ABSTRACT

Title of Dissertation:	EFFECTS OF THREATS TO GROUPS ON INGROUP-PROSOCIAL BEHAVIORS AND ORIENTATIONS
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This research investigates how threats to people's ingroups promote ways of thinking and behaving that benefit these groups (ingroup prosociality). Drawing on terror management theory and other relevant literature, I propose that threats promote ingroup prosociality, and that threats play an important role in explaining why members of collectivistic societies (e.g., Eastern) tend to exhibit more ingroup prosociality than members of individualistic societies (e.g., Western). Three experimental studies isolated effects of threats on outcomes I propose reflect ingroup prosociality: holistic versus analytic types of cognitive and social orientations (Study 1), upholding status orders in groups (Study 2), and promoting the legitimacy of power in groups (Study 3). To experimentally manipulate threat, participants wrote about either a threatening or non-threatening situation. In the group studies (2 and 3), the threat situation was also part of the task itself. Study 1 provides some support for increased ingroup prosociality when threatened, and some evidence for differences by culture and type of threat. Though results generally

suggest that Americans respond more ingroup prosocially than Indians, they do not provide compelling evidence of consistent cross-cultural patterns as predicted. Study 2 provides only minimal support for threat increasing adherence to status orders. Study 3 provides a great deal of support for threat increasing promotion of the legitimacy of power structures, and results suggest especially strong responses among high-status participants with low-status partners. For each study, I also address some results in the opposite direction predicted. Taken together, the results only somewhat support my proposed ingroup prosociality worldview theory. Alternatively, patterns in results suggest that threatened ingroup members may be motivated to preserve their self-esteem and reduce their anxiety. Though this self-serving explanation is consistent with terror management theory, it is not consistent with the ingroup prosociality worldview initially proposed. Overall, the results provide evidence that threat (1) affects both behaviors and orientations (many proposed to reflect ingroup prosociality), which warrant consideration together as defensive responses to threats, and (2) increases promoting the legitimacy of power based on status in some situations. I discuss limitations, implications for theory and potential leadership interventions, and directions for future work.

EFFECTS OF THREATS TO GROUPS ON INGROUP-PROSOCIAL BEHAVIORS AND ORIENTATIONS

by

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2017

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Acknowledgements

I thank…

…my committee members for their valuable suggestions — Jeff Lucas, Paul Hanges, Meredith Kleykamp, Alan Neustadtl, and Rashawn Ray.

…the supportive colleagues I've been so lucky to have.

…my family for always supporting me — Mom, Dad, Laura, Grandma, Pop-pop, and everyone else who has been there along the way, and Nick D'Amore for his companionship and support.

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Chapter 1: Introduction and Theory

This chapter introduces the dissertation research, which aims to develop a theory about the effects of threats to groups on ingroup prosociality, and presents findings from three experiments designed to test the theory.

Introduction

This research investigates how threats to people's ingroups encourage prosociality toward these groups. Drawing on terror management theory and other relevant literature, I propose that threats promote ingroup prosociality, and that threats play an important role in explaining why ingroup prosociality tends to characterize members of collectivistic societies more so than members of individualistic societies. Three experimental studies attempt to isolate threat's effects on outcomes I propose reflect ingroup prosociality: holistic versus analytic cognitive and social orientations (Study 1), status in groups (Study 2), and legitimacy of power in groups (Study 3). The common thread between these studies is the role of threats in promoting ingroup-prosocial orientations and behaviors.

Cross-culturally, I propose that threat is a possible explanation for why collectivistic society members tend to be more ingroup prosocial — such that the more a society is threatened, the more ingroup prosocial its members tend to be. Members of collectivistic societies (e.g., Eastern) tend to think and behave in ways that benefit their social groups more so than members of individualistic societies (e.g., Western). These are ingroup-prosocial orientations and behaviors. While research suggests that threatening

social groups may promote ingroup prosociality, there is no currently known cohesive cross-situational and cross-cultural explanation. I demonstrate why threat and ingroup prosociality are interesting to examine together, and I present research that begins to investigate their relationship.

I aim to: (1) consider threats as a more diverse range of disruptions to groups than previous literature has, (2) bridge sociological and psychological literatures to develop a theory of how threat promotes ingroup-prosocial orientations and behaviors, and (3) assess threat's role in explaining differences in ingroup-prosociality between collectivistic and individualistic societies.

Overall, the results provide evidence that threat (1) affects both behaviors and orientations (many proposed to reflect ingroup prosociality), which warrant consideration together as defensive responses to threats, and (2) increases promoting the legitimacy of power based on status in some situations.

Outline of the Chapters

In Chapter 1, I introduce the dissertation research and draw on terror management theory and other existing literature to inform my theory and explain my predictions. In Chapter 2, I present an overview of the methods, data, and analyses I used for my three studies. Chapter 3 describes in detail the methods, data, and analyses used for Study 1, on how threat affects ingroup prosocial social and cognitive orientations such as holism, and comparing these processes cross-culturally. Chapter 4 presents and discusses results from Study 1. Chapter 5 describes in detail the methods, data, and analyses used for Study 2, on how threat affects status processes in groups. Chapter 6 presents and discusses results

from Study 2. Chapter 7 describes in detail the methods, data, and analyses used for Study 3, on how threat affects legitimacy of power processes in groups, specifically as they relate to status. Chapter 8 presents and discusses results from Study 3. Chapter 9 presents general discussion and conclusions, including limitations of the work and potential directions for future research.

Results Overview

There is some support for more ingroup prosocial orientations under threat, such as increased holism and decreased individualism (Study 1), and there is a great deal of support for increased promotion of legitimate power structures among high-status participants with low-status partners in positions of power (Study 3). However, support for upholding status orders is only minimal (Study 2). Cross-culturally, Americans and Indians (Study 1) tend to respond on different ingroup prosociality outcomes, and Indians become less ingroup prosocial in some ways. The Study 1 results also suggest that Americans may be more responsive to threats, but there is not abundant statistical support for this.

In Study 1, threats do not consistently increase ingroup prosociality, but there are some results in the direction predicted, and some noteworthy differences in responses between Americans and Indians and the two types of threats (natural disaster and terrorism). The initial assumptions about greater sense of threat and more ingroup prosociality among members of collectivistic societies are not clearly supported. Results generally suggest that Americans respond in the ways predicted more so than Indians do. Americans especially respond on holism as locus of attention and Indians especially

respond on measures relating to individualism. Both Americans and Indians respond more so to terrorism than natural disaster. Against the prediction, Indians become less ingroup prosocial for pre-to-post manipulation changes in importance of family and country groups. However, these results do not provide compelling evidence for cross-cultural differences in threat responses or the proposed historical threat explanation.

In Study 2, there is little statistical evidence supporting enhanced adherence to a group's status order under threat. Most of this support is from manipulation check and cohesion questions. Notably, compared to those non-threatened, threatened high-status participants (with low-status partners) express that it is less important to earn as many points as possible. This could be interpreted as a status-consistent attitude. There is also some potential statistical evidence in the opposite direction predicted for some cohesion outcomes.

In Study 3, there is a great deal of support for threat increasing support of legitimate power structures, and the results suggest that high-status participants with low-status partners (less legitimate holders of power) especially react. Some results also suggest general ingroup prosociality and cohesion responses to threat. There is some statistical evidence in the opposite direction predicted for low-status participants with powerful high-status partners. Also notably, low-status group members accepted a higher proportion of offers from their powerful high-status partner when threatened.

Taken together while the results from the three studies somewhat support the main prediction, results in the opposite direction and methodological limitations suggest that further investigation is warranted. Patterns in results also suggest a potential alternative explanation for the results observed, such that individuals seek to preserve

their own self-esteem and lessen anxiety. Anxiety is especially relevant when faced with the possibility of poor personal performance during the group studies. Of significant interest, preserving self-esteem as a means of buffering anxiety when faced with threat is consistent with TMT responses to threatened worldviews (e.g., Greenberg et al. 1997). However, it is not consistent with the specific ingroup prosociality worldview explanation I propose (also in terms of TMT).

Implications Overview

Taken together, the results only somewhat support my proposed ingroup prosociality worldview explanation. Alternatively, the pattern in the results suggests that threatened ingroup members are motivated to preserve their self-esteem and lessen anxiety. In this, they do not necessarily prioritize their ingroup's interests. Though this explanation is not consistent with the ingroup prosociality worldview explanation, it is still consistent with a TMT explanation (e.g., Greenberg et al. 1997). Overall, these results (1) provide some evidence that both ingroup prosocial behaviors and ingroup prosocial orientations increase under threat, and warrant consideration together as instances of defensive responses to threats, and (2) provide strong evidence that threat increases promoting the legitimacy of power based on status in some situations, and perhaps that people especially react when a less legitimate actor is acting selfishly.

This work helps to inform future studies and potential interventions. While there are some results that suggest cultural differences in threat and ingroup prosociality processes, these results are only suggestive and do not provide compelling evidence, so

further investigation is warranted. Of significant interest is further examining the relevance of terror management theory to threat and ingroup prosociality processes. The present results suggest investigating this possibility — if the self-concept is relatively ingroup prosocial, an accompanying result of increasing self-esteem under threat should be increased ingroup prosociality. Future work may also explore different conceptualizations of threats to groups and ingroup prosociality outcomes. These efforts may help to disentangle potential relationships between group processes and terror management framings of these mechanisms, specifically as practical behavioral responses to situations compared to internalizing ingroup prosociality worldviews.

Terrorism is currently a widespread and salient threat, and findings from this research may help to explain responses to attacks and suggest ways to improve mobilization for groups, such as improved leadership strategies. Potentially useful insights from the findings include considering both behaviors and orientations as instances of ingroup prosocial responses to threats, and how threatened high-status individuals are likely to react especially negatively to lower-status actors in positions of power. The findings from Study 3 suggest the critical need for leadership that is perceived as legitimate in threatening situations.

Theory

I explain why I propose that threat increases ingroup prosociality, drawing on terror management theory (TMT), and I explain the specific outcomes I expect to observe when threat is manipulated experimentally.

I define ingroup prosociality as both behaviors and orientations that benefit one's own group.[1] Though Simpson and Willer (2015:44) define prosocial behavior as "an individual behavior that benefits one or more others," my theory specifically addresses ingroups.[2] I refine Simpson and Willer's (2015:44) treatment to specify that a particular ingroup benefits, whether one's family, work group, or nation. The ingroup scope may be implicit in much work that does not specify it, but in the present theory, it is imperative to specify the ingroup scope. The benefits of ingroup prosociality are relative to the groups' needs and interests, and they may not always align with those of other groups or broader society. Examples are terrorist groups such as ISIS, and groups that support categorical inequalities such as sexism and racism, such as white supremacist groups.

I argue in the following sections that certain orientations (such as holism) are instances of ingroup prosociality, along with certain behaviors. Ingroup prosocial orientations I propose considering include holism versus analysm (e.g., Choi, Koo, and Choi 2007), interdependence (Singelis 1994), and group-orientedness (Lucas and Schooler 2012, unpublished, based on Schooler 1990). I address my predictions about ingroup prosocial orientations in more detail below. While much research has framed ingroup prosociality behaviorally (e.g., Van Lange 1999, Rodríguez et al. 2006), there is limited if any literature describing these types of orientations as instances of ingroup prosociality. For example, Moskalenko, McCauley, and Rozin (2006) frame increased identification with country following the 9/11 terrorist attacks as increased ingroup cohesion. Cohesion is an important concept to consider in terms of the present theory, and I discuss cohesion in more detail below.

[1] I thank Nicholas D'Amore for suggesting this term to distinguish ingroup prosociality from prosociality
[2] Pre-publication version of this manuscript referenced as Simpson and Willer (2014).

My definition of ingroup prosociality encompasses most treatments of cohesion in group processes. Ingroup prosociality reflects several treatments of cohesion within the group processes subfield — for example, willingness to make costly investments in one's group (Benard 2012, citing Hechter 1987). Basham (2009) discusses task cohesion as smooth operation while working on a task, and social cohesion as smooth socializing and a mutually agreed-upon hierarchy. Cohesion can also manifest as affect and "we-feeling" (e.g., Benard and Doan 2011). While I focus on ingroup prosociality as orientations and behaviors that benefit groups, my studies include questions about sense of cohesion (e.g., feeling like part of the group and feeling the group is important). Including these questions helps to assess the extent to which sense of cohesion should be considered alongside other ingroup prosocial orientations and behaviors in the present theory about threats promoting ingroup prosociality.

