

# Climate change and intergroup relations: Psychological insights, synergies, and future prospects

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## Abstract

Climate change is often conceived as a technical challenge, requiring smart policies and science-driven solutions. Yet, as revealed by each new round of international negotiations, and by growing (rather than receding) partisan divides on climate change in the United States, climate change is also profoundly social: How people understand and engage with the issue is powerfully influenced by the responses of others, including members of ingroups and outgroups. This special issue brings together research and theory that shed light on new and understudied group and intergroup dimensions of climate change. The featured articles showcase the breadth of social psychological processes (e.g., social identity and categorization processes, intergroup perceptions, normative influence, justice concerns, and group-based ideologies) relevant to the study of climate change while highlighting how the problem's shared, global relevance poses unique questions and opportunities for the field. We explore the contributions of these articles to the social psychological study of climate change and highlight new challenges and pathways forward.

## Keywords

climate change, culture, identity, inequality, intergroup relations, prejudice, social influence, sustainability

Rising global temperatures, changing precipitation patterns, climbing sea levels and more extreme weather events will intensify the challenges of global instability, hunger, poverty and conflict.

Former U.S. Defense Secretary Chuck Hagel, 2014 Conference of Defense Ministers of the Americas, Arequipa, Peru.

change, mandated every 4 years by the Global Change Research Act of 1990 (S. Rep. No. 169, 1990). The report, synthesizing findings from over 1,500 scientific studies and peer-reviewed by the National Academy of Sciences, concludes that the evidence for rapid, human-caused global

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On November 3rd, 2017, the United States government released its most comprehensive scientific report to date on the science of climate

warming has never been clearer. Carbon dioxide is currently being produced by human activities at twice the rate at which it's being removed from the atmosphere by natural processes. As a result, the current period is now the warmest on record in the history of modern civilization. Since 1900, global sea level has risen by 17–20 cm and is projected to reach 0.3–1.2 m (1–4 ft), and as much as 2.4 m (8 ft), by 2100. Globally, heat waves and heavy rainfall have increased in frequency and intensity, and extreme storms, drought, wild fires, and tidal flooding are increasingly common in many parts of the world (United States Global Change Research Program [USGCRP], 2017).

These changes are already having potentially irreversible effects on the planet's ecosystems and human systems, from reduced access to clean water and the increased spread of global infectious disease, to lost labor and reduced agricultural productivity in many of the world's poorest regions (Watts et al., 2017). Climate change is also expected to indirectly increase intergroup conflict by exacerbating well-documented drivers of conflict, including poverty, economic shocks, and displacement, and through reduced regional and global food security (Intergovernmental Panel on Climate Change [IPCC], 2014b). At the same time, climate change has never been more politically polarized within nations, such as the US, that have contributed substantially to its effects, and public interest in climate change has wavered over the past decade in many countries (see Brulle, Carmichael, & Jenkins, 2012; Dunlap, McCright, & Yarosh, 2016). Moreover, despite substantial scientific and media attention accorded to the issue, within the US, grassroots public mobilization has remained remarkably limited compared to other social movements (McAdam, 2017).

This special issue of *Group Processes & Intergroup Relations* on “Climate Change and Intergroup Relations” brings together a diverse set of articles that examine the complex social psychological forces shaping contemporary responses to climate change. Together, these articles, and the special issue more generally, aim to spark new and renewed thinking and debate

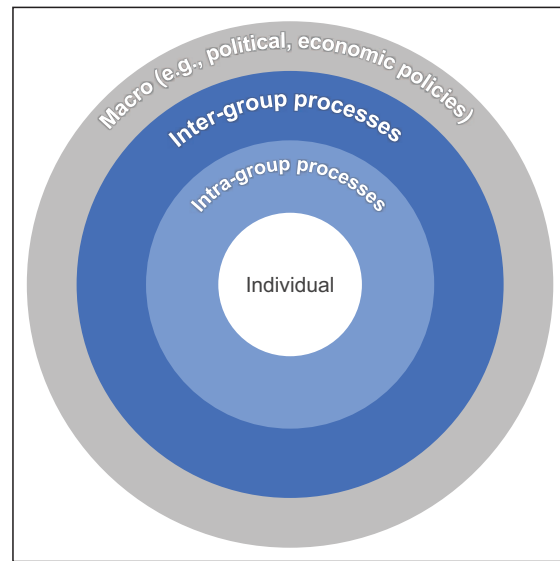
about how social psychologists, and particularly those who study group processes and intergroup relations, can contribute to current understandings of climate change as a human social issue.

As *The Washington Post* columnist David Fahrenthold (2009) noted, to a psychologist, climate change looks as if it was designed to be ignored: it is a large, slow-moving, and mostly invisible problem, affecting communities across generations and around the globe (see Pearson, Schuldt, & Romero-Canyas, 2016). Over two decades of psychological scholarship has revealed the myriad ways in which the complexity and uncertainty inherent in understanding the causes, manifestations, and consequences of climate change can hinder actions to address the issue. For instance, many people in industrialized nations view climate change as a distant threat in both time and space (Leiserowitz, 2005; Spence, Poortinga, & Pidgeon, 2012). Moreover, long time lags between human activities that increase greenhouse gas emissions and their observable consequences obscure patterns of cause and effect, which can further impede collective action (Weber, 2013). Like few issues, however, climate change also uniquely implicates human social relationships—and potential for conflict—at every level of social organization, from neighborhoods to nations, spanning national and generational boundaries. As each new round of international negotiations illustrates, how people perceive and respond to the issue of climate change is powerfully influenced by how *others*, including members of ingroups and outgroups, respond to the problem—processes that intergroup relations researchers are uniquely positioned to study.

These processes have direct implications for developing effective and informed social policies to help communities and nations mitigate climate change and adapt to its effects. For instance, the well-documented political divide on climate change within the US and in some European nations (Dunlap et al., 2016) presents a formidable challenge for organizations and policy-makers who are looking to mobilize public support for efforts to address climate change. Beyond the US,

demographic changes are projected for Europe and Australasia with the arrival of humanitarian entrants and skilled migrants, with migration set to increase as a result of climate change and its impacts in the coming decades (Piguet, Pécoud, & de Guchteneire, 2011; United Nations Department of Economic and Social Affairs, 2016). Although climate change is a global threat, its impacts are not evenly distributed, but instead fall disproportionately on the world's poor and politically disenfranchised (e.g., Miranda, Hastings, Aldy, & Schlesinger, 2011; Wilson, Richard, Joseph, & Williams, 2010). Effects of climate change on global inequality may further exacerbate and compound climate disparities as poorer countries struggle to adapt to its effects (M. Burke, Hsiang, & Miguel, 2015b). Moreover, climate change threatens individuals and groups, as well as the economic and political systems on which they depend, which can evoke psychological responses to buffer against threats to important values and belief systems (Hennes, Ruisch, Feygina, Monteiro, & Jost, 2016). Understanding social psychological factors that influence climate-related decision-making is, thus, not only important for addressing group-based inequities produced by climate change, but also for understanding the factors that foster consensus and cooperation among diverse groups as they respond to this shared threat.

