship was not as strong among people with lower beliefs in the common fate of minorities (confidence intervals for the simple slopes at the mean and

one standard deviation below the mean included zero). Thus, it may be the case that perceptions of minority similarity only influence people's beliefs about changing representation in the U.S. when they also believe that members of minority groups share a common fate. However, I did not find evidence of this interaction on any other implication measures.

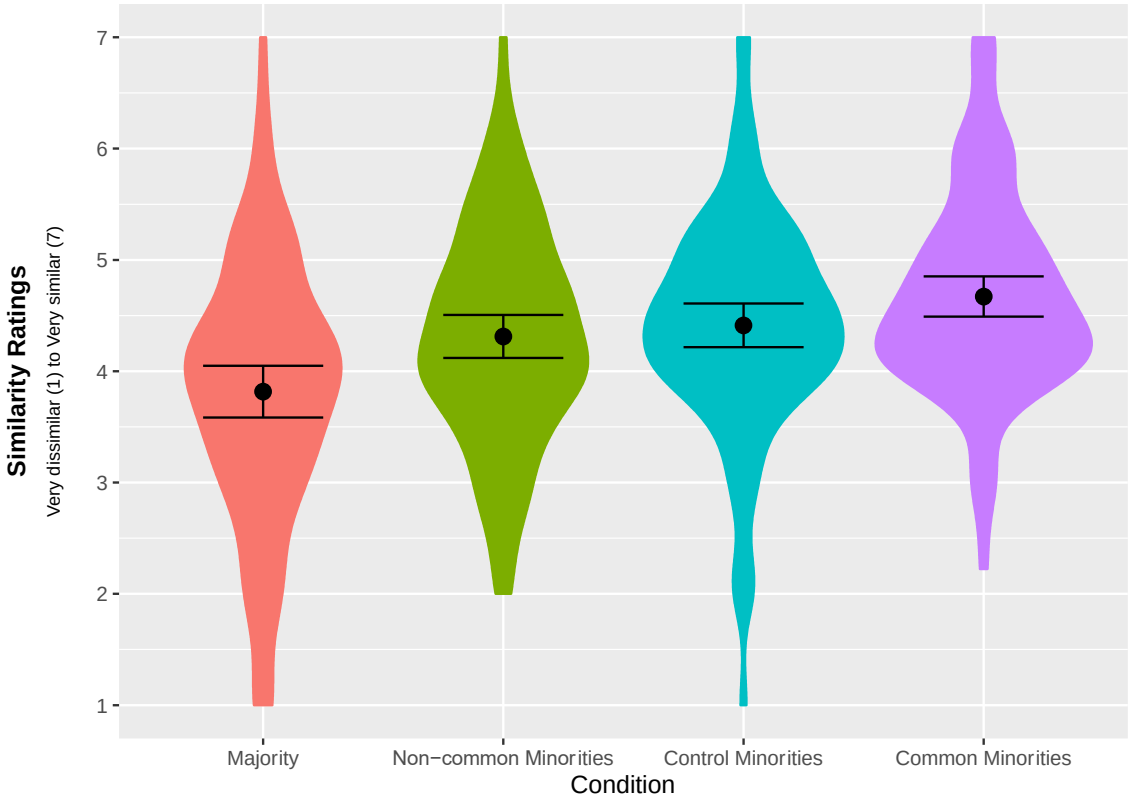
Next, I was interested in testing whether perceived minority similarity might only be associated with feelings of threat (or other potential implications) for people who are politically conservative. Recent research finds that White conservatives exhibit greater threat in response to demographic changes, whereas White liberals exhibit attenuated threat (Brown et al., 2022). In order to explore this possibility, I ran additional regression models testing the interactive effect of similarity ratings (across all three minority conditions) and political orientation on these implication measures. I did not find any evidence of significant interactions for any of these models, suggesting that political orientation likely does not moderate the relationship between perceived minority similarity and feelings of group status threat or beliefs about the changing culture of the U.S.

Finally, as an additional test of the role of political ideology, I ran these models again using political affiliation instead of political orientation as the moderator, as these measures sometimes capture different aspects of people's political beliefs (e.g., Garneau & Schwadel, 2022; Noel, 2016). For these analyses, I restricted the sample to people who identified as Democrats (n=191) and Republicans (n=88). Here, I found a marginal interaction between minority similarity ratings and political affiliation on participants' beliefs about the future status of people of color, $b = 0.24$, $p = .053$. To

decompose this marginal interaction, I calculated the correlation between these variables separately for Democrats and Republicans. Among Democrats, perceptions of minority similarity were not associated with beliefs about the future status of people of color, $r(141) = -.04$, $p = .61$. Among Republicans, however, perceptions of minority similarity were moderately associated with beliefs about the future status of people of color, $r(64) = .26$, $p = .034$. I also found a significant interaction regarding participants' estimates of the current number of people of color in Congress, $b = 18.85$, $p = .038$. Among Democrats, perceptions of minority similarity were not significantly associated with estimates of the current number of people of color in Congress, $r(141) = .12$, $p = .14$. Among Republicans, perceptions of minority similarity were moderately associated with estimates of the current number of people of color in Congress, $r(64) = .36$, $p = .003$. These findings provide some evidence that perceptions of minority similarity may have implications for beliefs about the present and future status of people of color in the U.S. among Republicans; however, interactions for the other measures were not significant.