In the following sections of this chapter, I first discuss my broad consideration of threats, and I explain why I propose that threats promote ingroup prosociality generally. I then consider the relevance of cultural context in terms of the prominence of ingroup-prosociality in collectivistic societies and how threats may have shaped these cultural contexts. I then discuss several specific outcomes I expect to reflect ingroup prosociality, and I present predictions for how I expect threat to affect these outcomes. These correspond to my three studies: holistic versus analytic cognitive and social orientations (Study 1), status in groups (Study 2), and the legitimacy of power in groups (Study 3).

Considering Threats Broadly

I define threats as situations or conditions likely to disrupt social groups. I propose that a broad range of types of threats promote ingroup prosociality. Barclay and

Benard (2013) speculate that multiple types of threats promote cohesion in similar ways, and suggest that testing this is a worthwhile endeavor (see also Benard and Doan 2011). Though I assess multiple types of threats, a noteworthy scope condition is that the threats are not made excessively or otherwise illegitimately; if they are, they may not be taken seriously (e.g., Emerson 1962). Consistent with this, Barclay and Benard (2013) conclude that abusing power by making repeated threats is not likely to promote ingroup-prosocial behavior.

Below I discuss four categories of threat I expect to operate similarly in promoting ingroup prosociality. My experiments explicitly address two of these four, existential and intergroup threats. Study 1 includes natural disaster and terrorism, Study 2 includes intergroup competition and scarcity of resources, and Study 3 includes a simulated existential threat via loss of group resources (though several examples of threats, including intergroup, are presented in describing the simulation). The remaining two types of threats, intragroup and intrapersonal, remain of interest to test in future work.

Intergroup Threat. Intergroup threat is when one's group faces competition from another group for scarce resources (e.g., Benard 2012). This threatens the group because if they do not win, they may not attain resources necessary to sustain the group and complete tasks. Under intergroup threats, ingroup prosociality helps to improve chances of winning. However, increasing relative standing over other groups may come at the expense of resources for the ingroup members (Tajfel 1971). Terrorism is an instance of intergroup threat when outgroups threaten, or act on threats, to withhold or take resources from the ingroup.

Existential Threat. Existential threat, such as natural disaster, threatens a group's physical existence or functioning. This involves deprivation of necessary resources or risk of dissolution, whether through attrition of members or destructive means. Terrorism is an existential threat when outgroups threaten, or act on threats, to physically harm the group. As mentioned above, the aftermath of a natural disaster, such as Hurricane Katrina, can prompt ingroup prosocial behavior (e.g., Rodríguez, Trainor, and Quarantelli 2006). Experimentally replicating existential threat, Barclay and Benard (2013) found that an apparent increase in the threat level, as the chance of losing all group resources, incentivized costly individual contributions to the group.

Intragroup Threat. Intragroup threat is when a member or members of the ingroup threaten the ingroup itself, such as a deviant or defector (e.g., Wellen and Neale 2006). Domestic terrorism may be considered an instance of intragroup threat. Another example is ingroup members competing for rank or status in the group (e.g., Barclay and Benard 2013). Barclay and Benard (2013) found that unstable group orders led high-ranking individuals to threaten their group more, and that low-ranking group members were less invested in their group when high-ranking members appeared to have more power. Here, it seems possible that instability undermines the legitimacy of power.

Intrapersonal Threat. Intrapersonal threat brings into question one's identity as a prosocial group member. Though this type of threat less directly undermines a group's social structure, it puts the group at risk of having members that are not invested. An example of this potential for group undermining is the importance of morale in military groups. A field experiment by Perez-Truglia and Troiano (2015) found support for intrapersonal threat promoting ingroup prosociality — shaming letters emphasizing the

importance of paying taxes and the public good seemed to be effective in getting tax delinquents to pay.

Two theories closely related to intrapersonal threat processes are control systems theories of identity. Affect Control Theory (ACT) predicts that when the self and the situation are inconsistent (based on abstract fundamental sentiments, see Francis 2006), individuals are motivated to try to change the situation to lessen the dissonance they feel (e.g., Owens 2002). Following ACT, if the ingroup prosocial identity is threatened, group members will behave in ways that try to affirm the prosocial group member identity. Identity Control Theory (ICT) is similar to ACT, but rather than specifying behavioral outcomes in the social world, it specifies self-level negotiation of the internal identity (Smith-Lovin and Robinson 2006). Following ICT, if the ingroup prosocial identity is threatened, group members will negotiate their self-meanings in ways that promote them thinking of themselves as ingroup-prosocial.

While threats to groups include a broad range of situations, I clearly define them as conditions likely to disrupt the functioning of the group. In terms of the present theory, I propose that threats are a general class of situations that promote a general class of responses, which I define as ingroup prosociality. I discuss this in greater detail below.

Threat Promotes Ingroup Prosociality

Some research suggests that threat promotes ingroup prosociality. Americans have expressed more identification with their country and reported experiencing prosocial benefits after the 9/11 terrorist attacks (e.g., Moskalenko, McCauley, and Rozin 2006; Poulin, Silver, Gil-Rivas, Holman, and McIntosh 2009). Prosocial behavior also emerged

following the Hurricane Katrina damage in Louisiana (e.g., Rodríguez et al. 2006). Support for U.S. President George W. Bush increased with government-issued terror warnings (Willer 2004), and Landau et al.'s (2004) experiment found that inducing reminders of the 9/11 attacks increased support for Bush.

While many research findings suggesting that ingroup prosociality arises from threats come from the TMT tradition, relevant findings come from other literatures as well. An economics experiment found that participants were more likely to participate in conflict with an outgroup when their ingroup was threatened (Weisel and Zultanb 2016). Supporting the idea that competition facilitates performance, simply being compared to another group increased public goods contributions to the ingroup (Böhm and Rockenbach 2013), and considering rivals as especially threatening competitors, Kilduff, Elfenbein, and Staw (2010) found support for increased defensive efficiency among NCAA basketball teams during games with rival teams. Benard's (2012) experiment found that conflict with an outgroup increased individuals' contributions to their group and punishment of fellow group members for insufficient contributions. Nadler, Harpaz-Gorodeisky, and Ben-David (2009) found support for defensive helping of outgroups, such that when the status order between groups is unstable, ingroups will help outgroups in ways that encourage the outgroup's dependence on the ingroup.

Terror Management Theory (TMT)

The terror management theory (TMT) literature helps to explain why threat promotes ingroup prosociality. According to TMT, people respond defensively to threats to their cultural worldviews (e.g., Greenberg, Solomon, and Pyszczynski 1997). Cultural

worldviews are strongly-held values, expectations, and beliefs about how the world works (e.g., Greenberg et al. 1997). From this point on, I discuss cultural worldviews as worldviews to prevent confusion with my cross-cultural predictions. I assume that ingroup-prosocial values are fundamental across cultures. However, the literature suggests that the extent to which these worldviews are fundamental may differ across cultures (e.g., Simpson and Willer 2014, citing Yamagishi and Yamagishi 1994). In Study 1, I investigate the extent to which ingroup prosocial responses to threats differ by culture.

While some research finds that terror management effects depend on personality (e.g., Landau, Greenberg, Solomon, Pyszczynski, and Martens 2006), many worldviews are widespread.[3] For example, Rosenblatt et al. (1989) found that when mortality is salient, participants with relatively negative attitudes toward prostitution proposed higher bail punishments. Another example is how prejudiced whites primed with mortality salience preferred a black person portrayed stereotypically over a black person portrayed counterstereotypically (Simon, Waxmonsky, Greenberg, Pysczynski, and Solomon 1996, as cited in Greenberg et al. 1997). In terms of these research findings, society's sentiments toward prostitution and racial stereotypes, respectively, are worth considering. I argue that ingroup prosocial worldviews are prevalent enough that it is worthwhile to test whether threats to these worldviews increase ingroup prosocial orientations and behaviors.

In my formulation, ingroup prosocial worldviews and ingroup prosocial self-concepts and social identities may overlap. Though I mainly frame my theory in terms of

[3] The personal need for structure (PNS) construct is often examined in TMT research (e.g., Landau et al., 2006, citing Thompson, Naccarato, Parker, and Moskowitz, 2001).

the TMT literature, both TMT and control systems theories of identity (ACT and ICT) emphasize individuals' needs for consistency and reconciliation between reality and the self (reflecting Festinger's 1957 classic concept of cognitive dissonance, e.g., referenced in Pyszczynski, Greenberg, and Solomon, 1997). However, conceptually worldviews extend beyond the self into the social world, and encompass schemas such as how status orders and power structures are supposed to work. Like TMT, ACT and ICT explain why people prefer to think of themselves as ingroup prosocial. However, TMT is more useful in its ability to frame individuals' perspectives on the social world. Study 3 is especially promising in its ability to assess reactions to power structures individuals see as more or less legitimate, and the extent to which people act in ways to change them.

The TMT literature has examined a great deal of ingroup prosocial outcomes, and found that threats to worldviews (most often the standard mortality salience manipulation) increase support of ingroup prosocial worldviews. Examples of this type of worldview is that of one's social groups, such as one's country or an organization they belong to, enduring beyond one's death (Routledge and Arndt 2008), and viewing one's country as a single, cohesive entity, or entitativity (Herrera and Sani 2013). Herrera and Sani (2013) found that sense of entitativity increased ingroup identification. Other relevant outcomes include increased support for an American charity but not a foreign one (Jonas, Schimel, Greenberg, and Pyszczynski 2002), increased conformity to ingroup members' attitudes (Renkema, Stapel, and Van Yperen 2008), and increased derogation of a critic of the University ingroup when it was presented as an impermeable group (Dechesne, Janssen, and van Knippenberg 2000). As discussed above, ingroup prosociality need only benefit the ingroup, not necessarily other groups or society more

broadly. A prime example is Greenberg et al.'s (1990) finding that when mortality is salient among Christians, positive evaluations of Christians increased and negative evaluations of Jews increased.

A standard procedure demonstrated to induce the predicted terror management effects experimentally manipulates salience of one's own mortality using a written task (e.g., Rosenblatt et al. 1989, Greenberg et al. 1990). However, the literature has demonstrated terror management effects not to be limited to this mortality salience manipulation (e.g., passersby walking through a cemetery, Gailliot, Stillman, Schmeichel, Maner, and Plant, 2008, or in front of a funeral home, Jonas et al. 2002). Mortality salience is especially interesting because many people hold worldviews about literal or symbolic immortality, such as an afterlife or legacy within one's groups (e.g., Greenberg 1997).

Though TMT research largely focuses on the effects of mortality salience, the worldview defensiveness effects are not limited to mortality salience. In other words, other means of threatening one's cultural worldviews have been found effective in increasing defense of cultural worldviews. Major, Kaiser, O'Brien, and McCoy (2007) found support for written stimuli about discrimination to Latinos and women on these individuals' self-esteem and victim-blaming outcomes. Effective manipulations for white Americans were a prototypicality threat in which data were presented about their numeric decline in the population (Danbold and Huo 2015), and responses to an artificially darkened versus lightened photo of U.S. President Barack Obama (Willer, Feinberg, and Wetts 2016a, also 2016b). Further examples include Willer (2008) on threats of terrorism and support for 2008 Presidential Candidates, (as discussed above) support for President

Bush increasing with government-issued terror warnings (Willer 2004), and (also as discussed above) increased support for Bush with experimentally manipulated reminders of the 9/11 attacks (Landau et al. 2004). Though the terrorism effects could be construed as an indirect means of eliciting mortality salience, there is evidence of other worldview threat manipulations, especially relating to racial prejudice and insecurity, eliciting defensiveness of worldviews. Willer et al. (2016a, also 2016b) found that experimentally-manipulated racial threats to white Americans increased support for the Tea Party. Similar to these research findings, I propose that if the group is somehow threatened, I propose that people will think and act in ways that benefit the group — upholding the ingroup prosociality worldview embodied in a smoothly functioning task group.