The articles in this special issue examine social psychological causes and consequences of climate change, with a particular focus on research that presents fresh insights and emerging theoretical approaches. Beyond seeking to understand how group dynamics influence how people process and respond to climate change, several of the articles highlight ways in which the study of climate change can inform the study of intergroup relations. These synergistic influences represent an exciting new development in this important and understudied problem within the field. In what follows, we briefly trace the influence of psychological perspectives on the study of climate change, and consider the role of group processes and intergroup relations in this development.



**Figure 1.** Climate change as a multilevel social phenomenon. Psychological processes span individual, interpersonal, intragroup, intergroup, and macrosocietal levels. To date, the role of group-level processes (shown in blue) has received relatively limited theoretical and empirical attention within psychology and is the focus of this special issue. *Note.* Reprinted from Pearson et al. (2016).

## Social Psychology and Climate Change: A Brief History

Climate change can be understood as a multilevel problem, with individual, group-level, and macro-level structural (e.g., political and economic) influences (see Figure 1). As such, social and behavioral science perspectives on climate change are uniquely interdisciplinary in scope. In 1990, the International Social Science Council of the United Nations Educational, Scientific, and Cultural Organization established the Human Dimensions Programme to bring together researchers across disciplines to better understand the human social dimensions of environmental problems. This program has since evolved, most recently in 2015, into Future Earth, a 10-year global research initiative that aims to coordinate and promote dialogue and collaboration between the social and natural sciences to inform policy that incorporates the human dimensions of climate change and speeds transitions to sustainability (see International Social

Science Council [ISSC] & United Nations Educational, Scientific and Cultural Organization [UNESCO], 2013; and [futureearth.org/history](http://futureearth.org/history)).

Existing psychological approaches to climate change have been heavily informed by cognitive and decision science research, investigating how individuals assess risk, process complexity and uncertainty, respond to incentives, and perceive temporal and spatial dimensions of environmental threats (for reviews, see Gifford, 2011; Stern, 2011). Perspectives from risk analysis (e.g., Weber, 2013), for instance, identify how physical characteristics of climate change, uncertainty in its causes and effects, and information-processing limitations can impede decision-making. Other approaches highlight the power of personalized information (e.g., feedback about energy use; Fischer, 2008), intrinsic and extrinsic incentives (e.g., Stern, 2011), and low-cost actions (e.g., weatherizing homes; Dietz, Gardner, Gilligan, Stern, & Vandenberg, 2009) that promote energy efficiency and other environmentally responsible actions, and the dynamics of climate change public opinion (e.g., Leiserowitz, Maibach, Roser-Renouf, & Smith, 2011).

Whereas the role of individual-level affective and cognitive processes is well documented, psychological processes at the group and intergroup levels have only recently begun to receive comparable theoretical and empirical attention (see Fielding, Hornsey, & Swim, 2014). In general, social psychological research on climate change has lagged that of other social science disciplines, with much of the empirical research emerging since 2010 (Fielding et al., 2014; Pearson et al., 2016). This is surprising, given that the climate crisis is often portrayed as a quintessential “commons” problem, caused by the collective actions of individuals and groups motivated by short-term gain (e.g., fossil fuel consumption) that can lead to long-term collective harm (Ostrom, Dietz, Dolsak, Stern, & Weber, 2002). Moreover, when it comes to formulating policy, most decision-making occurs on behalf of others, including both ingroups and outgroups; thus, the study of groups is central to understanding factors that

shape public support for climate policies and their implementation.

The articles featured in this special issue complement research on individual-level biases by highlighting a second class of *group-level* psychological processes—reflecting both within- and between-group influences on climate-related cognitions, motivations, and behaviors—that may be no less formidable in shaping human responses to climate change. Broadly, the articles in this special issue can be divided into two categories: research conceptualizing intra- and intergroup processes as social psychological *antecedents* of climate-related attitudes, beliefs, and adaptation and mitigation responses (e.g., policy preferences); and research examining social psychological *consequences* of climate change (e.g., group conformity, intergroup conflict).<sup>1</sup> Although likely reciprocal in their relations, we review each of these approaches separately.

## Social Psychological Antecedents and Mediating Mechanisms

A burgeoning empirical literature has begun to document social psychological processes that contribute to climate change and its mitigation by undermining and enhancing individual and collective actions to mitigate or adapt to its effects. This research suggests that people’s beliefs and experiences, including their perception of group members’ beliefs, form an important basis for how they perceive social and political issues (Wood & Vedlitz, 2007). In the context of climate change, the most extensively studied of these processes are partisan and ideological influences and the effects of group norms.

Within the last two decades, party identification has become a strong predictor of climate attitudes and beliefs in the US, with Democrats and liberals expressing greater belief in human-caused climate change and more support for mitigation policies, relative to Republicans and conservatives (Dunlap et al., 2016; McCright & Dunlap, 2011). In their recent synthesis of 171 studies examining climate change beliefs across

56 nations, Hornsey, Harris, Bain, and Fielding (2016) found that values, ideologies, and political orientation overpowered many intuitively appealing predictors such as education and experience of extreme weather events. More strikingly, they found that climate change beliefs were relatively weak predictors of people's reported willingness to act, individually or collectively, in climate-friendly ways. Additional research has highlighted important moderators of the association between political orientation and climate change beliefs. For instance, in a nationally representative sample of U.S. adults, Schuldt and Pearson (2016) found that political ideology and party identification were weaker predictors of the beliefs of racial and ethnic minority groups as compared to Whites. Education has also been shown to be an important moderator of issue polarization. For instance, Ehret, Sparks, and Sherman (2017) found that higher levels of education predicted greater attention to elite political cues (e.g., partisan media, political candidate speeches), which was associated with *stronger* adherence to partisan positions on climate change (see also Hamilton, 2011).

Additional research suggests that belief in the scientific consensus on climate change may be a "gateway" belief that shapes personal beliefs and support for mitigation policies across the political divide. In survey experiments, individuals who were informed of the strong scientific consensus on anthropogenic climate change were more likely to report believing that the phenomenon is real, human caused, serious, and solvable—beliefs that, in turn, predicted greater support for public action (van der Linden, Leiserowitz, Feinberg, & Maibach, 2015). In this special issue, Bolsen and Druckman (XXXX) extend this influential work by examining the conditions under which scientific consensus messaging affects the public's beliefs about climate change. In a nationally representative survey experiment of U.S. adults, they found that positive effects of consensus messaging were no longer observed when these messages included cues suggesting that climate science is politicized. Moreover, including a

preemptive warning intended to inoculate the public against false claims about politicization did not restore the scientific consensus effect. Additional analyses by political party revealed party-contingent effects—for example, exposure to scientific consensus information did not increase existence beliefs of high-knowledge Republicans, and politicization cues did not reduce the positive effect of consensus information on existence beliefs of high-knowledge Democrats. Overall, these findings complement and extend van der Linden et al.'s (2015) gateway belief model by revealing important ways in which the content of scientific consensus messaging can interact with partisanship to influence beliefs and policy preferences among the general public.