Figure 9

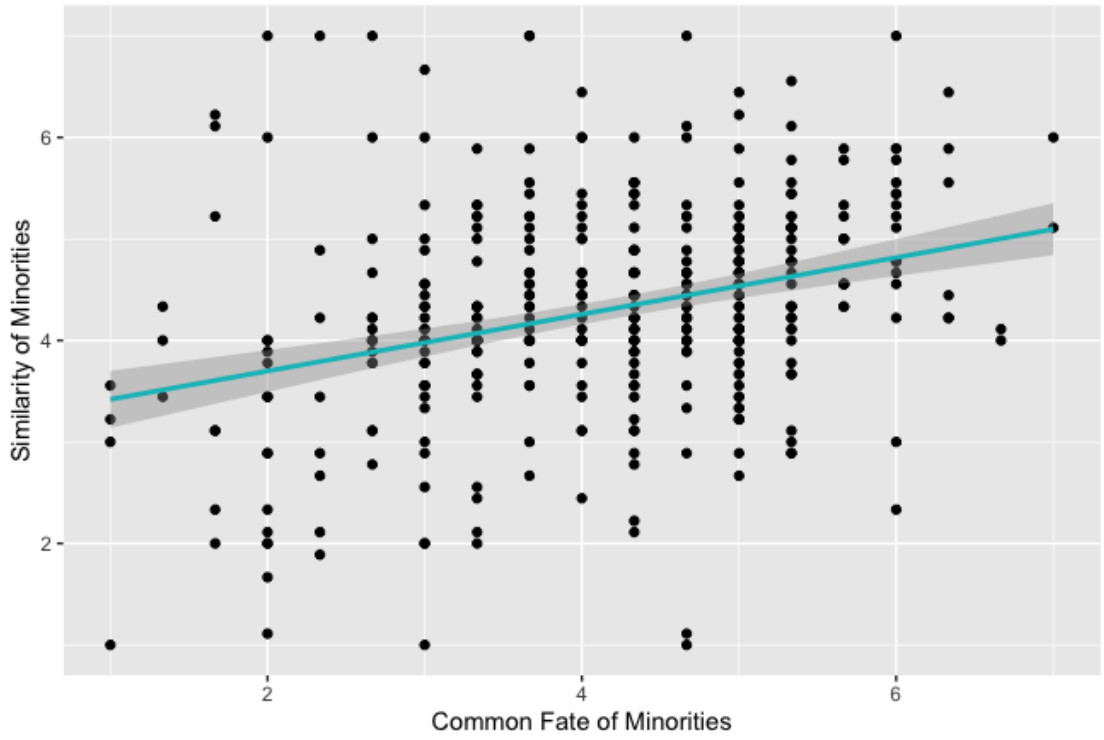
Similarity ratings based on condition



Note: This figure shows the average similarity ratings of White people (majority condition) and people of color (non-common minorities, control minorities, and common minorities conditions). Perceptions of minority similarity were marginally greater in the common minorities condition compared to the non-common minorities condition. Perceptions of minority similarity in all three minority conditions were significantly greater than perceptions of majority similarity.

Figure 10

Belief in the common fate of minorities and perceptions of the similarity of minorities



Note: This plot shows the correlation between belief in the common fate of minorities and perceptions of the similarity of minorities. The dots represent individual data points and the line represents the regression line for the relationship between these variables, with the shaded region showing a 95% confidence interval around the estimates.

Study 11

To further understand the role of beliefs in common fate, I ran a study aimed at comparing perceptions of *pairs* of minority groups to perceptions of an entire set of minority groups. I hypothesized that majority group participants would be less likely to believe that pairs of minority groups share a common fate, as individuating the groups in this way might draw attention to their differences. For example, when considering Asian Americans and Native Americans, White Americans might be more likely to think about ways in which these groups differ from each other in terms of their histories, but when considering people of color as a whole, they might be more likely to think about these groups in terms of abstract similarities.

Method

Participants. Three hundred participants (141 women, 149 men, 6 non-binary people, 4 other gender; mean age = 37.89) were recruited from Prolific. Participation was restricted to individuals who identified as White and were U.S. residents.

Procedure. The procedure for Study 11 was nearly identical to Study 2 (assessing White participants' perceptions of the similarity of people of color vs. White people), except for the addition of third condition. In this condition, rather than rating the similarity across all groups of people of color, participants rated the similarity of one pair of groups (e.g., Asian Americans and Native Americans, Black Americans and Hispanic/Latino Americans), with pairings randomized between participants. Participants rated the similarity of members of their assigned groups using the following instructions. The bold text in the minority conditions was added to ensure that participants would not simply rate the similarity of two minority group

members from the same group (e.g., two Hispanic Americans) compared to the intended instructions of rating members both within and *across* groups.

Majority condition:

> *In this set of questions, you will be asked to rate how similar White people are to one another. As you make these ratings, consider the likely similarity of two randomly selected White people. Please note that you will be asked to rate your impression of how similar members of this group are to each other on average, recognizing that members of all groups can be very different from one another.*

All minorities condition:

> *In this set of questions, you will be asked to rate how similar people of color in the U.S. are to one another (that is, how similar people who are Black, Native American, Asian American, Pacific Islander, Hispanic/Latino American, and Multiracial are to each other –* ***how similar they are, on average, to other members of their own group and to members of the other groups****). As you make these ratings, consider the likely similarity of two randomly selected people of color. Please note that you will be asked to rate your impression of how similar members of these groups are to each other on average, recognizing that members of all groups can be very different from one another.*

Paired minorities condition:

> *In this set of questions, you will be asked to rate how similar [Black Americans and Hispanic/Latino Americans / Black Americans and Asian*

Americans / Black Americans and Native Americans / Hispanic/Latino Americans and Asian Americans / Hispanic/Latino Americans and Native Americans / Asian Americans and Native Americans] are to one another – ***how similar they are, on average, to other members of their own group and to members of the other group****. As you make these ratings, consider the likely similarity of two randomly selected people from either of these groups. Please note that you will be asked to rate your impression of how similar members of these groups are to each other on average, recognizing that members of all groups can be very different from one another.*

Participants then responded to the three-item measure of belief in the common fate of minority groups from Study 10 (e.g., "People of color generally share a common history"). Finally, before responding to demographic questions, participants answered an open-ended question to better understand how they were judging the similarity of different groups:

As you were answering questions about the similarity of individuals from these groups, how were you making these judgments? More specifically, please briefly describe any specific people, groups, or concepts that came to mind when you were thinking about how similar members of these groups are in general.