Cross-culturally, the TMT process appears relevant in collectivistic as well as individualistic cultures. Heine, Harihara, and Niiya (2002) found that Japanese participants primed with mortality salience responded with more negative evaluations of an anti-Japanese essay writer, but only marginally responded on wanting status symbols, like more expensive cars. In a comparison of Chinese and American participants, mortality salience increased nationalism for Chinese participants, but interestingly, not for American participants (Routledge, Juhl, Vess, Cathey, and Liao 2015).

Overall Prediction

Because I propose that threat generally promotes ingroup prosocial orientations and behaviors, I predict:

Overall Prediction: Compared to non-threatened individuals, threatened individuals will exhibit more ingroup-prosocial behaviors and cognitive and social orientations. This will apply for all types of threats, including intergroup, existential, intragroup, and intrapersonal.

Support for the overall prediction would support the central proposition that threats promote ingroup prosociality. Much existing research appears to support this prediction. Empirical support from tests designed to evaluate the theory would demonstrate the theory's viability and allow for further refinement. Support for this prediction also suggests practical consequences for behaviors, cohesion, and leadership strategies in groups. As discussed above, only the intergroup and existential types of threats are explicitly addressed in this research — the intragroup and intrapersonal types remain of interest for future work.

More Ingroup Prosociality in Collectivistic Societies

Members of collectivistic societies tend to think and act more prosocially toward their ingroups than members of individualistic societies (see Holistic versus Analytic Orientations below). For example, individuals in China might intentionally refrain from expressing personal views when they are in groups, unless the group agrees on acceptable ways to express them (Bond 1986, as cited in Markus and Kitayama 1991). This smoothes interaction, prevents interpersonal conflict, and facilitates task orientation. Collectivistic societies are characterized as having high levels of cooperation within their groups, but low levels of generalized trust for members of other groups (Simpson and Willer 2014, citing Yamagishi and Yamagishi 1994). Members of collectivistic societies

also tend to be discriminating about who they want to help, and loyal toward those they see as members of their groups (Markus and Kitayama 1991, citing Triandis 1989).

Derlega, Cukur, Kuang, and Forsyth (2002) found that individuals who thought of themselves as more interdependent than independent reacted more negatively when faced with group-level international conflict than interpersonal conflict. This suggests greater internalization and reaction to threats to one's group among those with more collectivistic orientations, and higher personal investment in the group's interests. However, this does not necessarily mean that members of collectivistic societies are more invested in all social groups. While members of collectivistic societies' collectivistic orientations benefit their immediate ingroups, they tend to be less invested in other groups than members of individualistic societies are.

Also, self-concepts tend to be especially relational in collectivistic societies (Markus and Kitayama 1991). Their major distinction is that while Western identities are detached from context, Eastern identities are situationally bound. Considering the social group and its needs as instances of situation and context, these are compelling arguments to consider members of collectivistic societies as generally having higher levels of ingroup prosociality than members of individualistic societies.

More Threat in Collectivistic Societies

Existential threats, such as natural disaster, may explain why some cultures tend to be tighter than others (compared to looser ones) (Gelfand et al. 2011, also Gelfand 2014). Tightness describes stronger norms with less tolerance for deviance, and looseness describes less rigid norms with more tolerance for deviance (Gelfand et al. 2011).

Tightness versus looseness (Gelfand et al. 2011) seems to overlap with collectivism (see Methods discussion relating to Hofstede, Hofstede, and Minkov 2010). While tightness-looseness explicitly addresses social control orientations rather than ingroup prosocial orientations, the overlap is profound when considering ingroup prosociality as the desired end result of social control. I propose that threats at least in part explain why members of collectivistic societies tend to be more ingroup-prosocial than members of individualistic societies.

Following Gelfand et al.'s (2011, also Gelfand 2014) argument, differences in the early formation of Eastern and Western societies likely shaped differences in ingroup prosociality. For example, coastal Japanese societies have been necessarily concerned about tsunami. Food production systems also distinguish societies — Eastern systems, such as rice paddies, tend to be relatively communal (e.g., Huntington 1996, Nisbett, Peng, Choi, and Norenzayan 2001). Food systems that depend on cooperation mean more precarious survival. Conditions where threat is salient, is a frequent challenge for the society, or both, may have encouraged values that promote group interests. By comparison, threats resulting from natural disaster risk and food production systems may not have been as salient in Western societies. Consistent with this, members of Western societies tend to value individuality and autonomy more so than members of Eastern societies.

While both collectivistic (e.g., Eastern) and individualistic (e.g., Western) societies experience some threats, threats may be more internalized, or salient, to members of individualistic societies. Norms and values shaped by threats may become reinforced in social institutions, such as schooling (Lucas and Schooler 2012

unpublished, citing Ventura, Pattamadilok, Fernandes, Klein, Morais, and Kolinsky 2008). For example, China's one-child-per family policy shaped Chinese life over the past four decades, amidst the threat of resource shortages resulting from overpopulation.

Within some individualistic societies, the valuation of conformity and related work attitudes vary by socioeconomic standing (e.g., Kohn 1977[1969]). With poverty and homelessness being greater threats to the working class than the middle class, this suggests greater collectivism among those with lower, more precarious socioeconomic standing. In this, socialization differences have proven adaptive for generations of middle- and working-class families in their respective environments. While it would be of interest to examine extent of collectivism within societies largely characterized by individualism, this work instead aims to compare two respective societies categorized as relatively individualistic and collectivistic and assess the role of threat in shaping their patterns in ingroup prosociality, specifically in Study 1.

Before presenting the Study 1 results that address the main predictions, I assess results designed to test two assumptions, first that members of collectivistic societies experience more threat than members of individualistic societies, and second that they tend to be more ingroup prosocial.

The present work investigates how experimentally manipulating threat affects ingroup-prosocial orientations and behaviors. It also compares experimental results across collectivistic and individualistic societies, to assess how differences in threat between society types might explain differences in ingroup prosociality. Evaluations of various types of threats in the experiments and participant demographics allow for even more nuanced assessment of these relationships.

Ingroup Prosociality Outcomes

Similar to the framing of threats, I consider ingroup prosociality as a broad class of orientations and behaviors. I explain three categories of testable outcomes I propose reflect ingroup prosociality — holistic versus analytic types of social and cognitive orientations, upholding status orders in groups, and promoting the legitimacy of power in groups.

Holistic versus Analytic Orientations (Study 1)

I define holism as the tendency to consider the larger system and interrelation of parts globally, rather than sub-parts or individual roles locally, or analysm. This largely follows Nisbett et al.'s (2001) theory, which Choi et al. (2007) use to inform their Analysis-Holism scale. I propose that holism is an ingroup prosocial orientation, or worldview, because it promotes focus on and orientation toward the larger context or group, and is especially characteristic of members of collectivistic societies (discussed further below). If members of collectivistic societies tend to be more ingroup prosocial as well as holistic, then holism may be an instance of ingroup prosociality. Study 1 is designed to test this possibility.

I argue that several other cognitive and social orientations are in the spirit of holism. Specifically, interdependence (Singelis 1994), group orientation (Schooler 1990), and potentially, as discussed above (e.g., Benard and Doan 2011), sense of cohesion (e.g., feeling like part of the group). Study 1 will assess both measures designed to assess holism specifically (e.g., Choi et al. 2007, Triandis and Gelfand 1998) as well as other related constructs. Another example, though not included in Study 1, is social value

orientation (SVO, Van Lange 1999), which includes a hypothetical exchange task with a hypothetical partner.

The ingroup prosociality constructs I propose do not simply reflect unselfishness versus selfishness. As I specified in terms of ingroup prosociality broadly, they are specific to a reference ingroup, and the orientations have concrete ways they benefit the ingroups. A low-status individual endorsing social dominance orientation beliefs (SDO, Pratto, Sidanius, Stallworth, and Malle, 1994) is not self-serving, because status-disadvantaged persons would be promoting their own low status, and attaining status is normally desirable (Anderson, Hildreth, and Howland 2015). I also return to the example of Chinese behavior (from Bond 1986, as cited in Markus and Kitayama 1991), in which individuals in groups intentionally refrain from expressing personal views, unless the group agrees on acceptable ways to express them. If the individual were not focused on or oriented toward the group, this could diminish smoothness of the interaction, ability to manage without interpersonal conflicts, or task orientation. Success of the task group is especially relevant to the group studies, because in status research in group processes, a necessary scope condition is that groups are task oriented, and can succeed or fail at the task (e.g., Berger, Fişek, Norman, and Zelditch 1977).

This brings us to the first specific prediction:

> **Prediction 1:** Compared to non-threatened individuals, threatened individuals will exhibit more ingroup-prosocial cognitive and social orientations.

Support for this prediction would be consistent with the cross-cultural differences in holism discussed below. Such results may even suggest that threat has played a role in

shaping differences in ingroup prosociality between collectivistic and individualistic societies, whether historically, continuously, or both. This follows my first assumption, that members of collectivistic societies experience more threat than members of individualistic societies. In other words, comparing Indians to Americans, I assume a higher baseline level of threat (in the absence of any exceptional situation, such as the experimental manipulations). This may then result in my second assumption addressed below, that members of individualistic societies exhibit more ingroup prosociality than members of collectivistic societies.

Members of collectivistic societies tend to be more holistic than members of individualistic societies (e.g., Nisbett et al. 2001, Kitayama, Duffy, Kawamura, and Larsen 2003). Kitayama et al. (2003) found that Easterners were especially likely to attend to context — they were more accurate in judging relative lengths of lines, while Westerners were more accurate in judging absolute lengths of lines. Though not necessarily causal, they also found that individuals who lived temporarily with the opposite culture type responded more like their host culture. Masuda and Nisbett (2001) found similar evidence on perception for responses to animations of underwater scenes and images of wildlife. Self-concept and social identity literatures also reflect greater interdependence among members of collectivistic societies (e.g., Markus and Kitayama 1991; Yuki 2003). Based on the cross-cultural research I review, I test another initial assumption before presenting results for the predictions. My second initial assumption is that members of collectivistic societies will exhibit more ingroup-prosocial cognitive and social orientations than members of individualistic societies (particularly holism and similar orientations).

While the TMT literature discussed above mainly addresses American and European participants, the Routledge et al. (2015) finding of mortality salience effects on nationalism for Chinese but not American participants suggests that ingroup prosociality responses to threats may differ between cultures. Despite the nationalism result unique to Chinese participants in Routledge et al. (2015), many studies found other support for increased ingroup prosociality among Americans and Europeans toward their country under threat (e.g., Routledge and Arndt 2008, Herrera and Sani 2013). Below I offer two alternative competing predictions.

Threat beyond normal levels may be more effective in increasing prosociality for members of individualistic societies than members of collectivistic societies. I propose that threat has historically shaped differences in ingroup prosociality between societies, particularly for collectivistic societies. Because members of collectivistic societies have likely been exposed to more threat, I predict that their net response to additional threats will be lower than that for members of individualistic societies. In other words, I would expect members of individualistic societies to be more responsive, or sensitive to threats. If members of collectivistic societies tend to be less responsive, or less sensitive, to threats, I predict:

> **Prediction 2A:** Threat will increase ingroup prosocial cognitive and social orientations more for members of individualistic societies than for members of collectivistic societies.

For members of individualistic societies, whose baseline levels I propose are relatively low for both threat and ingroup prosociality, it is worth noting that there is more potential for these levels to increase.

It is also possible that because threat is more salient to members of collectivistic societies, they will be more responsive to threats, and their ingroup prosociality will increase more. This is consistent with the self-concept and social identity literatures mentioned above (e.g., Markus and Kitayama 1991; Yuki 2003), as well as the control systems theories of self addressed further above (ACT and ICT). If this alternative is the case, I predict:

> **Prediction 2B:** Threat will increase ingroup prosocial cognitive and social orientations more for members of collectivistic societies than for members of individualistic societies.

Predictions 2A and 2B are competing predictions, and will provide insight into threat and ingroup prosociality cross-culturally. We would expect a greater threat difference for members of individualistic societies mathematically if baseline threat levels are higher for members of collectivistic societies (my first initial assumption), and there is relatively little room to increase. I expect counter-factual modeling to help isolate culture and threat effects (see Analyses). Prediction 2B is plausible if members of collectivistic societies are more motivated to mobilize against threats than members of individualistic societies.