Like partisanship, normative influence has received considerable attention in the area of environmental decision-making, with research suggesting that norms function as powerful levers for enhancing cooperation in resource dilemmas (for reviews, see Cialdini, 2003; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). In one field experiment, making energy-conscious choices observable by others (a nonfinancial reputational incentive) was more effective at increasing participation in an energy blackout prevention program in California than a \$25.00 monetary incentive, leading to over 4 times the level of compliance compared to the financial incentive (Yoeli, Hoffman, Rand, & Nowak, 2013). Two articles in this special issue extend current understanding of normative influence in environment-related contexts.

Lalot, Falomir-Pichastor, and Quiamzade (XXXX) report the results of three studies exploring the interaction between past environmental behavior and descriptive norms (perceived numerical support for proenvironmental values) on proenvironmental behavioral intentions. Prior research suggests that knowledge of one's past proenvironmental actions can lead to inconsistent effects, in some cases increasing and other cases paradoxically decreasing the probability that one behaves similarly in the future. Lalot



and colleagues identify a key moderator of the link between past and future behavior, specifically, perceived numerical support (i.e., the proportion of a relevant ingroup that is perceived to support a given value). Drawing from the social identity and minority influence literatures (e.g., Moscovici, 1980) suggesting that numerical minorities elicit closer attention to and greater elaboration of minority views, Lalot and colleagues hypothesized that people would be more motivated to show consistent (vs. inconsistent) behavior when they perceived that a minority (vs. majority) supports their past behavior. Majority support, in contrast, was expected to lead people to reflect on whether their past behavior satisfies the majority norm, leading to relaxed conformity to the norm (behavioral inconsistency) when individuals perceive this to be the case.

Consistent with this reasoning, across three studies in which past behavior salience and numerical support were both manipulated and measured, participants who indicated lower levels of past proenvironmental behavior were more likely to agree to a new proenvironmental request when they believed that a majority (vs. minority) supported environmental protections. In contrast, those who previously engaged in environmentally friendly behavior were more likely to agree when they believed that a *minority* (vs. majority) supported environmental protection. This pattern held across three different dependent variables: endorsement of a proenvironmental collective action (a “green” Christmas; Study 1), willingness to participate in a proenvironmental event (a “zero power day”; Studies 2 and 3), and willingness to sign a proenvironmental petition (Study 3). These findings suggest that perceiving oneself as belonging to a minority can have important energizing effects by increasing commitment to the minority position, raising intriguing questions about what happens when people perceive proenvironmental positions as shifting from the minority to majority viewpoint. The potential for paradoxical effects of reduced proenvironmental commitment under these circumstances highlights a need for additional

studies unpacking boundary conditions and causal mechanisms of these effects.

Compared to traditional (offline) interactive contexts, we know little about how normative influence processes affect coordination within online social networks. Social media offers unique opportunities for coordinating conservation and sustainability efforts at scale (Dickinson, Crain, Reeve, & Schuldt, 2013). In this special issue, Song, Schuldt, McLeod, Crain, and Dickinson (XXXX) report on a field experiment conducted with members of a real-world conservation network that examined how the violation of a single strongly held norm can influence judgments of group members’ commitment to sustainability. Specifically, participants were members of a citizen science network in which users share virtual “maps” of their property that display sustainable practices, with a particular focus on depicting and promoting bird-friendly habitat. Participants who observed a fellow user violating a strong community norm—having an outdoor pet cat, which collectively kill millions of birds within the US annually—judged them as less likely to pursue various sustainable behaviors in the future, despite evidence that the target user was already engaged in meeting sustainability goals (e.g., by installing solar panels and reducing pesticide usage). Consistent with prior research on outgroup polarization, these effects were moderated by participants’ group membership, such that non-cat-owners judged the (cat-owning) norm violator more harshly.

Salient ingroup identities can promote positive intergroup relations when people perceive ingroup norms as inclusive and accepting of outgroup members (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Song et al. (XXXX) show that this may be a challenge for online networks, in which limited information may make apparent counternormative behavior particularly salient. Future research might explore the conditions under which groups may be more versus less susceptible to these influences and whether they generalize beyond habitat conservation to other

important environmental contexts (e.g., energy conservation).

Stereotypes can also exacerbate social and political conflicts and remain another underexplored source of social influence within the context of climate change. Swim and Geiger (XXXX) examined gender stereotypes related to six distinct climate change opinion groups known as the Six Americas, representing opinions ranging from those who are dismissive to those who are alarmed about climate change (Maibach, Leiserowitz, Roser-Renouf, & Mertz, 2011). Previous work suggests that groups perceived to care about the environment are ascribed feminine traits while those perceived as less caring are ascribed masculine traits, and that groups that voice stronger opinions are ascribed negative traits because they are perceived to be socially deviant (e.g., Bashir, Lockwood, Chasteen, Nadolny, & Hoyes, 2013). Swim and Geiger (XXXX) extend this work to examine masculine and feminine traits (both positively and negatively valenced) ascribed to climate change opinion groups in the US and also whether these trait ascriptions varied by one's own opinions about climate change (e.g., by reflecting outgroup derogation or ingroup favoritism).

Participants across all levels of personal concern showed evidence of outgroup derogation: more dissimilarity in opinions was associated with more negative trait ratings, generally; only those who expressed the most concern about climate change (the alarmed) exhibited ingroup favoritism, rating groups with dissimilar opinions more negatively and less positively than groups with similar opinions. Consistent with prior work, they also found that groups with stronger opinions on both ends of the spectrum were ascribed more negative than positive traits, compared to those with more moderate opinions. Additionally, Swim and Geiger also found evidence of gendered trait ascriptions: Whereas the dismissives were seen as having negative masculine traits (e.g., *aggressive*), impressions of the alarmed were ambivalent, reflecting both positive masculine (e.g., *courageous*) and negative feminine (e.g., *complaining*) traits. Consistent with the stereotype

content model (e.g., Fiske, Cuddy, Glick, & Xu, 2002), these findings suggest that whereas the alarmed may be respected, but not liked, weaker ascriptions of positive masculine traits to the cautious and concerned suggest that these groups may be liked, but not respected, which may have differing implications for how people interact with these groups, and their characterization and treatment in public discourse.