I hypothesized that White participants would rate people of color as less similar when rating a pair of groups vs. all groups, and that participants would also rate people of color as sharing less of a common fate in the paired condition. I also

planned to use the open-ended responses to assess other potential mechanisms underlying the minority-groups homogeneity effect.

Results

Primary Analyses

First, I ran a one-way ANOVA to assess differences between conditions on the manipulation check (i.e., ratings of the common fate of the minority groups). Ratings of the common fate of minorities did not differ based on condition, $F(2, 297) = 1.26$, $p = .29$. Next, I ran a one-way ANOVA to assess differences in similarity ratings between the three conditions. I found a significant main effect of condition, $F(2, 297) = 20.50$, $p < .001$, $\eta_p^2 = 0.121$. Pairwise comparisons revealed that all minority groups ($M = 4.41$, $SD = 1.04$) *and* paired minority groups ($M = 4.46$, $SD = 0.87$) were rated as more similar than the majority group ($M = 3.66$, $SD = 1.03$), ts > 5.34, ps < .001. Furthermore, participants' belief in the common fate of the minority groups was positively correlated with their ratings of the similarity of minority groups, both in the paired minority groups condition, $r(101) = 0.30$, $p = .002$, and in the all minority groups condition, $r(101) = 0.31$, $p = .002$.

Contrary to hypotheses, people did not rate minorities as less similar when considering a pair of minorities compared to all minorities (see Figure 11). Because the manipulation check measured beliefs in the common fate of all minority groups, rather than the common fate of the groups participants rated, I cannot ascertain whether participants believed that the pairs of minority groups shared a common fate to the same degree as all of the minority groups. Thus, rather than necessarily providing evidence in support for or against the common fate mechanism, this study

provides additional evidence of the breadth of the minority-groups homogeneity effect, as it applies even to ratings of the similarity of two minority groups vs. one majority group.

Open-Ended Response Analysis

In this study, participants answered an open-ended question asking them how they made their judgments about the similarity of the groups they read about. I recruited three independent coders who were unaware of the hypotheses and provided them with detailed instructions for scoring participants' responses. I asked them to code each response along two dimensions—how much the response reflected thinking about *individuals* and thinking about *groups*—using the following instructions and a rating scale from 1 (not at all) to 4 (very much):

1. On a scale from 1-4, how much does this comment reflect thinking about **specific individuals** (e.g., the comment refers to a single person or suggests that the person was thinking about an individual or a few individuals whom they know, or the comment refers to personal experience)?
2. On a scale from 1-4, how much does this comment reflect thinking about **broad groups or categories** in society (e.g., the comment refers to experiences of entire groups or to stereotypes about groups)?

I selected these questions because I was interested in whether people bring different concepts to mind when considering the similarity of either the majority group or the minority groups. I expected that when thinking about minority groups, people might be more likely to recall group-level traits or stereotypes, whereas when thinking

about the majority group, people might be more likely to recall specific individuals. This is because people may have greater exposure to different members of the majority group, either through personal experience or media exposure. I hypothesized that the responses of participants in both minority conditions (pairs of minorities and all minorities) would be more likely to reflect thinking about groups and less likely to reflect thinking about individuals in their responses, relative to participants in the majority condition.

The three independent coders were given a randomly selected sample of 15 responses to score and then met as a group to resolve any major rating disagreements. Following this process, I revised the instructions to improve clarity and provided the coders with the full sample of responses to score. Reliability between the three coders (calculated using intra-class correlations type 3, for the mean of a fixed set of raters; Shrout & Fleiss, 1979) was reasonably high, both for ratings of references to individuals (intra-class correlation = 0.89) and groups (intra-class correlation = 0.85), so I averaged the coders' ratings to create a composite for each construct. I created a difference score for the data from each participant by subtracting one (average) rating from the other, resulting in an outcome measure representing the extent to which participants referenced individuals *over* groups. I also present analyses separately for the measure of references to individuals and references to groups.