Though the Prediction 2A and Prediction 2B explanations are not mutually exclusive, they assess two possibilities. The two possibilities are that members of individualistic and collectivistic societies, respectively, are especially responsive to threats.

While existing literature suggests that some threats promote some prosociality outcomes, research has not yet integrated various types of threats and ingroup

prosociality outcomes and evaluated them as components of a broad process. Work in TMT captures some of this, but no known work yet addresses ingroup prosociality as a broad worldview or basic group processes such (status and power). Cultural context may play a strong role, and Study 1 investigates this in terms of threats and ingroup prosocial orientations. The focus now turns to Study 2 and Study 3, which assess the theory in terms of status and power processes central to the group processes literature.

Status in Groups (Study 2)

My treatment of status in groups is consistent with the expectation states and status characteristics traditions founded by Berger and colleagues (e.g., Berger et al. 1977). Status is esteem and influence in a group, and this results in expectations for the competence and worth of people's contributions to the group. For a given characteristic, there are positive and negative states that vary depending on cultural values — such as male valued over female. States may also be specific to the situation, such as an ability score. I propose that upholding the group's status order is an ingroup-prosocial worldview because following competent guidance increases a task group's chances of succeeding.

The combined expectation states (EST) and status characteristics (SCT) research program generally has two scope conditions and four assumptions (e.g., Ridgeway and Correll 2003 in DeLamater 2003, citing Berger et al. 1977). The two scope conditions are collective orientation of the group and task orientation, and the four assumptions are salience, burden of proof, sequencing, and aggregation. An extension and fifth assumption is expectation advantage (e.g., Hysom 2013 citing Berger, Fişek, Norman,

and Wagner 1985, and Berger, Fişek, Norman, and Wagner 1998). Standardization of methods, known as the standard experimental setting (SES), have developed along with the EST and SCT research program from the beginning with Berger and colleagues (e.g., Berger et al. 1977). Notably, Troyer (2002) created a computerized version of the SES, which largely shaped the methods for Study 2 and Study 3 in the present research, and has been used in other related research (e.g., Kerns manuscript in progress).

Behavioral deference is the standard measure of status, such that those higher in status get more deference from others (e.g., Berger et al. 1977). Extensive research has supported EST and SCT and found that individuals defer more to high-status persons than low-status persons in groups (e.g., Webster and Rashotte 2010). I assume that the EST and SCT theories hold, and I expect to observe consistent response patterns in my study. I test the status outcomes by status manipulation condition before presenting results for the predictions.

If a smoothly operating status order is an ingroup prosocial worldview, then people should adhere to it more so under threat than not under threat. For low-status individuals, this conflicts with the fundamental desire to attain social status (extensive literature review by Anderson, Hildreth, and Howland 2015, see also Willer 2009). However, Anderson, Srisvastava, Beer, Spataro, and Chatman (2006) found that self-perceptions of status are quite accurate, and they propose that this is because overly positive status evaluations decrease acceptance by the group. From this perspective, a low-status group member behaving in ways more consistent with their low status (e.g., deferring more to high-status group members) should result in them being more accepted, but not increasing in status. The expected result is a smoothly operating status order.

Anderson, Willer, Kilduff, and Brown's (2012) experiment found that people sometimes prefer lower-status positions in groups, particularly when they believed they were less valuable to the group and others expected poorer performance from them. I suggest that threatening situations may further promote these beliefs.

Under threat, I predict that low-status group members will defer more than usual, further reinforcing their low status. High-status members may then be more inclined to defer less, or lead. This will result in a greater difference in amounts of deference between low-status and high-status group members when threatened than when not threatened. I predict:

> **Prediction 3:** When threatened, the difference in status outcomes for low-status task partners compared to high-status task partners will be greater than when not under threat. This is such that threat increases deference to high-status partners and evaluations of them as high-status, and decreases deference to low-status partners and evaluations of them as high-status.

I predict greater magnitude of these status differences under threat because the more group members adhere to its prestige or deference order, the more likely it is to have favorable outcomes. For example, people may be more likely to seek expert guidance under threat. In task groups differentiated by status, specific efforts to maximize task performance in threatening situations could be low-status persons deferring more to high-status persons, and high-status persons deferring less to low-status persons. Acting in ways that promote favorable group outcomes make these ingroup prosocial behaviors.

Support for Prediction 3 would suggest that adhering to status orders is an ingroup-prosocial worldview shaped by threat. However, these behavioral outcomes do not allow such worldviews to be disentangled from practical responses to threat. It would

be necessary to ask individuals why they acted as they did, but as suggested in the terror management theory literature, defending worldviews when threatened seems to be an unconscious process (e.g., Greenberg et al. 1997). Instead, to assess whether individuals internalize worldviews about status orders more so under threat, evaluating orientations toward these status orders should provide some insight. In terms of Prediction 3, I also assess participant ratings of the partner's status. I discuss orientations related to status orders in more detail below.

I propose that the change to status processes in threatening situations as in Prediction 3 not only applies to ingroup prosocial behaviors within groups, but also orientations. Major et al. (2007, as cited in Major and Kaiser 2017) present worldview threat theory (WVT), in which people seek consistency between their status ideologies and their personal experiences. While Major et al. (2007) assess self-esteem and victim-blaming consequences, the present work investigates specific behaviors and orientations proposed as instances of prosociality. Jost and Hunyady (2005) present several system-justifying ideologies, including meritocracy, social dominance orientation, and political conservatism (see Jost and Hunyady 2005, 261, Table 1). In this work I focus on social dominance orientation, which is preference for social hierarchies (SDO, Pratto et al. 1994). Depending on the ingroup, these ideologies may be considered ingroup prosocial. I also assess feelings of cohesion (e.g., feeling part of the group) as potentially reflecting ingroup prosociality. I propose that these orientations increase under threat, regardless of the person's status in the group.

Following the logic of Prediction 3, but in terms of orientations that uphold status orders, I predict:

> **Prediction 4:** Threatened individuals prefer status orders more than non-threatened individuals.

Support for this prediction would demonstrate how threat shapes status-relevant and cohesion orientations as instances of ingroup prosociality and ingroup prosocial worldviews. It is possible to act in the practical interest of the group (i.e., by behaviorally adhering more strongly to the status order), but not necessarily internalize this orientation. By including both behavioral and orientation outcomes in my theory, I allow more room for refinement. For example, if ingroup prosocial behaviors but not orientations increased with threats to the group, this would diminish support for the ingroup prosociality worldview explanation based on TMT (e.g., Greenberg et al. 1997).

While this work does not address group processes cross-culturally, there is reason to speculate that these status processes would be impacted by cultural context. This considers them along with the holistic-type ingroup prosocial behaviors and orientations addressed in Study 1. Markus and Kitayama (1991, 230, note 3) offer insight into these processes in their discussion of nonconformity:

> For Japanese, nonconformity is a privilege afforded only to selected, talented individuals whose deviance from the norm of interdependence is implicitly sanctioned by the rest of society. For Americans, nonconformity is regarded as every individual's birthright. (Markus and Kitayama 1991, 230, note 3)

Also, Torelli, Stoner, and Puente (2014) presented evidence that persons higher in individualism define status in terms of competence, while persons higher in collectivism consider warmth along with competence (specifically comparing U.S. Americans with Latin Americans). While not addressed directly in the present experiments, cross-cultural relevance is of significant interest for discussion, and differences in status perceptions

have implications for the legitimacy of power structures in groups. These cross-cultural dynamics remain to be tested in future work. However, for example, if Japanese society faces more threats than American society does, and Japanese individuals are more likely to adhere to and prefer status orders, this would lend further support to Prediction 3 and Prediction 4.

I now turn to legitimacy of power processes in groups, which are closely tied to status processes.

Power in Groups (Study 3)

My third study assesses how threat affects behaviors and orientations that promote the legitimacy of power structures in groups. Though related to status orders, promoting the legitimacy of power is distinct from upholding status orders, which Study 2 was addressed. I present theory about status and the legitimacy of power, and explain how I expect threat to shape these processes. For individuals in low-power positions (all participants in Study 3), I propose that these behaviors are acting in ways to change the power structure (e.g., voting to join a coalition against a powerful actor), and these orientations are assessment of the legitimacy of those in a position of power.

Power in groups is the ability to control resources (e.g., Emerson 1962) and to exercise one's will despite others' resistance (Weber 1968, 16.A).[4] Power is distinct from status, because power comes from a structural position or title, while status reflects esteem and influence. Network exchange theory (NET, Markovsky, Willer, and Patton,

[4] Lucas and Baxter 2011 cite Lovaglia (1999), Weber (1978), and also Markovsky, Willer, and Patton (1987) in defining power in this way.

1988, as cited by Lucas, Younts, Lovaglia, and Markovsky 2001) predicts power differentials depending on position within a resource network. Study 3 specifically presents a strong power network, in which low-power actors compete to make deals with the high-power actors (Willer 1987, as cited by Emanuelson and Willer 2015). Network exchanges illustrate how power manifests in the ability to exclude others from desired resources (Lucas et al. 2001, citing Markovsky et al. 1988). In the social world, power and status tend to be positively correlated, but they are not necessarily. Thye's (2000) findings illustrate the interrelation of status and power — resources that appeared to be from a high-status person were more valued than those appearing to be from lower-status persons, making the high-status individuals more powerful.

Relevant worldviews address who should hold power and how that power should be exercised. Legitimacy of power is the belief that the power is used or held in ways that are good or correct, which Walker, Thomas, and Zelditch (1986) describes as propriety. Zelditch (2001) considers power-prestige and legitimacy in terms of expectation states, such that status and the legitimacy of power tend to be congruent, or consistent with one another. Work by Ridgeway and colleagues (e.g., Ridgeway 1982, as cited by Lucas, Kerns, and Lovaglia manuscript in progress) found that status expectations and perceptions extend to prosocial versus selfish motivations toward groups, such that we favorably associate high-status individuals with ingroup prosociality, and unfavorably associate low-status individuals with selfishness.

Considering these findings and the theoretical framing of the legitimacy of power, Lucas et al. (manuscript in progress) predict that power is more likely to be viewed as legitimate when it is used for the good of the group (prosocially) rather than selfishly. In

other words, if we view high-status holders of power as using power more competently and prosocially, and low-status holders as using it more incompetently and selfishly, then status informs perceptions about the legitimacy of power (Lucas et al. manuscript in progress). Of potential interest, threats coming from outside the group but exploited by a powerful actor in the group may be considered as indirect coercion, while threats coming directly from the powerful actor may be considered direct coercion (Emanuelson and Willer 2015). This work examines indirect coercion, though direct coercion would be of interest for future work. Lucas et al. (manuscript in progress) found general support for powerful low-status actors being perceived as less legitimate than powerful high-status actors.[5] While Benard (2012) did not find that threat increased support for centralized leadership, other findings do suggest this (e.g., Willer 2004). Based on this literature, I adopt the initial assumption that high status increases treatment of powerful actors as legitimate, and low status decreases treatment of powerful actors as legitimate. As with the initial assumptions in Study 1 and Study 2, I assess support for this assumption before presenting support for Prediction 5.

Assuming that we view high-status actors holding power as more legitimate than low-status actors holding power, I propose that, similar to the status processes (Study 2 outcomes), threat will make these processes more prominent. I expect that legitimate (high-status) actors will be especially successful in attaining resources when under threat, and illegitimate (low-status) actors will be especially unsuccessful in attaining resources when under threat. This also applies considering others' perceptions of legitimacy as a

[5] Though results for Lucas et al. (manuscript in progress) generally did not support especially low legitimacy evaluations about fictitious low-status actors when they acted selfishly, this may have been due to confounding the status manipulation with other cues about the partner.

resource. I further consider others' perceptions of the actor's legitimacy as orientations consistent with the proposed ingroup prosociality worldview about the legitimacy of power.