Interestingly, Swim and Geiger (XXXX) also uncover an asymmetry in the biases expressed by the two most extreme opinion groups: Whereas the alarmed ascribed more negative traits than positive traits to both moderate and more extreme skeptics (the disengaged, doubtful, and dismissive), dismissives ascribed greater negativity only to the alarmed, but not the moderate opinion groups (the cautious and concerned). These findings suggest that moderate opinion groups may operate more effectively as “opinion brokers” than those with stronger concerns (the alarmed) when it comes to broaching conversations and building policy and action consensus. Future research might explore this possibility, as well as the behavioral and policy implications of these perceptions.

## Social Psychological Consequences of Climate Change

Compared to research on the social psychological antecedents and mediating mechanisms shaping climate change engagement, considerably less theoretical and empirical attention has been paid to the social psychological *consequences* of climate change (e.g., effects of perceived climate threats on intergroup relations). Research from economics and political science points to three major societal-level impacts of climate change—on migration, conflict, and inequality—each with well-documented consequences for intergroup relations.

A comprehensive analysis involving a cross-national collaboration of over 350 social scientists suggests climate change will result in widespread displacement, with most migration occurring

within nations. Most strikingly, migration will take people *towards* areas of high risk (primarily toward low-lying megacities) as much as away from them, with current estimates indicating between 114 and 192 million additional people living in urban floodplains in Africa and Asia by 2060 (Government Office for Science [UK], 2011). This displacement is expected to have widespread geopolitical ramifications, exacerbating intergroup conflict within and between nations.

Climate change is also expected to increase interpersonal and intergroup conflict in many regions of the world. Using historical data from 55 studies exploiting natural variations in climate to allow for the estimation of causal effects, M. Burke, Hsiang, and Miguel (2015a) found that deviations from moderate temperatures and precipitation systematically increase conflict risk, with each one standard deviation increase in temperature increasing interpersonal conflict (assaults and murders) by 2.4% and intergroup conflict (riots and war) by 11.3%. These authors note that all inhabited locations are projected to warm by at least two standard deviations, with the largest increases exceeding four standard deviations, in tropical regions.

Climate change is projected to amplify economic inequality as well, by exerting disproportionate effects on the economies of warmer, poorer nations located closer to the equator. For instance, rising temperature and humidity are expected to increase the risk of heat stress due to physical activity in many parts of the world, but most substantially in equatorial regions. Estimates suggest average incomes in the poorest 40% of countries will decline by 75% by 2100, while the richest 20% of nations in higher, cooler latitudes may see slight gains in GDP (M. Burke et al., 2015b). The risks of climate change are also unequally distributed within nations. In the US, for instance, climate risks are expected to cause a large transfer of wealth northward and westward, with the poorest third of counties projected to experience economic losses up to 20% of county income under business-as-usual emissions scenarios that will further increase economic inequality between wealthier northern and poorer southern states (Hsiang et al., 2017).

Racial and ethnic disparities in projected climate impacts are similarly well-documented. For instance, a 2012 study of the impacts of climate change on different populations across California found that four factors—lacking a high school diploma, being of low income, not speaking English, and being a person of color—were the strongest predictors of vulnerability to climate change; each was a stronger factor than being elderly, pregnant, or unemployed (Cooley, Moore, Heberger, & Allen, 2012).

These societal-level impacts have clear social psychological implications. Cross-national and within-nation data (US) suggest that structural inequality and violence—two projected social consequences of climate change—predict preferences for group dominance (higher social dominance orientation). This heightened preference for group dominance, in turn, promotes hierarchy-enhancing ideologies and behaviors (e.g., persecution of immigrants, benevolent and hostile sexism, opposition to welfare, and blatant racism) that further exacerbate inequities between groups (see Kunst, Fischer, Sidanius, & Thomsen, 2017).

In their CLASH (CLimate, Aggression, and Self-control in Humans) model, Van Lange, Rinderu, and Bushman (2017) offer a novel social psychological theory of the effects of climate systems (e.g., temperature change) on culture and human conflict. In their article for this special issue, Van Lange, Rinderu, and Bushman (XXXX) extend this model to consider its implications for intergroup relations. As these authors note, despite a historical emphasis on the role of context in driving social behavior, few social psychological theories of intergroup relations have considered large-scale geophysical environmental factors as a determinant of cultural orientations and social behavior.

The CLASH model's two main propositions—that lower temperatures and greater seasonal variation in temperatures promote future orientation and self-control, and that future orientation and self-control reduce conflict and aggression—suggest potentially important consequences for intergroup conflict over the coming decades and a need for intergroup relations research that explicitly incorporates the role of



climate. Van Lange and colleagues (XXXX) review evidence of the ways in which climate shapes aggression and violence, and the implications of this for important intergroup topics, including relative wealth, inequality, and political relations. Although empirical support for the model is still emerging, it makes a number of testable predictions (e.g., that climate change may predict changes in ingroup favoritism geographically, within and between nations) that can guide future scholarship. More critically, the CLASH model highlights a need for social psychologists to consider often-neglected broader (e.g., regional and global) environmental influences on human culture and their implications for understanding intergroup dynamics, and offers a novel blueprint for doing so.

Understanding how people think about justice and fairness in the context of these large-scale societal shifts will be pivotal. Climate change implicates issues of justice and fairness on a scale like few other societal issues. As previously noted, although climate change is a global threat, its impacts are not evenly distributed, but instead fall disproportionately on the poor (Wilson et al., 2010), with inequality expected to rise as poorer communities and nations struggle to adapt to these economic shocks (M. Burke et al., 2015b). Moreover, major contributors to climate change are disproportionately wealthier, industrialized nations that are projected to suffer fewer impacts. For instance, annual per capita carbon emissions in India in 2013 were 1.9 tons, compared to 7 tons in Europe and 16.4 tons in the United States (Friedlingstein et al., 2014). The impact of these emissions extends well beyond contemporary human populations to harm to future generations and to other species.

Swim and Bloodhart (XXXX) introduce a novel framework to understand psychological barriers to perceiving and responding to climate change as a social justice issue (i.e., *minimization* of climate injustices). In particular, they identify social psychological processes and conditions under which people will perceive injustice and inequities in climate change impacts and act to address these inequities (e.g., by working on behalf of vulnerable populations, species, and ecosystems).

Specifically, in their “ask–answer–announce” framework, adapted from research and theory on reactions to discrimination (e.g., Sechrist & Swim, 2008), Swim and Bloodhart (XXXX) describe three types of minimization that can occur. First, a failure to *ask* about the harm or unequal causes and impacts of climate change suggests a narrow conceptualization, limited attention, or motivated responding (partisan responses, avoidance of threatening information) may be guiding responses. Second, a failure to *answer*, or rejection of these frames, suggests individuals may be misinformed, uncertain, or otherwise motivated to respond in a way that minimizes the consideration of these inequities. Third, failing to *announce* (e.g., share opinions with others) or *act* on one’s conclusions about climate change (e.g., changing individual or collective behavior) suggests an additional set of social psychological barriers, such as self-presentation concerns, insufficient knowledge, uncertainty about others’ beliefs (including scientists), low motivation, or stereotypes about activist groups may be operating. Swim and Bloodhart argue that a lack of psychological connection to vulnerable groups can facilitate minimization of social injustices at all three of these stages, and review a variety of cognitive and motivational factors that can lead to such minimization. Additionally, they highlight key points of overlap between psychological tendencies to minimize social injustice and to minimize the geophysical and social impacts of climate change, thereby offering a critical synthesis and application of two major domains of research within the psychological study of groups—prejudice and discrimination, and social justice—to the study of climate change.