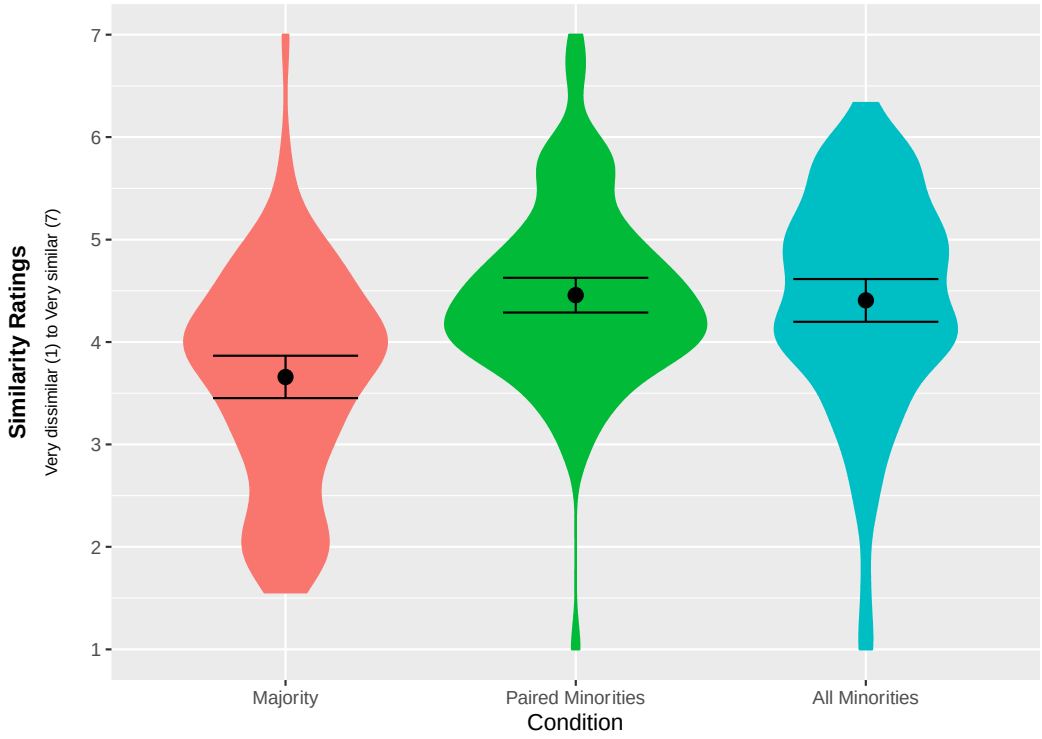
Using the difference score measure, I conducted an ANOVA comparing differences between conditions. There was a significant effect of condition, $F(2, 290) = 4.21$, $p = .016$, $\eta_p^2 = 0.028$, such that participants in the majority group condition were more likely to reference individuals over groups ($M = 0.30$, $SD = 1.90$) compared

to those in the minority groups condition (M = -0.50, SD = 1.77), t(290) = 2.90, p = .01. There were no differences between the paired groups condition (M = -0.07, SD = 2.02) and the minority groups condition, t(290) = 1.59, p = .25, nor between the paired groups condition and the majority group condition, t(290) = -1.33, p = .38.

I also conducted ANOVAs comparing differences between conditions separately for individual and group ratings. Regarding references to individuals, there was no significant effect of condition, F(2, 290) = 2.26, p = .11. Regarding references to groups, however, there was a significant effect of condition, F(2, 290) = 4.85, p = .009. Comments from participants reflected significantly more thinking about *groups* in the minority groups condition (M = 2.63, SD = 0.98) compared to the majority group condition (M = 2.17, SD = 1.09), t(290) = 3.01, p = .008, and marginally more thinking about *groups* in the paired groups condition (M = 2.50, SD = 1.09) compared to the majority group condition, t(290) = 2.21, p = .07. This means that, regarding the key comparison between the minority groups and majority group conditions, participants were more likely to bring to mind group-level traits and stereotypes when rating the similarity of minority group members vs. when rating the similarity of majority group members. This tendency to think about more abstract features of groups may lead people to focus on commonalities between the experiences of members of these groups (as opposed to focusing on differences between individuals within groups), resulting in higher judgments of similarity.

Figure 11

Similarity ratings based on condition



Note: This figure shows the average similarity ratings for White people (majority condition), randomly selected pairs of minority groups (paired minorities condition), and people of color (all minorities condition). Perceptions of minority similarity (for both minority conditions) were significantly greater than perceptions of majority similarity. Perceptions of minority similarity did not differ between the two minority conditions.

Study 12

In Study 12, I explored another possible mechanism underlying the minority-groups homogeneity effect. As described earlier, perceptions of minority similarity might be driven by a sense that certain traits are more narrowly distributed among minority groups, or that minority groups have a narrower range on these traits, compared to the majority group. For example, when it comes to political ideology, people may assume that majority group members represent the full range of the political spectrum (e.g., from far left to far right) but that minority group members represent a narrower range of this spectrum (e.g., from far left to moderate). This may be due to stereotypes about different groups (i.e., stereotyping minority group members as more likely to lean left politically) or due to a tendency to assume that numerically smaller groups inherently have smaller ranges (which may indeed be true). If people believe that minority groups represent smaller ranges or narrower distributions, then perhaps they apply this same thinking even when considering *multiple* minority groups, thus failing to consider that the union of these ranges may be larger than any single range. In this study, I test this mechanism by asking participants to create distributions of different traits for a majority group (heterosexual people), one minority group (gay men), or multiple minority groups (LGBTQ people).

Method

Participants. Three hundred participants (148 women, 151 men, 1 did not respond; mean age = 40.01) were recruited from Prolific. Participation was restricted to individuals who identified as cisgender and heterosexual and were U.S. residents.