I propose that promoting the legitimacy of power is an ingroup prosocial worldview, much like upholding group status orders. Following Lucas et al. (manuscript in progress), if powerful high-status actors are expected to use and perceived as using power more competently and prosocially, and powerful low-status actors are expected to use power and perceived as using power more incompetently and selfishly, then acting prosocially means enabling high-status actors in positions of power, and disabling low-status actors in positions of power. Acceptance of a competent powerful actor's power and compliance with his or her demands benefits the ingroup by maintaining a stable power structure in which all actors attain necessary resources (see Study 3 methods description in Chapter 7). I expect orientations to work in a similar way, as evaluations of the powerful actor's legitimacy, because these reflect internalization of the proposed ingroup prosociality worldview.

Though people may be motivated to seek power similarly to how they seek status (e.g., Anderson et al. 2015 on status), there are similar reasons why people do not seek power. For example, Anderson et al. (2006) discuss motivation to maintain one's own likability as a reason for not self-enhancing to increase status. Power additionally has the element of force — those low in power may not have the means to attain more power, despite their desire to. I argue that ingroup prosocial worldviews about the legitimacy of power are as fundamental as the other ingroup prosocial worldviews I address in this work. Caricati and Sollami (2017) treat status much like power in group processes, so I

describe their findings in terms of power. They found evidence interpretable as nurses having self-serving motives for attaining power, such that nurses rated their relative power position as more legitimate when upwardly mobile than when downwardly mobile. However, their reference group is not specified beyond nurses as a general group. Following my theory, I propose that if they had asked about legitimacy in terms of the entire medical profession as a group, the nurses would have responded such that they promoted legitimacy in ways that benefit the medical profession as a whole, not only nurses, even if it means occupying lower power positions.

Following the assumption that low-status actors are perceived to hold and use power less legitimately than high-status actors, I predict that this difference will be more prominent when the ingroup is threatened. In terms of threats to groups and this relationship between status and the legitimacy of power, I predict:

> **Prediction 5:** Threat increases treatment (including evaluation) of high-status powerful actors as legitimate, and decreases treatment of low-status powerful actors as legitimate, and in this, the difference in how legitimate individuals treat powerful low-status actors compared to powerful high-status actors will be greater than when not under threat.

Support for Prediction 5 would suggest promoting the legitimacy of power as both ingroup prosocial behaviors and orientations, and as an ingroup prosocial worldview that is activated under threat. In other words, the legitimacy of power helps group function, and commitment to the legitimacy of power increases under threat. As in the Study 2 predictions for behaviorally upholding status orders and having consistent cognitive and social orientations, the legitimacy of power processes also address both behavior and orientations. Accepting power exercised competently has practical benefits for the group

(see Study 3 methods description in Chapter 7), but this does not necessarily mean that this worldview has been internalized. Questions in Study 3 are designed to address perception of legitimacy of power, and the extent to which the behavioral and cognitive and orientation results align will be used to assess the proposed theory.

It is of interest to consider motivations for exercising power (e.g., Benard 2012). Barclay and Benard (2013) suspect that selfish motives affected those in their most powerful experimental condition. Dubois, Rucker, and Galinsky (2015) found that sense of power, but not status, promoted unethical behavior, but they distinguish unethical behavior from selfish behavior. Following the legitimacy discussion above, it is likely that people will attribute more selfish motivations to low-status than high-status actors exercising power. This is consistent with Prediction 5.

Individuals' exercise of power when given the opportunity may also reveal interesting aspects of the relationship between threat and upholding the legitimacy of power. If the worldview of legitimate power is internalized and amplified under threat, then under threat, compared to nonthreatening conditions, it follows that individuals low in status would exercise less power and individuals high in status would exercise more power. Study 3 includes questions designed to assess these possibilities, based on preliminary analyses of Study 2 (see Chapter 8 for more details about these questions).

Summary

Chapter 1 reviewed the theory and literature that inform the predictions the three studies are designed to test, drawing on terror management theory (TMT) and other relevant literature. The predictions presented test specific instances of the general

prediction, that threats to groups increase ingroup prosocial orientations and behaviors. Study 1 addresses social and cognitive orientations such as holism, Study 2 addresses upholding status orders in groups, and Study 3 addresses promoting the legitimacy of power in groups. The next chapter, Chapter 2, provides an overview of the methods, data, and analyses used for the three studies.

Chapter 2: Methods, Data, and Analyses Overview

In this chapter, I present an overview of the methods, data, and analyses used in the three experimental studies. Chapter 3 details methods, data, and analyses for Study 1. Chapter 5 details methods, data, and analyses for Study 2. Chapter 7 details methods, data, and analyses for Study 3.

Methods Overview

Experimental designs allow us to infer causation about threat manipulations (versus non-threat control manipulations) on ingroup prosociality outcomes. Random assignment of participants across the experimental conditions prevents systematic differences across condition groups. This allows us to infer that the difference in treatment between the experimental conditions is what caused any differences in outcomes observed. Qualtrics online survey software (Qualtrics, Provo, UT) allows for random assignment of instrument versions that correspond to the experimental conditions. The Turkitron web service (turkitron.com) is used for participant screening (to help ensure eligibility and prevent multiple responses). This service also allows for randomization of survey links administered. If demographic or other characteristics are unevenly distributed across conditions, these can be controlled for statistically (see Analyses below). Because of demographic differences across conditions in Study 1 (discussed more extensively in Chapter 3), Studies 2 and 3 rely instead on the Turkitron randomization, in hopes that using this service would result in more homogenous samples

across conditions than Study 1 did. However, there were still potentially problematic differences, especially for Study 2 (see Chapter 5 and Chapter 7). For all studies, when conditions begin to reach quotas for valid case counts, I adjusted condition selection procedures as appropriate.

All studies and pretests were administered using Qualtrics. All participants were recruited via Amazon's Mechanical Turk service (MTurk, https://www.mturk.com). Participants were asked to ensure that they were in a quiet space free of distractions while participating and that they had time to complete the study in one sitting. Protocol information and lists of variables used in the analyses for each study are available in the Appendices. The protocol information includes participant instructions as well as the exact wording of questions asked.

Cultural Representation

Study 1 used two samples: American participants, representing members of an individualistic society, and Indian participants, representing members of a collectivistic society. Study 2 and Study 3 only included American participants.

I chose Americans in the United States for my individualistic society samples. The United States and India appear to vary culturally on important aspects of social orientation, and are practical choices, as discussed below. The United States had a high score of 91 on the individualism-collectivism dimension of Hofstede's Value Survey Module (VSM) (Hofstede et al. 2010). I chose Indians in India for my collectivistic society samples. India's score on the VSM was 48 (Hofstede et al. 2010). This is notably lower than the United States, but some research describes it as intermediate (e.g., Sinha,

Sinha, Verma, and Sinha 2001, citing Hofstede 1980). Intuitively, an East Asian country might illustrate collectivism better than India. When Tu et al. (2011) compared questionnaire responses between India, China, Brazil, and Russia, India scored highest in individualism. While China scored notably lower than India at 20, Japan scored 42 (Hofstede et al. 2010). However, in Gelfand et al.'s (2011) 33-country study of tightness-looseness, India scored 11, higher (tighter) than all but two countries, Pakistan and Malaysia — the United States scored 5.1. Also notably, Tu, Lin, and Chang (2011) found that based on a survey of CEOs in Brazil, Russia, India, and China (the BRIC countries), India appears the most individualistic, while China appears the most collectivistic.

As of a 2009 survey, the United States and India were the two most represented nations on MTurk (56% and 36% respectively, Ross, Irani, Silberman, Zaldivar, and Tomlinson 2010). Though MTurk samples are convenience samples, some research found that the MTurk convenience samples are more representative of the U.S. population than convenience samples from laboratory studies (e.g., Huff and Tingley 2015). MTurk allows researchers to restrict recruitment by country, which makes it feasible to have separate listings that ensure appropriate representation from both countries. To maximize influence of the target culture, the task description listing for both American and Indian samples stated that participants were required to have native-born parents (second-generation). However, Ross et al. (2010) noted demographic differences between the U.S. and Indian MTurk populations — for example, 28% of Indian MTurk workers worked on MTurk to make ends meet, but only 14% of U.S. MTurk workers did. This suggests the importance of collecting demographic data and

controlling statistically where appropriate, especially when comparing U.S. and Indian data.[6]

MTurk pays in cash for both the United States and India. This makes the payment incentives comparable across my samples, which is important for the studies that appear to pay based on performance. China would have been a poor choice in this respect because it pays in Amazon credit, and Amazon access is limited in China, so the Amazon credit incentive would be worth little. Studies for both countries were in English, and I listed fluency in English as a requirement for participation. In Pavlick et al.'s (2014) study of MTurk users' language translations from six Indian languages to English, they state that because most MTurk tasks are English-only, they assume that there are few non-English speakers on MTurk.

Threat Manipulation Methods Pretesting

The threat manipulation methods pretesting process was thorough with multiple stages of revisions that ultimately shaped the study instruments. This pretesting manipulated threat (different types of threats versus non-threat control conditions) using a writing prompt salience manipulation based on priming procedures. Priming is a short-term process where stimuli (often occurring quickly and below the conscious level) affect subsequent cognition, attitudes, or behavior. Galinsky, Gruenfeld, and Magee (2003) used priming to induce behavior consistent with either having power over others or not, depending on whether the participant was asked to write about a time they experienced

[6] Control variable analyses include some demographic and social attitude variables, but not individual VSM scores (Hofstede et al. 2010). Including these scores as control variables may be of interest for future analyses.

power or a time when someone else had power over them. The threat manipulations in this work are based on the standard mortality salience manipulation from the terror management theory (TMT, e.g., Greenberg, Simon, Pyszczynski, Solomon, and Chatel 1992) literature, and also the seminal manipulation for priming a sense of power (Galinsky et al. 2003). By simply engaging with the target stimulus, research has found outcomes consistent with relevant situations in the social world. In the TMT literature, writing about what happens to one's body when one dies is a standard threat manipulation (as mortality salience, e.g., Rosenblatt et al. 1989 as cited in Hackney 2011:55). A common control condition is writing about what happens to one's body when watching television (e.g., Greenberg et al. 1997).

The TMT literature has similarly primed mortality salience by asking participants to write in detail about their own deaths, and found that morality salience increased defensiveness about cultural worldviews in various ways (e.g., Greenberg et al. 1997). Some researchers have used a distracting task between the experimental manipulation and outcome measures of interest as a means of solidifying the manipulation (e.g., Greenberg, Arndt, Simon, Pyszczynski, and Solomon 2000, as cited in Shatil 2012). This is explained as the necessary suppression of death-related thoughts (e.g., Greenberg et al. 2000). Due to time and resource limitations, a distracting task was included in Study 1, but not Studies 2 and 3.

In my salience manipulations, I first briefly described the threat and stated that some people find it threatening. I then asked participants to think about this threat — whether they have experienced it themselves or imagined what it would be like to

experience it — and to write about it in detail. This is the language for intergroup threat as competition over resources, for example:

> *People are sometimes* ***members of groups that must compete with other groups for scarce resources****. Think of a time when* ***you were part of a group, and your group had to compete with another group to obtain resources that were not very available (scarce)****. If you do not remember a time when you have experienced this, please imagine what it would be like to experience* ***competing with another group for scarce resources****. Please write in detail about your experience, or imagined experience. What were you thinking and feeling?*

I adapted this language for the other threats and control prompts — competition for rank or power within one's group (intragroup), deviance or defector within one's group (intragroup), natural disaster (existential), questioning one's prosocial group member identity (intrapersonal), and terrorism (both intergroup and existential); the non-threat control conditions were one's day yesterday (neutral, based on Galinsky et al. 2003) and one's next big examination (averse event not specifically threatening to the ingroup, McGregor et al. 1998, as cited in Shatil 2012).

The standard mortality salience manipulation was not included because it is a relatively indirect threat to social groups. Despite this, mortality might be treated as an existential threat to a group, especially if considering how members of a group are no longer alive and able to participate, this may threaten the structure of the group (see Castano, Yzerbyt, and Paladino 2002 on entitativity). Considering that mortality salience could be a threat to some extent, using the standard mortality salience manipulation as a control for the social group threat conditions described above could have been problematic. The standard TMT control manipulation about bodily experience watching television (e.g., Greenberg et al. 1997) is not directly comparable with the social

experiences described above because they did not mention any bodily experiences. The control conditions were written such that they do mention social experiences.