Additional psychological research suggests that the threat of climate change can prompt defensive responses, such as resistance to regulations that challenge the status quo, which can be counterproductive to addressing the issue (Feygina, Jost, & Goldsmith, 2010). Two articles in the current issue explore another such response to threatening climate change: ethnocentrism.

Previous research has suggested that salient climate change threats may heighten authoritarianism and a tendency to derogate deviant groups

(e.g., drug dealers) who threaten the established system and increase approval for groups (e.g., judges) who support it (Fritsche, Cohrs, Kessler, & Bauer, 2012). Barth, Masson, Fritsche, and Ziemer (XXXX) extend this research by examining, more specifically, whether salient climate threats may strengthen associations with salient ingroups and promote group-protective tendencies, as people attempt to reduce uncertainty and reestablish a sense of control.

Offering evidence for this possibility, the authors find that experimentally induced threat from climate change increased authoritarian attitudes and led to harsher evaluations of ingroup members who deviated from positive group norms. Importantly, similar findings emerge when the group norms are manipulated rather than measured, such that informing their student participants that a majority (vs. minority) of their peers support a radical form of protest led to greater acceptance of that behavior and derogation of deviant members—but only when a climate change threat was made salient. That these participants showed conformity with leftist norms when a radical norm was perceived suggests that, rather than a general “conservative shift” or more authoritarian response, salient climate threats may promote conformity toward situationally salient ingroup norms. As the authors discuss, future work is needed to trace the implications of these effects on group solidarity, including the conditions under which these group-protective cognitions may breed intergroup conflict, and whether appeals to certain social identities may be effectively leveraged to spur collective action under conditions of threat.

In related work taking a cross-cultural approach, Uhl, Klackl, Hansen, and Jonas (XXXX) investigated two potentially differing reactions to being exposed to threatening information about climate change: direct efforts to deal with the problem (assessed via proenvironmental behavioral intentions) or symbolic defensive responses in the form of increased ethnocentrism (see B. L. Burke, Martens, & Faucher, 2010). In addition, they explored whether ingroup affirmation (i.e., making an ingroup’s positive characteristics salient;

Sherman, Kinias, Major, Kim, & Prenovost, 2007) could serve as a potential buffer against symbolic responses to threatening climate change information, particularly in a collectivistic (vs. individualistic) culture, where people may be more attuned to ingroup threats. The researchers tested these hypotheses in samples from two countries—one with a more individualistic cultural orientation (Austria) and one with a more collectivistic cultural orientation (Argentina)—after pilot testing to identify climate threats and measures that were equally relevant in both cultural contexts.

Participants from both nations showed a tendency to respond with higher levels of ethnocentrism after exposure to a threatening (vs. nonthreatening) message about climate change and showed reduced proenvironmental behavioral intentions in response to the threatening information (although these effects reached significance only in the Austrian sample). Moreover, the ingroup affirmation intervention failed to mitigate the effect of threatening information on ethnocentrism. Although evidence for shared cross-cultural responses to the threat of climate change and the potential utility of ingroup affirmation as an intervention remain to be established, collectively, these findings, together with those of Barth et al. (XXXX), suggest that people may respond to threatening climate change information in ways that may hinder intergroup relations and impede collective efforts to address the problem.

## Looking Forward

Despite representing one of the most critical global challenges today, climate change remains remarkably understudied by social psychologists. A recent analysis of over 9,000 articles published between 2005 and 2014 in seven high-impact psychology outlets, including major social psychology journals (e.g., *Journal of Personality and Social Psychology*), revealed that only 1.1% of articles mentioned “climate change” or “global warming,” even anecdotally (Pearson et al., 2016). Nevertheless, interest in social psychological approaches to climate change is growing rapidly. From the growth of

government “nudge units” aimed at reducing energy consumption and speeding adoption of clean energy and energy-efficient technologies, to the rise of citizen science groups focused on mobilizing communities to take climate-mitigating actions, behavioral science is being used in ways not previously anticipated.

The research in this special issue offers a glimpse of the diverse and complex ways in which group dynamics—including both partisan and nonpartisan factors—can shape individual and collective responses to climate change. But perhaps more importantly, these articles raise as many valuable questions as they provide answers, and expose key gaps in current understanding. Many influential areas of research not directly addressed in the present set of articles, such as psychological research on intergroup contact (Dovidio, Love, Schellhaas, & Hewstone, 2017), immigration (Esses, Hamilton, & Gaucher, 2017), collective action (van Zomeren & Louis, 2017), system justification (Hennes et al., 2016), social dominance (Kunst et al., 2017; Milfont & Sibley, 2014), social categorization (Meleady & Crisp, 2017), acculturation (Sam & Berry, 2010), intergroup reconciliation (Shnabel & Nadler, 2015), and many others, can offer critical perspectives on how diverse societies collectively respond to global social and environmental change. We hope these and other theoretical perspectives in the study of intergroup relations will continue to inform future research in this area.

Contact theory (Allport, 1954; for a review see Hewstone et al., 2014) for instance, is one of the most heavily studied frameworks for reducing intergroup conflict, and has received remarkably little attention in the context of climate change. Research on contact processes may be particularly informative for understanding factors that can help individuals to overcome partisan and other social divides on the issue, both within and between communities. Research on indirect forms of contact, such as extended, vicarious, and imagined contact (see Dovidio, Eller, & Hewstone, 2011), might also inform research on factors that drive public advocacy and action on behalf of vulnerable populations, especially when contact

with such individuals is difficult or impossible (e.g., across geographic and generational boundaries). Imagined contact (see Miles & Crisp, 2014), for instance, is a strategy for reducing prejudice that involves the mental simulation of interactions with outgroup members that has been shown to reduce bias and promote empathy and positive intergroup behavior toward a range of disadvantaged groups, and has been found to be particularly effective among children. Thus, imagined and other forms of indirect contact may be valuable components of educational and other public outreach initiatives that seek to mobilize support for policies that aid communities and nations disproportionately affected by climate change, including future generations.