Procedure. Participants were randomly assigned to one of three conditions, which involved creating trait distributions for heterosexual people (majority condition), gay men (single minority condition), or LGBTQ people (minorities condition), inspired by a similar paradigm from previous research (Nisbett & Kunda, 1985). Participants read the following instructions:

> *In this study, we would like to learn more about how people think traits are distributed within a social group. For the purpose of this study, please consider a random sample of 100 people in the U.S. who identify as* ***[heterosexual (i.e., straight) / gay men / LGBTQ (e.g., lesbian, gay, bisexual, transgender, queer)]****. We will ask you to consider how people from this group vary on three different traits.*
>
> *Please note that we are just interested in learning about people's perceptions of these* ***distributions****, so we will not be interpreting your answers as positive or negative evaluations of this group of people.*

Following this description, participants were asked to create distributions for their assigned group on three different traits: introversion/extraversion, closedness/openness to experience, and valuing individuality/conformity. These traits were selected because they represented similar constructs to those I had included in previous measures of similarity, and because they were relatively neutral traits, reducing the likelihood of socially desirable responding. Participants read definitions and examples for each trait to maximize clarity. Participants created these distributions by estimating how many people out of this group of 100 randomly selected individuals they would expect to fall into each category, with the categories constituting a 7-point

scale for each trait (e.g., very introverted, moderately introverted, somewhat introverted, neither introverted nor extraverted, somewhat extraverted, moderately extraverted, and very extraverted). After creating distributions for each of the three traits, participants then completed the standard 9-item similarity measure used in previous studies for their assigned group (majority, single minority, or minorities). I hypothesized that participants would produce narrower distributions (i.e., distributions with lower variability, as measured by the standard deviation and interquartile range) in both the single minority and minorities conditions, relative to participants in the majority condition. I also hypothesized that the variability of their distributions would be correlated with their similarity ratings, such that perceptions of lower trait variability would be associated with higher similarity ratings.

Results

To analyze these data, I constructed distributions for each participant based on the numbers that they entered for each category (i.e., scale point) of each trait. I analyzed the three traits separately, as I expected that they would have unique distributions. For each participant, I calculated the standard deviation and interquartile range (IQR) of their distributions for each trait. I ran ANOVAs comparing the standard deviations and IQRs between conditions for each trait to assess whether these values were lower for the minorities and single minority conditions than for the majority condition (see Figure 12).

For the introversion/extraversion trait, there was no effect of condition on participants' standard deviations, $F(1, 297) = 0.71$, $p = .49$, or IQRs, $F(1, 297) = 0.72$, $p = .49$. For the closedness/openness to experience trait, there was also no effect of

condition on participants' standard deviations, $F(1, 297) = 1.76$, $p = .17$, but there was a marginal difference for the IQRs, $F(1, 297) = 2.45$, $p = .09$, with participants in the single minority condition producing distributions with marginally lower IQRs ($M = 2.27$, $SD = 1.05$) than those in the majority condition ($M = 2.58$, $SD = 1.02$), $t(297) = -2.07$, $p = .10$. For the valuing individuality/conformity trait, there was a significant effect of condition on participants' standard deviations, $F(1, 297) = 5.53$, $p = .004$, $\eta_p^2 = 0.036$, with participants creating distributions with lower standard deviations for LGBTQ people ($M = 1.54$, $SD = 0.62$) than for straight people ($M = 1.79$, $SD = 0.39$), $t(297) = -3.29$, $p = .003$, and marginally lower standard deviations for gay people ($M = 1.63$, $SD = 0.57$) than for straight people, $t(297) = -2.11$, $p = .09$, whereas the standard deviations for LGBTQ people and gay people did not differ significantly, $t(297) = 1.19$, $p = .46$. Similar patterns were observed using the IQR as the outcome measure, $F(1, 297) = 3.92$, $p = .021$, $\eta_p^2 = 0.026$, with participants creating distributions with lower IQRs for LGBTQ people ($M = 2.27$, $SD = 1.22$) than for straight people ($M = 2.73$, $SD = 1.22$), $t(297) = -2.66$, $p = .022$, and marginally lower IQRs for gay people ($M = 2.37$, $SD = 1.21$) than for straight people, $t(297) = -2.10$, $p = .09$, but again, the IQRs for LGBTQ people and gay people did not differ significantly, $t(297) = 0.56$, $p = .84$. These results suggest that, contrary to the hypothesis, people do not necessarily construct distributions with lower variability for minorities than for the majority. However, for the trait of valuing individuality, participants did indeed produce less variable distributions for LGBTQ people, perhaps because this trait, more so than the other two traits, is more likely to be stereotypically associated with LGBTQ people.