I asked pretest participants to write in detail about one of the threat or prompts as described above. The later pretesting rounds used a focused-thinking-question format, which I continued to use for the main studies. These questions asked the participant to write at least 100 characters about each of three separate questions addressing what they think and how they feel about the situation. Referring to the manipulation situation, the questions were as follows:

> *What do you think about this experience? (100 character minimum)*
> *What do you think this experience would be like for you? (100 character minimum)*
> *How would you feel about this experience? (100 character minimum)*

I then asked the participants several scale-formatted questions about how threatened they felt personally and how threatened they felt in terms of several of their social groups (e.g., family, nation). I included measures of sense of cohesion and other relevant outcomes, such as anxiety. I also asked participants to identify their most important social groups in a brief open-ended section to help ensure culturally appropriate reference groups are included in the instruments. During initial pretesting, some respondents expressed relief and gratitude when presented with a control condition situation that specified a low level of threat. For the final pretesting and study instruments, there were no mentions of threats in the control prompts, making them true control conditions.

In comparing results across the final pretested prompts, terrorism and natural disaster elicited strong responses compared to the control in terms of feelings of personal

threat and group threat for both American and Indians. Indices designed to reflect personal feelings of threat and sense of group threat were developed using factor analyses, and tested as highly reliable (Chronbach's $\alpha > 0.90$).

Because terrorism and natural disaster are social and nonsocial in nature, respectively, and the pretesting elicited responses across cultures (therefore likely culturally relevant), they are used for Study 1. And because samples from both countries responded in the pretesting and in some ways in Study 1, these threat manipulations inform the Study 2 threat manipulations. The Study 2 threat manipulations are similar to Study 1, but they incorporate the group task scoring situation, such that competition with other groups did or did not affect earnings. The same is true for Study 2 informing Study 3 — the threat manipulations are similar, but Study 3 incorporates an existential threat similar to Barclay and Benard 2013, which affects group performance and pay, and there is no intergroup competition as in Study 2.

All main study participants responded to three guided-thinking questions about the threat manipulation prompt (designed to encourage thoughts and feelings about the situation). Specific threat manipulations for the studies are described in more detail in later chapters (Chapter 3 for Study 1, Chapter 5 for Study 2, and Chapter 7 for Study 3). While the threat manipulations used are similar in their priming and guided-thinking format, Study 2 and 3 are distinct because the threats directly relate to the behavioral group tasks and ostensibly affect participants' abilities to earn a high score and high payment on MTurk. Consistent results across different types of threat manipulations would suggest their validity and demonstrate that threat (and potentially the ingroup prosociality outcomes proposed) can be elicited in multiple ways.

Data Overview

My initial pretesting data included written responses that were assessed qualitatively, and quantitative questionnaire responses that were analyzed in terms of the direction and magnitude of responses. These were used to develop threat manipulations for Study 1 and the later studies, as described above.

Initial power analyses demonstrated that 30 participants per experimental condition would be adequate for each of the three studies to detect a difference of one standard deviation between the groups (ranging from 4 to 8 different groups), at a power level of .80 and alpha level of 0.05 (findit *fpower*, in *Stata* v.13). However, this may be too large of a difference to expect, so 30 cases per condition may be too conservative, and I may need more than 30 participants per condition. Because the pretesting results revealed distinct effects (though with only 10 per condition), and due to resource limitations (i.e., funds for participant payments), I use an effect size of half of a standard deviation difference (effect size 0.5) between two means at power level 0.80 ($\alpha = 0.05$). Based on these factors, I determined that 51 participants per experimental condition would be appropriate (e.g., *power* in *Stata* v.13). This is a greater cell size than what many related studies in the literature use (e.g., Barclay and Benard 2013), and so is less likely to commit a Type II error (see also ResearchGate question and answer posts, 2014).

While data in Study 2 and Study 3 are randomly dropped to ensure even numbers of participants in each condition within the respective samples, no further measures were taken to even condition counts in the event of missing data. An alternative method would

have been dropping cases from each individual analysis. However, this would have undermined comparability, because the sample for each analysis could have been different, in addition to the already missing data. Condition counts were most often uneven for questions probing about suspicion-related behavior, which were only asked of participants who indicated some type of suspicion. Numbers of valid cases in each condition for each variable are included in the tables. This limitation most affects collapsed analyses in Study 2 and Study 3 that compare both low- and high-status non-threat conditions with both low- and high-status threat conditions.

Data were excluded from analyses if participants failed to answer critical questions about their experimental manipulation correctly, or if they indicated that suspicion about the purpose of the study affected their behavior in a specific way or led them to act as though it were not real. Data from participants were also excluded and they were not paid if there was reason to suspect they did not take the study seriously (e.g., off-topic or inattentive written responses and missing questions designed to check if they were paying attention). A reasonable data rejection rate for these studies is around 20%. The participant counts only include valid cases.

Initially I intended for manipulation check questions critical to decisions about keeping data in the sample to include those about the threat manipulations. However, given the responses collected (see more details about manipulation checks in the results presented below), I decided to be lenient about these. I was surprised to find that correct as well as condition-consistent responses were not more common, especially in the group studies where the threat elements were built into the task instructions. For the group studies, I was strict about the participants acknowledging that the partner as having

higher or lower contrast sensitivity ability than themselves, because this is a straightforward and well-established manipulation in the literature (e.g., Berger et al. 1977). Missing this manipulation would demonstrate too much inattentiveness to the experiment. Considering the threat manipulations, similar decision was made about the humor manipulation used in an experimental study on status and use of humor (Kerns manuscript in progress) — as in the results presented below, participants performed better on the status manipulation checks than the humor manipulation checks.

All three studies included general attention check questions, specific questions about the experimental manipulations (manipulation checks), probes for suspicion about the purpose of the research, and for Study 2 and Study 3, further questions about believing and acting as though the situation and other participants were real. In addition to data inclusion criteria, I help ensure validity of the data by excluding registrants that have already participated in a study in this series. While this method was largely effective, inconsistent MTurk ID entry and potentially the Turkitron system resulted in imperfect implementation. However, this is not known to affect more than a trivial number of cases in the final Study 1 sample, and none in the final Study 2 or Study 3 samples.

I included a brief questionnaire before the main Study 1 instrument to confirm at least second-generation nativity and English proficiency. At the end of all three studies, I included a question that expressed the need for accurate data, and asked participants to indicate honestly if they might not fit the eligibility criteria. This clearly stated that they would be paid for having completed participation regardless of their response. Previous data collected on MTurk (Turner, Lucas, Kerns, and Greenberg, manuscript in progress)

had some success using this honesty screening method — a few participants selected the option indicating they were not part of the target population and in the study by mistake or for some other reason.

Analyses Overview

For each of the studies and pretests, I conducted tests of the differences of means or proportions across the experimental conditions to ensure there were no problematic differences in demographic variables (e.g., notably more women in one condition than the others). For continuous variables, these were one-way ANOVAs, and for indicator variables, these were chi-square tests. I created condition indicator variables to assess differences between them, and used post-regression estimation contrast tests of differences of means or proportions (*test* in *Stata* v.13). If there were statistically significant differences for one or more variables, I assessed models that control for these variables statistically. Differences approaching statistical significance were considered as well. Also, demographic variables such as education level and social class are treated as continuous analysis.

Directional tests accommodated one-tailed tests where possible, and otherwise, less conservative criteria were used to account for the predictions. For example, because the *F*-distribution used in post-regression estimation tests is one-sided, *p*-values in the direction predicted were evaluated at the 0.10 significance level to approximate the results that would have been obtained with a one-tailed t-test of the difference of means at the 0.05 level (e.g., Lakens 2016).

Because chi-square tests do not accommodate control variables, sometimes indicator variables were treated as means and assessed with controls using ANOVA. The post-estimation method following regression models allows for control variables in the estimation regression.

The criteria for statistical tests are as follows:

Differences of means/proportions and coefficients for these differences:

- t- and z-tests were evaluated as one-tailed if in the direction predicted/expected/assumed (hereafter predicted), with the two-tailed p-value divided in half, and the threshold for statistical significance was <0.05
- t-tests were evaluated as two-tailed if opposite of the direction predicted or no prediction, and the threshold for statistical significance is <0.05
- For both one- and two-tailed t-tests, p<0.10 approaches statistical significance

Differences in proportions across conditions (indicator variables), difference in status coefficients by threat:

- chi square tests were evaluated at <0.10 if in the direction predicted. For these, <0.20 approaches statistical significance
- chi square tests were evaluated at <0.05 if opposite of the direction predicted or no prediction. For these, <0.10 approaches statistical significance

Post-estimation difference of regression margins, one-way ANOVA:

- F-tests comparing two means or margins were evaluated with the threshold <0.10 if in the direction predicted. For these, <0.20 approaches statistical significance
- F-tests were evaluated with threshold <0.05 if opposite of the direction predicted or no prediction (e.g., whether means vary across conditions, a one-way ANOVA). For these, <0.10 approaches statistical significance

To test whether Americans or Indians are more responsive to threat in Study 1, I evaluated the interaction term between low status and threat in linear regression models (all outcomes were continuous). These results are interpretable as whether threat has a greater effect on ingroup prosociality for Americans or Indians. For Study 2 and Study 3, I evaluated the difference in status coefficients between the threat conditions using the

suest procedure in *Stata*. The *suest* procedure in *Stata* allows us to assess whether coefficients differ significantly across two different models. In Study 2 and Study 3, these results are interpretable as whether the status effect is amplified by threat (i.e., whether the threat model has a statistically larger status coefficient than the non-threat model does).

In the event a variable was dropped from a model (e.g., due to colinearity), results were presented for the remaining model. For variables that have unanimous responses, and therefore uniform responses across conditions, analyses including control variables were not conducted. For example, this was the case when all participants in the final balanced Study 2 sample indicated that they would be interested in participating in a future study.

The analyses presented sometimes only highlight the most theoretically relevant results, such as a single interaction term or coefficient from a larger model. Providing thorough detail about all of the statistical results would not be feasible without an extremely long appendix. Further information about statistical results, including full regression models, control-adjusted means and proportions, and variables used to construct scales are available from the author upon request.

Though some variables were recoded or otherwise arithmetically manipulated to create summary measures, for ease of interpretation, no variables are transformed to increase normality for statistical analyses.

For the tables presenting results, some include standard notation to indicate the level of statistical significance. When this notation is included, it considers the significance criteria established above (that include both one- and two-sided statistical

distributions), and follows these conventions: † for $p < 0.10$ or equivalent; * for $p < 0.05$ or equivalent; ** for $p < 0.01$ or equivalent; *** for $p < 0.001$. Some tables also include gray shading of cells to indicate when results are opposite of the predicted pattern. Standard deviations are not provided for indicator variables, so these cells are left blank.

Summary

This chapter provided a brief overview of the methods to be used in the main studies, cultural representation considerations, details about threat manipulation pretesting, information about data used in the studies, analyses, and statistical significance criteria for statistical tests.

Chapter 3: Study 1 Methods, Data, and Analyses (Holistic versus Analytic Social and Cognitive Orientations)

In this chapter, I describe the methods, data, and analyses for Study 1, on holistic versus analytic social and cognitive orientations. I include related constructs that reflect ingroup prosocial cognitive and social orientations as well.

I begin my presentation of Study 1 results by assessing my initial assumptions that members of individualistic societies experience more threat and that they tend to be ingroup prosocial. I predict more holistic, or collectivistic, cognitive and social orientations under threat (Prediction 1), and that Americans will be more responsive to threats than Indians (Prediction 2A). However, alternatively, Indians could be more responsive to threats than Americans (Prediction 2B).

The study was presented as about social situations and survey responses to prevent suspicion about its true purpose. The questionnaire took about 45 minutes to complete and paid $4.25 via MTurk. Participants within each sample (U.S. and India) were randomly assigned to one of the three threat conditions using randomization within Qualtrics.

Preliminary questions screened for eligibility and asked about perception of the country's society and the relative importance of social groups. Social groups addressed were one's country, family group, and workplace group. Country self-concept was also included, because it was the reference group for the threat manipulation. Four questions were designed to reflect the collectivism versus individualism and tightness versus looseness concepts discussed in the literature review. These questions asked about the

country's society valuing people as part of social groups compared to as individuals, and how strict or lenient the country is about social norms. The series of questions about social group importance allowed for comparison before and after the threat manipulation, and the cultural questions allowed for theoretically relevant explanatory variables in some of the regression models.