Intergroup theories of normative influence (e.g., Crandall & Stangor, 2005; Paluck, 2009) may also be particularly useful for understanding how to overcome partisan divides on the issue and mobilize public support for climate change action. These perspectives suggest that to change behavior, targeting normative perceptions, in many cases, may be more fruitful than attempting to change individual attitudes or beliefs. Perceptions of social norms can shift in response to contextual information—such as institutional policies (e.g., a U.S. Supreme Court ruling in favor of same-sex marriage; Tankard & Paluck, 2017) or media portrayals of positive intergroup relations (e.g., a radio soap opera in Rwanda; Paluck, 2009)—and guide behavior, even when individual attitudes or beliefs remain unchanged. In a field experiment in Rwanda, Paluck (2009), for example, showed that exposure to a radio soap opera featuring positive intergroup contact combined with messages promoting constructive intergroup dialogue did not significantly change listeners’ personal beliefs, but did alter their perceptions of normative relations between the groups and influenced both individual and collective behaviors, including greater intergroup cooperation and a willingness to discuss socially sensitive and contentious topics (e.g., community relationships and trauma).

The research discussed here also underscores the need for work that integrates findings across

levels of analysis—research that examines how both individual-level and group-level processes influence how people collectively respond to climate change. For instance, uncertainty about the causes of climate change and its long-term effects is often viewed as a chief barrier to public mobilization and stronger grassroots activism (Barrett & Dannenberg, 2014; Budescu, Broomell, & Por, 2009; Pidgeon & Fischhoff, 2011). However, in some cases, uncertainty can also motivate stronger group engagement, and potentially collective action, among activist groups by leading people to affiliate with groups that are ideologically more extreme (Hogg, 2007). We hope this issue offers a starting point for future work that explores these intersections.

## Conclusion

In organizing this special issue, we had three central goals in mind: (a) to highlight new research that advances current understanding of how group dynamics shape individual and collective responses to climate change, (b) to highlight ways that psychological responses to climate change can shape intergroup relations, and (c) to illustrate ways in which a deeper understanding of the role of group processes can potentially inform climate science communication and public advocacy. Thus, our hope is that this special issue will not only encourage new social psychological scholarship on climate change, but that such scholarship will contribute to both scientific and public discourse on the social dimensions of this shared threat.

This discourse is reflected in two high-profile events of 2015: The publication of Pope Francis's *Encyclical* that focused on the human toll of climate change on the world's poor and the responsibility of all nations to address it, and the landmark Paris Climate Agreement—the first truly global climate effort—that was adopted by 195 participating countries and entered into force on November 4th, 2016. In 2018, and every subsequent 5 years, these parties will take stock of the collective efforts of individual participating nations towards the goals established in Paris. These events underscore

a growing recognition that climate change is a fundamentally social problem—one that implicates religious and political ideologies; ethnic, cultural, and national identities; wealth, power, and social hierarchies—all of which are central to understanding how cooperation and consensus can be achieved. Intergroup relations researchers are uniquely poised to unpack these processes and offer critical insights into the complex social dynamics that underlie what is perhaps the greatest shared threat of our time.

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## Note

1. *Adaptation* addresses immediate or near-term risks and refers to the process of adjustment to the effects of climate change in order to lessen their harm (e.g., developing coastal cities to account for sea level rise) or to exploit potential benefits (e.g., clean energy jobs). *Mitigation* represents a long-term strategy to manage climate change and refers to the process of reducing greenhouse gas emissions or sequestering carbon so as to limit future climate change (IPCC, 2014a).

## References

- Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Barrett, S., & Dannenberg, A. (2014). Sensitivity of collective action to uncertainty about climate tipping points. *Nature Climate Change*, 4, 36–39. doi:10.1038/nclimate2059
- Barth, M., Masson, T., Fritsche, I., & Ziemer, C. T. (XXXX). Closing ranks: Ingroup norm conformity as a subtle response to threatening climate change. *Group Processes & Intergroup Relations*, X, XXX–XXX.
- Bashir, N. Y., Lockwood, P., Chasteen, A. L., Nadolny, D., & Hoyes, I. (2013). The ironic impact of activ-



- ists: Negative stereotypes reduce social change influence. *European Journal of Social Psychology*, *43*, 614–626. doi:10.1002/ejsp.1983
- Bolsen, T., & Druckman, J. N. (XXXX). Do partisanship and politicization undermine the impact of a scientific consensus message about climate change? *Group Processes & Intergroup Relations*, *X*, XXX–XXX.
- Brulle, R. J., Carmichael, J., & Jenkins, J. C. (2012). Shifting public opinion on climate change: An empirical assessment of factors influencing concern over climate change in the US, 2002–2010. *Climatic Change*, *114*, 169–188. doi:10.1007/s10584-012-0403-y
- Budescu, D. V., Broomell, S., & Por, H. H. (2009). Improving communication of uncertainty in the reports of the Intergovernmental Panel on Climate Change. *Psychological Science*, *20*, 299–308. doi:10.1111/j.1467-9280.2009.02284.x
- Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review*, *14*, 155–195. doi:10.1177/1088868309352321
- Burke, M., Hsiang, S. M., & Miguel, E. (2015a). Climate and conflict. *Annual Review of Economics*, *7*, 577–617. doi:10.1146/annurev-economics-080614-115430
- Burke, M., Hsiang, S. M., & Miguel, E. (2015b). Global non-linear effect of temperature on economic production. *Nature*, *527*, 235–239. doi:10.1038/nature15725
- Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, *12*, 105–109. doi:10.1111/1467-8721.01242
- Cooley, H., Moore, E., Heberger, M., & Allen, L. (2012). *Social vulnerability to climate change in California* (California Energy Commission and Pacific Institute Report CEC-500-2012-013). Retrieved from <http://pacinst.org/wp-content/uploads/2014/04/social-vulnerability-climate-change-ca.pdf>
- Crandall, C. S., & Stangor, C. (2005). Conformity and prejudice. In J. F. Dovidio, P. Glick & L. A. Rudman (Eds.), *On the nature of prejudice: Fifty years after Allport* (pp. 295–309). Malden, MA: Blackwell.
- Dickinson, J. L., Crain, R. L., Reeve, H. K., & Schuldt, J. P. (2013). Can evolutionary design of social networks make it easier to be “green”? *Trends in Ecology & Evolution*, *28*, 561–569. doi:10.1016/j.tree.2013.05.011
- Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C., & Vandenberg, M. P. (2009). Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. *Proceedings of the National Academy of Sciences*, *106*, 18452–18456. doi:10.1073/pnas.0908738106
- Dovidio, J. F., Eller, A., & Hewstone, M. (2011). Improving intergroup relations through direct, extended and other forms of indirect contact. *Group Processes & Intergroup Relations*, *14*, 147–160. doi:10.1177/1368430210390555
- Dovidio, J. F., Love, A., Schellhaas, F. M., & Hewstone, M. (2017). Reducing intergroup bias through intergroup contact: Twenty years of progress and future directions. *Group Processes & Intergroup Relations*, *20*, 606–620. doi:10.1177/1368430217712052
- Dunlap, R. E., McCright, A. M., & Yarosh, J. H. (2016). The political divide on climate change: Partisan polarization widens in the US. *Environment: Science and Policy for Sustainable Development*, *58*, 4–23. doi:10.1080/00139157.2016.1208995
- Ehret, P. J., Sparks, A. C., & Sherman, D. K. (2017). Support for environmental protection: An integration of ideological-consistency and information-deficit models. *Environmental Politics*, *26*, 253–277. doi:10.1080/09644016.2016.1256960
- Esses, V. M., Hamilton, L. K., & Gaucher, D. (2017). The global refugee crisis: Empirical evidence and policy implications for improving public attitudes and facilitating refugee resettlement. *Social Issues and Policy Review*, *11*, 78–123. doi:10.1111/sipr.12028
- Farenthold, D. A. (2009, December 8). Climate change is latest problem that’s admitted but ignored. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/04/AR2009120403619.html>
- Feygina, I., Jost, J. T., & Goldsmith, R. E. (2010). System justification, the denial of global warming, and the possibility of “system-sanctioned change.” *Personality and Social Psychology Bulletin*, *36*, 326–338. doi:10.1177/0146167209351435
- Fielding, K. S., Hornsey, M. J., & Swim, J. K. (2014). Developing a social psychology of climate change. *European Journal of Social Psychology*, *44*, 413–420. doi:10.1002/ejsp.2058
- Fischer, C. (2008). Feedback on household electricity consumption: A tool for saving energy? *Energy Efficiency*, *1*, 79–104. doi:10.1007/s12053-008-9009-7

- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*, 878–902. doi:10.1037/0022-3514.82.6.878
- Friedlingstein, P., Andrew, R. M., Rogelj, J., Peters, G. P., Canadell, J. G., Knutti, R., . . . Le Quéré, C. (2014). Persistent growth of CO<sub>2</sub> emissions and implications for reaching climate targets. *Nature Geoscience*, *7*, 709–715. doi:10.1038/ngeo2248
- Fritsche, I., Cohrs, J. C., Kessler, T., & Bauer, J. (2012). Global warming is breeding social conflict: The subtle impact of climate change threat on authoritarian tendencies. *Journal of Environmental Psychology*, *32*, 1–10. doi:10.1016/j.jenvp.2011.10.002
- Gifford, R. (2011). The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. *American Psychologist*, *66*, 290–302. doi:10.1037/a0023566
- Government Office for Science (UK). (2011). *Migration and global environmental change: Future challenges and opportunities*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/867migrationscience.pdf>
- Hamilton, L. C. (2011). Education, politics and opinions about climate change evidence for interaction effects. *Climatic Change*, *104*, 231–242. doi:10.1007/s10584-010-9957-8
- Hennes, E. P., Ruisch, B. C., Feygina, I., Monteiro, C. A., & Jost, J. T. (2016). Motivated recall in the service of the economic system: The case of anthropogenic climate change. *Journal of Experimental Psychology: General*, *145*, 755–771. doi:10.1037/xge0000148
- Hewstone, M., Lolliot, S., Swart, H., Myers, E., Voci, A., Al Ramiah, A., & Cairns, E. (2014). Intergroup contact and intergroup conflict. *Peace and Conflict: Journal of Peace Psychology*, *20*, 39–53. doi:10.1037/a0035582
- Hogg, M. A. (2007). Uncertainty-identity theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 39, pp. 69–126). San Diego, CA: Academic Press.
- Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2016). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change*, *6*, 622–626. doi:10.1038/nclimate2943
- Hsiang, S., Kopp, R., Jina, A., Rising, J., Delgado, M., Mohan, S., . . . Larsen, K. (2017). Estimating economic damage from climate change in the United States. *Science*, *356*, 1362–1369. doi:10.1126/science.aal4369
- Intergovernmental Panel on Climate Change (IPCC). (2014a). *Climate change 2014: Mitigation of climate change* (Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change). Retrieved from <http://www.ipcc.ch/report/ar5/wg3/>
- Intergovernmental Panel on Climate Change (IPCC). (2014b). *Climate change 2014: Mitigation of climate change. Summary for policymakers* (Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change). Retrieved from <http://www.ipcc.ch/report/ar5/wg3/>
- Intergovernmental Panel on Climate Change (ISSC) & United Nations Educational, Scientific and Cultural Organization (UNESCO). (2013). *World social science report 2013: Changing global environments*. Retrieved from <http://unesdoc.unesco.org/images/0022/002246/224677e.pdf>
- Kunst, J. R., Fischer, R., Sidanius, J., & Thomsen, L. (2017). Preferences for group dominance track and mediate the effects of macro-level social inequality and violence across societies. *Proceedings of the National Academy of Sciences*, *114*, 5407–5412. doi:10.1073/pnas.1616572114
- Lalot, F., Falomir-Pichastor, J. M., & Quiamzade, A. (XXXX). Compensation and consistency effects in proenvironmental behaviour: The moderating role of majority and minority support for proenvironmental values. *Group Processes & Intergroup Relations*, *X*, XXX–XXX.
- Leiserowitz, A. (2005). American risk perceptions: Is climate change dangerous? *Risk Analysis*, *25*, 1433–1442. doi:10.1111/j.1540-6261.2005.00690.x
- Leiserowitz, A., Maibach, E., Roser-Renouf, C., & Smith, N. (2011). *Global warming's Six Americas in May 2011*. New Haven, CT: Yale Project on Climate Change Communication, Yale University, and George Mason University.
- Maibach, E., Leiserowitz, A., Roser-Renouf, C., & Mertz, C. K. (2011). Identifying like-minded audiences for global warming public engagement campaigns: An audience segmentation analysis and tool development. *PLoS ONE*, *6*, e17571. doi:10.1371/journal.pone.0017571