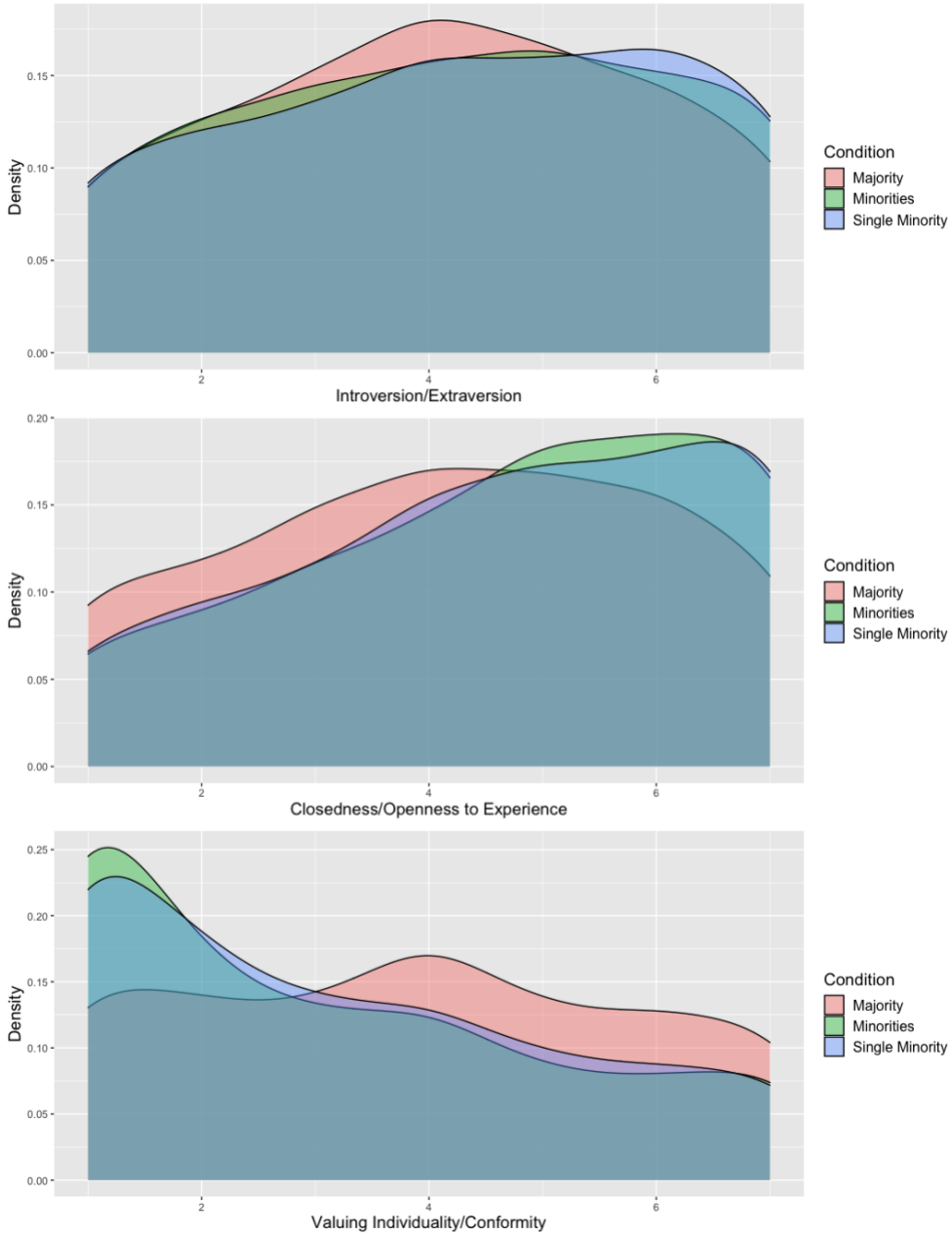
Thus, the tendency to assume narrower variability on stereotypical group traits may contribute in part to the perception of minority groups as more homogeneous.

Next, I analyzed participants' similarity ratings to assess their associations with the variability of participants' distributions. Overall, there was a small association between these values for the traits of closedness/openness and valuing individuality/conformity, with participants who gave higher similarity ratings creating distributions with lower standard deviations for closedness/openness, $r(298) = -.16$, $p = .005$, and for valuing individuality/conformity, $r(298) = -.17$, $p = .004$. Correlations between the similarity measure and the IQR of the distributions for these traits were slightly smaller and nonsignificant. For the trait of introversion/extraversion, there was no significant association between the similarity measure and the standard deviation or IQR of the distribution, $r(298) = .02$, $p = .69$, and $r(298) = .07$, $p = .22$. Thus, while there is some evidence that people produced narrower distributions for a trait that may be viewed as stereotypical for minority groups, the overall evidence suggests that the minority-groups homogeneity effect is likely not driven by perceptions that most traits are distributed more narrowly among minority groups.

Finally, I compared similarity ratings between conditions and found that, replicating the minority-groups homogeneity effect, participants rated LGBTQ people as more similar to one another ($M = 4.82$, $SD = 0.71$) than straight people are to one another ($M = 4.34$, $SD = 1.02$), $t(297) = 4.10$, $p < .001$, Cohen's $d = 0.55$. Furthermore, replicating the classic outgroup homogeneity effect, participants rated gay people as more similar to one another ($M = 4.66$, $SD = 0.75$) than straight people are to one another, $t(297) = 2.71$, $p = .02$, Cohen's $d = 0.36$.

Figure 12

Trait distributions by condition



Note: This plot shows kernel density estimates of participants' constructed distributions for each trait. Participants created significantly narrower distributions for LGBTQ/gay people vs. straight people only for the third trait (valuing individuality/conformity).

Internal Meta-Analysis

Across several of the studies in this dissertation, I included measures to investigate the potential mechanisms and implications of the minority-groups homogeneity effect. Regarding mechanisms, in four studies (N = 898), I assessed the correlation between a measure of belief in the common fate of the minority groups and the primary measure of the similarity of these same groups. Some of these studies included manipulations of common fate, and for these studies, I calculated the correlation averaging across conditions. I computed a weighted average of the correlations between these two constructs from all four studies, finding an average r = .34, 95% CI [.28, .40], z = 10.56, p < .001. The causal evidence for the role of belief in common fate is mixed—I found evidence in Study 9 (but not in Study 10) that experimentally increasing or decreasing the common fate of minorities influenced participants' similarity ratings—but the correlational evidence shows a consistent, medium-sized association between belief in common fate and ratings of minority similarity, suggesting that common fate may play a role in driving perceptions of similarity.

Regarding implications, in four studies (N = 597), I included a measure assessing White participants' feelings that U.S. racial and ethnic minorities would gain status in the near future (i.e., status threat). I calculated the correlation between ratings of minority similarity (using the umbrella minority conditions in Studies 1 and 2 and all three minority conditions in Study 10) and feelings of status threat for each of these studies. I computed a weighted average of the correlations between these two constructs, finding an average r = .13, 95% CI [.05, .21], z = 3.06, p = .002. This

average effect size suggests that there is a small association between perceptions of minority similarity among White participants and feelings of status threat regarding the future of the U.S, meaning that the tendency to view members of minority groups as similar may contribute to some White Americans' fears of losing status as U.S. demographics change.