Study 1 Threat Manipulations

Each participant received either a threatening or non-threatening social situation, representing the threat and control manipulations, respectively. The participant's country was the reference group, with high risk of either natural disaster or terrorist attack as the threatening situation. Simply imagining being a citizen of one's country was the control situation. The language between the countries and threat conditions was identical, except the threat conditions included a middle section with additional detail specific to the threat. The language for each condition's situation is as follows:

[Control situation]

> *Consider your country as one of your social groups, where you are a citizen.*
>
> *Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.*

[Natural disaster threat]

> *Consider your country as one of your social groups, where you are a citizen.*

Imagine your country has a high risk of experiencing a natural disaster. Examples include earthquake, hurricane, flood, and tsunami. Experiencing a natural disaster would threaten your country.

Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.

[Terrorism threat]

Consider your country as one of your social groups, where you are a citizen.

Imagine your country has a high risk of experiencing a terrorist attack from another group. Examples include bombing, airplane hijacking, shooting, and cyber attack. Experiencing a terrorist attack from another group would threaten your country.

Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.

I then asked for written responses to focused questions about the situation. I required at least 100 characters in their own words to maximize their engagement. Originality was specified as a requirement for these responses because some participants (especially from India) plagiarized their responses from internet sources. I address this in more detail in the Study 1 Discussion in Chapter 4. These guided thinking questions are as follows:

What do you think about this experience generally?
What do you think this experience would be like for you personally?
How would you feel about this experience?

The questions were in boldface font to draw attention to how they differed from the previous item with just the manipulation text and from each other.

Consistent with the terror management literature (e.g., Greenberg et al. 2000), I included a distraction task immediately following the threat manipulation, which I used as an opportunity to address the demographic questions. Greenberg et al. (2000) found that worldview defense was strongest after an opportunity for suppression of death-related thoughts (a distracting task being the opportunity), while emotional responses tended to be strongest immediately following the mortality salience manipulation. Because ingroup prosociality more strongly reflects worldview defense, I included a distracting task after the manipulation in Study 1.

Study 1 Outcome Measures

See Appendix 1 for protocol information and exact wording of questions asked. As outcome measures for Study 1, I assessed holism as well as several other constructs that reflect relevant ingroup prosocial cognitive and social orientations. I measured holistic versus analytic cognitive orientation using the Analysis-Holism Scale (Choi et al. 2007). Choi et al.'s (2007) measure includes causality, attitude toward contradictions, perception of change, and locus of attention dimensions. An example question from the locus of attention dimension is extent of agreement with "It is more important to pay attention to the whole than its parts" (Choi et al. 2007). I also measured social orientation using items Lucas and Schooler (2012, unpublished) based on Schooler's (1990) conceptualization of individualism versus group-orientation. An example question from Lucas and Schooler (2012, unpublished) based on Schooler (1990) is extent of agreement with "Feeling accepted, interdependent, and interconnected with the social groups that are important to me is more important than feeling autonomous and self-directed as an

individual." I also used measures of individualism and collectivism as horizontal (emphasizing equality) and vertical (accepting inequality) dimensions defined by Singelis, Triandis, Bhawuk, and Gelfand (1995, also as cited in Triandis and Gelfand 1998). Triandis and Gelfand (1998) demonstrated that these horizontal and vertical individualism and collectivism constructs apply not only to individuals in the United States (citing Singelis et al. 1995), but also to those in Korea. An example question from Singelis et al. 1995 (also in Triandis and Gelfand 1998) from the horizontal (non-status-differentiated) dimension is "To me, pleasure is spending time with others."

If threatened individuals exhibit higher levels of holism and relational orientations, this would support Prediction 1. If these differences are greater for Americans than Indians, they would support Prediction 2A; if they are greater for Indians than Americans, they would support 2B.

To test the validity of the threat manipulations, all participants were asked a series of questions about how threatened they feel, both personally and in terms of their country. These questions are based on the highly reliable indices developed in pretesting (Chronbach's $\alpha > 0.90$).

Control variables (e.g., demographics) are used for control and counter-factual analyses (see Analyses section). See Appendix 1 for a list of control and outcome measures included in the Study 1 analyses.

Study 1 Methods Continued

Before debriefing, participants were provided an opportunity to admit to not being eligible for the study without consequences for payment. Participants were then

debriefed. Provided they were otherwise determined eligible (see screening information above) and participation was satisfactory, they were paid via MTurk.

Study 1 Data

My final data include 328 cases, with 54-55 in each experimental condition. The conditions are defined by country (United States or India) and threat condition (no threat, natural disaster, and terrorism). I excluded data if I determined they were likely to be of poor quality (e.g., not paying adequate attention) or ineligible in the first place. However, unlike Study 2 and 3 (which were deception studies), I do not exclude participants based on indicating suspicion about the purpose of the study or that it somehow affected behavior. While the Turkitron eligibility screening system was largely effective, inconsistent MTurk ID entry and potentially Turkitron system itself resulted in imperfect implementation. However, this is not known to affect more than a trivial number of cases in the final Study 1 sample.

Assessment of the Samples

With 54-55 cases in each experimental condition, the condition counts are very close for comparison. Even if counts were notably uneven (as is possible when there are missing data points), because there are no crosses or combinations of Study 1 conditions, this would not be an issue. In other words, analyses only test one threat manipulation at a time, and do not collapse the threat conditions. By comparison, for Study 2 and Study 3, some analyses collapse status and threat conditions across threat and status conditions, respectively.

I observed several differences in demographics and initial attitudes between my experimental condition groups. In theory, random assignment should have evened most of these out. There were also a few more differences between the countries than I expected. Because of my concern about confounding variables, I carefully examined control models that attempt to further isolate the effects of my experimental variables. All of these statistical comparisons are two-tailed.

Table 1A. Study 1 Demographic, Cultural, and Data Quality Variables: United States

United States	**CONDITION 1 (No threat, control)**		**CONDITION 2 (Natural disaster threat)**		**CONDITION 3 (Terrorism threat)**	
Demographic, Cultural, and Data Quality Variables	mean	sd, n	mean	sd, n	mean	sd, n
Country importance (pre-manipulation)	**5.815**	1.290 54	**5.418**	1.572 55	**5.870**	1.441 54
Country self-concept (pre-manipulation)	**42.702**	10.695 47	**41.264**	11.832 53	**44.058**	10.418 52
Workplace group importance (pre-manipulation)	**5.019**	1.631 54	**4.855**	1.649 55	**5.333**	1.614 54
Highest education in household	**6.481**	1.041 54	**6.185**	1.402 54	**6.352**	1.031 54
How often use MTurk to make basic ends meet	**4.611**	2.105 54	**4.818**	2.019 55	**4.113**	1.997 53
Highest education in household	**4.296**	1.733 54	**3.982**	1.284 55	**3.962**	1.270 53
Social class rating	**2.778**	1.110 54	**2.473**	1.016 55	**2.778**	1.076 54
Country values groups' interests (collectivism)	**5.094**	1.114 53	**4.564**	1.450 55	**4.963**	1.387 54
Country has strict norms (tightness)	**4.148**	1.642 54	**4.436**	1.653 55	**4.111**	1.436 54
Country values individuals' interests (individualism)	**4.000**	1.401 53	**3.780**	1.516 50	**3.981**	1.152 53
Country tolerant of deviants (looseness)	**3.060**	1.114	**3.021**	1.132	**3.288**	1.242

		50		47		52
Number attention check questions correct	**2.926**	0.264 54	**2.945**	0.229 55	**2.870**	0.391 54
Self-reported estimate of time to complete in minutes (recoded)	**36.906**	13.583 53	**35.315**	13.027 54	**41.667**	15.136 54
Gender	**0.481**	0.504 54	**0.564**	0.501 55	**0.370**	0.487 54
Age in years	**35.000**	9.871 54	**35.891**	10.232 55	**34.222**	10.084 54
Racial/ethnic minority indicator (relative to country)	**0.111**	0.317 54	**0.164**	0.373 55	**0.296**	0.461 54

United States	**CONDITION 1 (No threat, control)**		**CONDITION 2 (Natural disaster threat)**		**CONDITION 3 (Terrorism threat)**	
Demographic, Cultural, and Data Quality Variables	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Country importance (pre-manipulation)	5.815	1.290 54	5.418	1.572 55	5.870	1.441 54
Country self-concept (pre-manipulation)	42.702	10.695 47	41.264	11.832 53	44.058	10.418 52
Workplace group importance (pre-manipulation)	5.019	1.631 54	4.855	1.649 55	5.333	1.614 54
Highest education in household	6.481	1.041 54	6.185	1.402 54	6.352	1.031 54
How often use MTurk to make basic ends meet	4.611	2.105 54	4.818	2.019 55	4.113	1.997 53
Highest education in household	4.296	1.733 54	3.982	1.284 55	3.962	1.270 53
Social class rating	2.778	1.110 54	2.473	1.016 55	2.778	1.076 54
Country values groups' interests (collectivism)	5.094	1.114 53	4.564	1.450 55	4.963	1.387 54
Country has strict norms (tightness)	4.148	1.642 54	4.436	1.653 55	4.111	1.436 54
Country values individuals' interests (individualism)	4.000	1.401 53	3.780	1.516 50	3.981	1.152 53
Country tolerant of deviants (looseness)	3.060	1.114 50	3.021	1.132 47	3.288	1.242 52
Number attention check questions correct	2.926	0.264 54	2.945	0.229 55	2.870	0.391 54
Self-reported estimate of time to complete in minutes (recoded)	36.906	13.583 53	35.315	13.027 54	41.667	15.136 54
Gender	0.481	54	0.564	55	0.370	54
Age in years	35.000	9.871 54	35.891	10.232 55	34.222	10.084 54
Racial/ethnic minority indicator (relative to country)	0.111	54	0.164	55	0.296	54

Table 1B. Study 1 Demographic, Cultural, and Data Quality Variables: India

India	CONDITION 1 (No threat, control)		CONDITION 2 (Natural disaster threat)		CONDITION 3 (Terrorism threat)	
Demographic, Cultural, and Data Quality Variables	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Country importance (pre-manipulation)	6.648	0.756 54	6.727	0.706 55	6.600	1.082 55
Country self-concept (pre-manipulation)	50.736	5.725 53	50.260	7.716 50	50.491	6.132 53
Workplace group importance (pre-manipulation)	6.296	0.690 54	6.364	0.910 55	6.327	0.668 55
Highest education in household	6.630	0.808 54	6.873	0.388 55	6.709	0.533 55
How often use MTurk to make basic ends meet	4.907	1.964 54	4.655	2.048 55	4.800	2.031 55
Highest education in household	5.778	1.223 54	5.709	1.149 55	5.818	1.249 55
Social class rating	3.907	0.917 54	4.036	0.693 55	3.855	0.803 55
Country values groups' interests (collectivism)	5.926	0.843 54	5.764	1.201 55	5.782	0.937 55
Country has strict norms (tightness)	5.556	1.160 54	5.564	1.371 55	5.255	1.250 55
Country values individuals' interests (individualism)	4.538	1.244 52	4.442	1.320 52	4.353	1.128 51
Country tolerant of deviants (looseness)	3.220	1.360 50	3.311	1.490 45	3.646	1.313 48
Number attention check questions correct	2.722	0.529 54	2.818	0.434 55	2.836	0.420 55
Self-reported estimate of time to complete in minutes (recoded)	47.937	21.055 54	51.039	23.761 53	61.109	31.971 55
Gender	0.759	54	0.667	54	0.673	55
Age in years	30.278	8.155 54	31.389	6.358523 54	33.109	10.101 55
Racial/ethnic minority indicator (relative to country)	0.148	0.359 54	0.127	0.336 55	0.127	0.336 55

The following variables differ across conditions: **estimate of time it took to participate**, such that those in the terrorism condition report taking the longest (F-test across all conditions for both countries, F = 5.510, $p = 0.004$; t-tests for both countries between control condition and natural disaster, $t = -2.876$, $p = 0.004$, and natural disaster and terrorism, $t = -2.571$, $p = 0.011$; for the U.S. overall F-test F = 3.030, $p = 0.051$, control and natural disaster $t = -1.711$ $p = 0.090$, control and terrorism $t = -2.337$ $p = 0.021$; for the India overall F-test F = 3.808 $p = 0.024$, control and terrorism $t = -2.535$, $p = 0.013$, natural disaster and terrorism $t = -1.852$, $p = 0.067$), **rating of one's country promoting groups' interests**, such that those in the control conditions rate this highest (control and natural disaster conditions for both countries, $t = 2.026$, $p = 0.044$; control and natural disaster conditions for the U.S. only, $t = 2.127$, $p = 0.036$; and the F-test across all U.S. conditions approached statistical significance, $F = 2.356$, $p = 0.098$), **gender**, such that there are more men in the natural disaster condition (for the U.S. comparison of natural disaster and terrorism, chi square = 4.03, $p = 0.045$), **rated importance of one's family group**, such that Indians in the control and natural disaster conditions rate this highest (for India control and natural disaster $t = -1.997$, $p = 0.049$, and for natural disaster and terrorism $t = 1.841$, $p = 0.069$), **frequency of using MTurk to make basic ends meet**, such that those in natural disaster report more of this (for the U.S. natural disaster and terrorism, $t = 1.824$, $p = 0.071$), and **racial/ethnic minority group indicated**, such that there are more minorities in terrorism (for the U.S. comparison of proportions across all conditions, chi square = 6.392, $p = 0.041$, and comparing the U.S. control and terrorism conditions, chi square = 5.34, $p = 0.021$).