- McAdam, D. (2017). Social movement theory and the prospects for climate change activism in the United States. *Annual Review of Political Science, 20*, 189–208. doi:10.1146/annurev-polisci-052615-025801
- McCright, A. M., & Dunlap, R. E. (2011). The politicization of climate change and polarization in the American public's views of global warming, 2001–2010. *The Sociological Quarterly, 52*, 155–194. doi:10.1111/j.1533-8525.2011.01198.x
- Meleady, R., & Crisp, R. J. (2017). Redefining climate change inaction as temporal intergroup bias: Temporally adapted interventions for reducing prejudice may help elicit environmental protection. *Journal of Environmental Psychology, 53*, 206–212. doi:10.1016/j.jenvp.2017.08.005
- Miles, E., & Crisp, R. J. (2014). A meta-analytic test of the imagined contact hypothesis. *Group Processes & Intergroup Relations, 17*, 3–26. doi:10.1177/1368430213510573
- Milfont, T. L., & Sibley, C. G. (2014). The hierarchy enforcement hypothesis of environmental exploitation: A social dominance perspective. *Journal of Experimental Social Psychology, 55*, 188–193. doi:10.1016/j.jesp.2014.07.006
- Miranda, M. L., Hastings, D. A., Aldy, J. E., & Schlesinger, W. H. (2011). The environmental justice dimensions of climate change. *Environmental Justice, 4*, 17–25. doi:10.1089/env.2009.0046
- Moscovici, S. (1980). Toward a theory of conversion behavior. In B. Leonard (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 209–239). San Diego, CA: Academic Press.
- Ostrom, E., Dietz, T., Dolsak, N., Stern, P. C., & Weber, E. U. (Eds.). (2002). *The drama of the commons*. Washington, DC: National Academies Press.
- Paluck, E. L. (2009). Reducing intergroup prejudice and conflict using the media: A field experiment in Rwanda. *Journal of Personality and Social Psychology, 96*, 574–587. doi:10.1037/a0011989
- Pearson, A. R., Schuldt, J. P., & Romero-Canyas, R. (2016). Social climate science: A new vista for psychological science. *Perspectives on Psychological Science, 11*, 632–650. doi:10.1177/1745691616639726
- Pidgeon, N., & Fischhoff, B. (2011). The role of social and decision sciences in communicating uncertain climate risks. *Nature Climate Change, 1*, 35–41. doi:10.1038/nclimate1080
- Piguet, E., Pécoud, A., & de Guchteneire, P. (2011). Migration and climate change: An overview. *Refugee Survey Quarterly, 30*, 1–23. doi:10.1093/rsq/hdr006
- S. Rep. No. 169 (1990). Retrieved from <https://www.congress.gov/bill/101st-congress/senate-bill/169>
- Sam, D. L., & Berry, J. W. (2010). Acculturation: When individuals and groups of different cultural backgrounds meet. *Perspectives on Psychological Science, 5*, 472–481. doi:10.1177/1745691610373075
- Schuldt, J. P., & Pearson, A. R. (2016). The role of race and ethnicity in climate change polarization: Evidence from a US national survey experiment. *Climatic Change, 136*, 495–505. doi:10.1007/s10584-016-1631-3
- Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science, 18*, 429–434. doi:10.1111/j.1467-9280.2007.01917.x
- Sechrist, G. B., & Swim, J. K. (2008). Psychological consequences of failing to attribute negative outcomes to discrimination. *Sex Roles, 59*, 21–38.
- Sherman, D. K., Kinias, Z., Major, B., Kim, H. S., & Prenovost, M. (2007). The group as a resource: Reducing biased attributions for group success and failure via group affirmation. *Personality and Social Psychology Bulletin, 33*, 1100–1112. doi:10.1177/0146167207303027
- Shnabel, N., & Nadler, A. (2015). The role of agency and morality in reconciliation processes: The perspective of the needs-based model. *Current Directions in Psychological Science, 24*, 477–483. doi:10.1177/0963721415601625
- Song, H., Schuldt, J. P., McLeod, P. L., Crain, R. L., & Dickinson, J. L. (XXXX). Group norm violations in an online environmental social network: Effects on impression formation and intergroup judgments. *Group Processes & Intergroup Relations, X*, XXX–XXX.
- Spence, A., Poortinga, W., & Pidgeon, N. (2012). The psychological distance of climate change. *Risk Analysis, 32*, 957–972. doi:10.1111/j.1539-6924.2011.01695.x
- Stern, P. C. (2011). Contributions of psychology to limiting climate change. *American Psychologist, 66*, 303–314. doi:10.1037/a0023235
- Swim, J. K., & Bloodhart, B. (XXXX). The intergroup foundations of climate change justice. *Group Processes & Intergroup Relations, X*, XXX–XXX.

- Swim, J. K., & Geiger, N. (XXXX). The gendered nature of stereotypes about climate change opinion groups. *Group Processes & Intergroup Relations*, X, XXX–XXX.
- Tankard, M. E., & Paluck, E. L. (2017). The effect of a Supreme Court decision regarding gay marriage on social norms and personal attitudes. *Psychological Science*, 28, 1334–1344. doi:10.1177/0956797617709594
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Basil Blackwell.
- Uhl, I., Klackl, J., Hansen, N., & Jonas, E. (XXXX). Undesirable effects of threatening climate change information: A cross-cultural study. *Group Processes & Intergroup Relations*, X, XXX–XXX.
- United Nations Department of Economic and Social Affairs. (2016). *International migration report 2015: Highlights*. Retrieved from [http://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/Migration-Report2015\\_Highlights.pdf](http://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/Migration-Report2015_Highlights.pdf)
- United States Global Change Research Program (USGCRP). (2017). *Climate science: Special report. Vol. 1: Fourth national climate assessment*. Retrieved from [https://science2017.globalchange.gov/downloads/CSSR2017\\_FullReport.pdf](https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf)
- Van der Linden, S. L., Leiserowitz, A. A., Feinberg, G. D., & Maibach, E. W. (2015). The scientific consensus on climate change as a gateway belief: Experimental evidence. *PLoS ONE*, 10, e0118489. doi:10.1371/journal.pone.0118489
- Van Lange, P. A., Rinderu, M. I., & Bushman, B. J. (2017). Aggression and violence around the world: A model of CLimate, Aggression, and Self-control in Humans (CLASH). *Behavioral and Brain Sciences*, 40, 1–58. doi:10.1017/S0140525X16000406
- Van Lange, P. A., Rinderu, M. I., & Bushman, B. J. (XXXX). CLASH: Climate (change) and cultural evolution of intergroup conflict. *Group Processes & Intergroup Relations*, X, XXX–XXX.
- Van Zomeren, M., & Louis, W. R. (2017). Culture meets collective action: Exciting synergies and some lessons to learn for the future. *Group Processes & Intergroup Relations*, 20, 277–284. doi:10.1177/1368430217690238
- Watts, N., Amann, M., Ayeb-Karlsson, S., Belesova, K., Bouley, T., Boykoff, M., . . . Cox, P. M. (2017). The Lancet countdown on health and climate change: From 25 years of inaction to a global transformation for public health. *The Lancet*. doi:10.1016/S0140-6736(17)32464-9
- Weber, E. U. (2013). Doing the right thing willingly: Behavioral decision theory and environmental policy. In E. Shafir (Ed.), *The behavioral foundations of policy* (pp. 380–397). Princeton, NJ: Princeton University Press.
- Wilson, S. M., Richard, R., Joseph, L., & Williams, E. (2010). Climate change, environmental justice, and vulnerability: An exploratory spatial analysis. *Environmental Justice*, 3, 13–19. doi:10.1089/env.2009.0035
- Wood, B. D., & Vedlitz, A. (2007). Issue definition, information processing, and the politics of global warming. *American Journal of Political Science*, 51, 552–568. doi:10.1111/j.1540-5907.2007.00267.x
- Yoeli, E., Hoffman, M., Rand, D. G., & Nowak, M. A. (2013). Powering up with indirect reciprocity in a large-scale field experiment. *Proceedings of the National Academy of Sciences*, 110, 10424–10429. doi:10.1073/pnas.1301210110