CHAPTER FIVE

DISCUSSION

In this dissertation, I presented evidence of a novel phenomenon which I have called the minority-groups homogeneity effect: people rate minority group members as more similar to one another than majority group members. Across 13 studies, I found that members of majority groups and some minority groups show this pattern of perception. Furthermore, participants who had greater belief in the common fate of minorities rated them as more similar, and experimentally increasing participants' belief in the common fate of minorities led to greater perceptions of minority similarity in one study. Regarding other potential mechanisms, when rating the similarity of minority groups, participants were more likely to mention group-level traits and stereotypes, suggesting that they are bringing different features to mind when considering the similarity of minority groups vs. the majority group. Participants also constructed a narrower trait distribution for minority groups than the majority group on a trait for which there may be stronger minority group stereotypes, suggesting that higher similarity ratings may be driven in part by perceptions of lower variability for minority groups on stereotypical traits. Finally, I demonstrated that White participants' perceptions of minority similarity are positively correlated to a modest degree with their feelings that minorities will soon gain status, especially among Republican participants, but I find little evidence of other implications for this effect. In this chapter, I discuss what this body of evidence might imply about social cognition and intergroup relations and what questions remain to be explored in future research.

What Exactly is the Minority-Groups Homogeneity Effect and How Far Does it Reach?

The studies I have described illustrate a robust minority-groups homogeneity effect. However, there are contexts beyond those tested in these studies in which this effect may or may not emerge. Additional studies of the boundary conditions of this effect will help to shed light on why it emerges in the first place. Notably, I tested this effect in the context of people's perceptions of minority groups that are not only the smaller groups in society, but that also generally share experiences or histories of marginalization. Thus, as is often true in the real world, the paradigms in these studies conflate group size and group status. Might the minority-groups homogeneity effect also apply to situations in which minority groups are high-status (e.g., in South Africa, in which the minority White population has historically had the highest status and the most power) or in which minority groups have different statuses (e.g., in China, in which the 55 recognized ethnic minority groups likely have unique experiences in society)? The evidence from Study 9 suggests that minority groups are seen as less similar to one another when they are presented as coming from different rungs of the status hierarchy, but even under these conditions, the minority groups are still seen as more homogeneous than the majority. This suggests that the effect may persist regardless of the status of the minority groups, but additional tests within diverse cultural contexts would further clarify its generalizability.

In all of these studies, I tested the effect along a single dimension of social identity (e.g., race, nationality, sexual orientation). This design was employed to represent how people often think about groups in the real world, with racial minorities,

sexual minorities, and other types of minorities each representing distinct categories. Might this effect also extend to perceptions of minority groups *across* different dimensions of identity (e.g., asking participants to consider the similarity of Asian Americans, bisexual people, and Muslim people)? Considering the mechanisms that likely underlie the basic effect, I suspect that members of minority groups along different identity dimensions would only be rated as similar to the extent that they are also perceived as sharing a common fate or as sharing similar stereotypical traits. Thus, the effect should be more likely to emerge when people rate groups along the same identity dimension than along different identity dimensions.

On the other hand, it may be the case that this effect is a broader feature of human cognition, such that even groups from different identity dimensions (e.g., one racial minority group, one sexual minority group, and one religious minority group) are seen as more similar. Beyond perceptions of social groups, people might even exhibit a minority-groups homogeneity effect when rating *non-human groups* (e.g., animals or objects). To illustrate this, consider the following example: Globally, about 90% of cars on the road run on internal combustion engines, whereas a smaller number of cars use alternative fuels like electricity, ethanol, hydrogen, and natural gas. How similar are cars with internal combustion engines vs. cars using alternative fuels? In the context of these so-called "majority" and "minority" groups, one could imagine that participants might believe that the 90% of cars with internal combustion engines are fairly different from one another, perhaps in terms of size, appearance, or fuel efficiency, given that this category of cars is so large and varied relative to the smaller number of cars that run on alternative fuels. In future studies, I plan to use a paradigm

like this to establish whether the minority-groups homogeneity effect applies to perceptions of non-human groups. If so, this might point to a more basic cognitive mechanism underlying how people perceive categories based on their size. I expect to find evidence of this effect at least in some non-social contexts, given that the mechanisms I have studied so far may also apply to these situations: 1) people might expect there to be more variability in larger categories, 2) people might call to mind individual exemplars when considering larger categories, and 3) people might view smaller categories, even in non-human groups, as sharing a common fate (e.g., alternative fuel cars were designed with the common aim of reducing negative environmental impacts).

Limitations and Future Directions

The ideas above all describe opportunities for future directions that will clarify the nature of the minority-groups homogeneity effect. Here, I discuss possible limitations of the studies I have presented and some additional opportunities for future research in this area.

First, these studies relied on convenience samples from the online data collection platform Prolific and only included participants from the U.S. and the U.K. Thus, the results cannot be generalized to other cultural contexts, especially those in which the categories of majority and minority may have different connotations. Even though I found evidence of a minority-groups homogeneity effect in a fictional paradigm, which suggests that the effect may be generalizable, it could also be the case that the U.S.-based participants in that study were simply applying their experience with racial and ethnic categories to this novel context. I expect that

participants in contexts in which minority groups are *not* seen as sharing a common fate may not show this effect to the same degree, which would suggest that the minority-groups homogeneity effect only generalizes to contexts with similar ways of categorizing people into social groups. On the other hand, if the minority-groups homogeneity effect does indeed emerge in some of the scenarios described above (e.g., among minorities along different dimensions of identity or among non-human groups), then this would make it even more likely that the effect might also emerge in other cultures and social contexts.

Second, in order to understand majority group members' responses to changing demographics, I asked participants across studies to think about either the majority group or the minority groups. By nature, this method reinforces a dominant perspective in the U.S. of placing a boundary between the majority vs. the minorities and grouping all minorities together. In reality, members of minority groups can have vastly different experiences from one another and different degrees of solidarity or kinship with members of other minority groups. For example, in Study 6, when I asked participants who were members of different racial and ethnic minority groups to consider the similarity of people of color or White people, they may have identified to varying degrees with the label "people of color" or may have had varied reactions to being asked to consider the similarity of this superordinate group. In reality, there is likely to be heterogeneity in how members of different minority groups think about their status and their relationships to other minority groups, including the extent to which they feel solidarity or connection with other marginalized groups. Understanding how members of these groups think about their similarity with other

groups is likely to enhance the study of intergroup relations, responses to social inequality, and engagement in collective action.

Finally, the methods used across these studies are generally the same, with participants rating the similarity of members of different groups on a standard set of traits. To fully assess the robustness of this effect, it would be worthwhile to measure similarity in a number of different ways. For example, might the effect emerge on a different set of traits? Might it emerge on less explicit measures of perceived similarity? Might the framing of the question (i.e., "how similar are these groups?") encourage people to think more about similarities, relative to asking about how *different* they are or how much *variability* there is? Indeed, when participants were asked to construct trait distributions, the variability of these distributions was not strongly correlated with their similarity ratings, suggesting that people may indeed think about similarity and variability in different ways. The studies presented here also use between-subjects ratings, with participants considering the similarity of either the minority groups or the majority group. In the only study that used a within-subjects approach, I found that the order in which participants provided ratings significantly affected those ratings. This suggests that individuals may not consciously consider minority groups to be more homogeneous than the majority; however, the consistent group-level effects across studies suggest that people think about these categories in meaningfully different ways, even if they would not necessarily report the same feelings when asked to compare groups directly.

Implications for Intergroup Relations

Initially, I expected that the perception that minority groups are similar to one another might underlie majority group members' concerns about changing demographics: when minority groups are perceived as more similar, their projected population growth is likely to be seen as more threatening, as the minority groups will be able to work together toward their shared political goals. However, the accumulated evidence does not seem to support this hypothesis. Across these studies, I find little evidence for the hypothesized implications of perceived minority groups homogeneity, aside from a small correlation between perceptions of minority similarity and feelings of group status threat among White participants. What, then, are the potential consequences of perceiving minority groups as similar? In other words, why does this effect matter?

From the perspective of majority group members, it may be the case that perceiving minority groups as similar is indeed linked to negative intergroup attitudes that have not yet been measured in these studies. It seems plausible that people who think minority groups are more similar to one another might also hold greater zero-sum beliefs (i.e., believing that resource gains for minority members will result in losses for majority members). People who view minority groups as more similar may also be less likely to recognize the distinct disparities that affect different minority groups, leading them to be less supportive of social policies that address unique needs of different groups (e.g., reparations for Black American descendants of slavery) relative to policies that might help all minority group members or even all people in general (e.g., universal basic income). However, another unexplored possibility is that perceptions of minority homogeneity may be related to *recognition* of social inequality

and, thus, to *positive* attitudes toward minority group members and toward policies that reduce inequality. Majority group members who recognize that there are persistent inequalities that affect minority group members may be more likely to believe in the common fate of these groups, leading them to view minority groups as more similar overall. Indeed, it may be the case that perceived minority homogeneity can be interpreted differently for different people, leading some people to feel negatively and other people to feel positively about minority group members and about social change. The evidence from Study 10 lends some support to this idea, as the similarity of minority groups was associated with the perceived status of those groups among Republicans, but not among Democrats.

The interpretation and implications of the minority-groups homogeneity effect among minority group members may follow similar patterns. I have proposed that minority group members who share a sense of common fate with other minority groups are more likely to view these groups as similar to one another. It seems likely that minority group members who view minority groups as more similar may be more likely to feel positively toward other minority group members and to demonstrate solidarity in response to their marginalization. Thus, it may be fruitful to explore whether perceived minority-groups homogeneity among minority group members is associated with greater engagement in collective action or greater support for policies that reduce social inequalities affecting any of these groups. As above with majority group members, it may also be the case that minority group members who perceive greater similarity among minority groups are more likely to endorse zero-sum beliefs regarding their relationship with the majority group (i.e., as the majority group

continues to gain resources, minority groups will lose resources). Continuing to explore the potential consequences of the minority-groups homogeneity effect will help illuminate how people think about and interact with members of other groups based on their status as majorities or minorities.

Conclusion

People's perceptions of different social groups are complex, emerging from their interactions with members of different groups and from their knowledge about the status and size of different groups. In this dissertation, I documented a phenomenon representing one component of these perceptions: how people view groups based on their categorization as members of the majority group or of the minority groups. Overall, people tend to view members of minority groups as more similar to one another than members of the majority are to one another. This robust effect emerges among various groups of people and in the contexts of several different identity dimensions (race/ethnicity, sexual orientation, and nationality). The tendency to view minorities as more homogeneous than the majority may contribute to a deeper understanding of intergroup dynamics, including perceptions of intergroup inequalities, reactions to changing demographics, and support for equity-enhancing policies.

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