The following variables differ across countries (for all conditions unless otherwise specified — several also varied when only comparing the control conditions): **gender** such that there are more men among Indians (z = -4.160, p <0.001, consistent with Ross et al. 2010), **highest education in household** such that Indians reported more education (t = -11.478, p <0.001, consistent with Ross et al. 2010), **social class** such that Indians rate themselves higher in social class (t = -11.990, p <0.001), **time estimate** such that Indians report taking longer in the study (t = -6.543, p >0.001), **attention score** such that Indians miss more attention check questions (t = 2.810, p =0.005), and **age in years**, such that Indians are younger (t = 3.362, p = 0.001). While the difference between Indians and Americans for reported frequency of using MTurk earnings to make basic ends meet is in the direction expected based on Ross et al. (2010), such that Indians do this more often, it is not statistically significant (all conditions, t = -1.194, p = 0.234). This result does not statistically support this cross-cultural socioeconomic expectation.

Initial Cross-cultural Assumptions about Pre-manipulation Attitudes and Perceptions

These cross-cultural comparisons are two-tailed and for all conditions. Several also vary when only comparing the control conditions. The following variables differ across countries in the expected direction: **Compared to Americans, Indians indicated that the following groups are more important to them: country** (t = -7.286, p <0.001), their **country in terms of self-concept** (t = -7.579, p <0.001), their **workplace group** (t = -8.790, p <0.001), and their **family group** (t = -3.854, p <0.001). **Indians** also report that their **country promotes the interests of groups more so** (t = -7.269, p <0.001), their **country is more strict toward those who break norms** (t = -7.739, p <0.001), their

country promotes the interests of individuals less so (t = -3.558, p <0.001), and that their **country tolerates those who break norms less so** (t = -1.757, p = 0.080).

The following cross-cultural comparisons are inconsistent with the initial assumptions: **country promoting individuals' interests** (more so for Indians, t = -3.558, p <0.001 two-tailed), and the comparison approached significance for **country tolerance of deviance** (more so for Indians, t = -1.757, p = 0.080 two-tailed).

Two data quality measures varied significantly cross-culturally, despite data quality screening efforts: **attention check question score** (such that Americans score higher, t = 2.810, p = 0.005 two-tailed) and **self-reported completion time estimate** (such that Indians report taking longer, t = -6.543, p <0.001 two-tailed).

Data Acceptance and Quality

My final Study 1 data included 328 cases, with 54-55 in each experimental condition. As discussed above, I excluded data from the final sample if I determined they were likely to be of poor quality (e.g., not paying adequate attention) or ineligible in the first place. I had about the same rejection of data from paid cases across the United States and India (about 3% and about 2%, respectively), but I rejected proportionally more of the Indian submissions without pay (<1% and about 10%, respectively). Though no Study 1 cases were not rejected due to the participant indicating that suspicion about the purpose of the study affected their behavior, percentages indicating this are 3.67% for the full sample, 4.91% for Americans, and 2.44% for Indians.[7] These rates are relatively low

[7] It may be of interest to assess only participants indicating that suspicion affected behavior in future analyses.

considering the data rejection rates for the group studies, and that a reasonable data rejection rate is around 20% for group processes laboratory studies. Because there was no deception involved in Study 1, believability is not as much of a concern. Despite this, because accepted Indians still failed attention check questions at a higher rate, this could have somehow biased my results. I address analyses that control for some demographics and other variables in my results and discussion (Chapter 4).

Study 1 Analyses

Analyses for Study 1 use a combination of *Stata* statistical software and *SPSS*. The linear interaction term analyses especially use *SPSS*. The comparisons of demographics and outcome measures across conditions use difference of means tests and regression analyses for continuous measures as described in the Analyses Overview section in Chapter 2. When difference of means comparisons included control variables (Study 1 control models specified below), the coefficient of the experimental condition (country group or threat manipulation) within a linear regression model or a post-estimation test of differences of marginal means represents this statistical comparison. If main analyses are regression models, control variables were simply added for the analyses that include control variables.

To test my first initial assumption, that Indians experience higher levels of threat at baseline than Americans do, I compared the means of threat manipulation check scores for the control conditions across the two country groups. Differences of means that are statistically significant, such that Indians report higher levels of threat than Americans, would support my first initial assumption.

To test my second initial assumption, that Indians are more ingroup prosocial at baseline than Americans are, I compared the means of ingroup prosocial orientation outcome scores for the control conditions across the two country groups. Differences of means that are statistically significant, such that Indians express higher levels of ingroup prosociality than Americans, would support my second initial assumption.

To test Prediction 1, that threats increase ingroup prosocial orientations, within each country group, I tested for differences in means between the non-threat control condition and each of the respective threats (one comparison for natural disaster and another for terrorism). Differences of means that are statistically significant, such that the threat conditions have scores indicating greater ingroup prosociality, would support Prediction 1.

To test competing Predictions 2A and 2B, whether Americans or Indians exhibit stronger ingroup prosociality responses to threats, analyses assessed the linear interaction term between a country indicator (Indian) and threat condition indicator (either natural disaster or terrorism, tested separately against the control condition). If the interaction term is statistically significant in the direction indicating greater ingroup prosocial responses among Americans, this would support Prediction 2A (greater American responsiveness). If the ingroup prosociality outcome is such that high scores reflect more ingroup prosociality, a statistically significant interaction term that is negative would support Prediction 2A. Conversely, if the interaction term is statistically significant in the direction indicating greater ingroup prosocial responses among Indians, this would support Prediction 2B (greater Indian responsiveness). A statistically significant positive interaction term would support Prediction 2B if higher scores reflect greater ingroup

prosociality. Because of the competing predictions, no direction is assumed for these predictions — statistical tests are presented as two-tailed and no threshold adjustments are made for one-tailed distributions (e.g., *F* and chi-square).

Specific to Study 1, in comparing the American and Indian MTurk users, I assessed the ability of counter-factual modeling to isolate nationality effects on the ingroup prosociality outcomes (e.g., Gangl 2010). This can potentially assess how individuals with demographic characteristics consistent with their true nationality would respond if only their nationality differed. These are worthwhile analyses to examine because it is not practical to randomly assign participants to collectivistic versus individualistic types of societies. In the counter-factual analyses, I used the Oaxaca-Blinder linear decomposition technique in *Stata* (findit *oaxaca*). These models test the statistical significance of three terms: (1) endowments, which represent characteristics of members of the respective groups, (2) coefficients, which represent the sole effect of group membership, and (3) the interaction between the endowments and characteristics (see Jann 2008 and Gangl 2010). Because these models test competing predictions 2A and 2B together, I present all of these statistical results as two-tailed.

Study 1 Control Models

I expressed concern concern that the demographics and attitudes varying across conditions as described in the initial sample assessment could confound the results testing the main predictions. To address this, some of my analyses controlled for these potentially confounding variables. To preserve the validity of the cross-cultural analyses, I separated the control models into categories that distinguish whether the control variables differ by condition, and whether they explicitly relate to cultural differences

likely to reflect ingroup prosociality (e.g., importance of one's country). I specify these control models in detail below:

- **Uneven condition (UC):**
  - completion time estimate, frequency of using MTurk to make basic ends meet, gender, and racial/ethnic minority status
- **Uneven condition plus culture (UCC):**
  - UC variables plus: question about country promoting groups' interests and question about importance of family group (pre-manipulation)
- **Inconsistent and data quality between countries (IDQ):**
  - UC variables plus: question about country promoting individuals' interests and tolerance of those who break norms, and attention check score
- **Consistent between countries (CBC):**
  - UCC and IDQ variables plus: highest education in household, social class, age in years, importance of country and workplace groups, country self-concept, and question about country enforcing strict norms.[8]

Further, to examine how effects of these demographic and attitudinal measures may vary by country, cross-cultural models also included an interaction variant of the above CBC (Consistent between Countries) model. That is, in addition to a country main effect and main effects for each control variable, for each of these control variables there was an additional term with the country indicator (1 for India, 0 for the United States). This set of country-interaction controls is denoted as:

- **Consistent Between Countries Interaction (CBC-I)**.
  - CBC variables plus interaction terms for each of these with a country indicator (1 for India, 0 for United States).

[8] Though social class was not addressed in Ross et al. 2010, including this variable may be considered culture-consistent is consistent with their finding that Indians reported higher levels of education than Americans (and as observed in the Study 1 data). However, in Ross et al. (2010), compared to Americans, Indians reported lower levels of income and using MTurk earnings to make basic ends meet.

The CBC-I model was included for tests of the initial cross-cultural assumptions, cross-cultural comparison of results across the control conditions, and the country and threat interaction models. It was not used in the counter-factual decomposition models, because including interaction terms between culture and demographic characteristics would be not appropriate — those models decompose model effects into endowments, coefficients, and interactions between endowments and coefficients. Where CBC-I could not be used because the outcome variable was included directly or indirectly as a predictor, a similar **IDQ-I model** was substituted (and this substitution is noted when relevant). In the event the statistical software excluded any control variables due to colinearity, results from the remaining model were presented.

Chapter 4: Study 1 Results and Discussion

This chapter presents and discusses the results from Study 1, on holism and other related ingroup prosocial cognitive and social orientations.

Results somewhat support Prediction 1, and they suggest that terrorism is a more effective threat manipulation than natural disaster for both Americans and Indians. While there is potential evidence of cross-cultural differences in threat responses, and results suggest that Prediction 2A (greater American response) is supported more so than Prediction 2B (greater Indian response), the ability to draw cross-cultural conclusions is limited. Especially considering some results in the opposite direction predicted for Indians, I discuss the possibility that the observed results reflect self-serving motivations more so than the ingroup-prosocial ones originally proposed.

Study 1 models including control variables follow below. See Chapter 3 for more information about these variables.

- **Uneven condition (UC):**
  - completion time estimate, frequency of using MTurk to make basic ends meet, gender, and racial/ethnic minority status
- **Uneven condition plus culture (UCC):**
  - UC variables plus: question about country promoting groups' interests and question about importance of family group (pre-manipulation)
- **Inconsistent and data quality between countries (IDQ):**
  - UC variables plus: questions about country promoting individuals' interests and tolerance of those who break norms, and attention check score
- **Consistent between countries (CBC):**
  - UCC and IDQ variables plus: highest education in household, social class, age in years, importance of country and workplace groups, country self-concept, and question about country enforcing strict norms.

- **Consistent Between Countries Interaction (CBC-I)**.
  - CBC variables plus: interaction terms for each of these with a country indicator (1 for India, 0 for United States).

As noted in Chapter 4, where CBC-I cannot be used because the outcome variable is included directly or indirectly as a predictor, a similar **IDQ-I model** was used as a substitute (and this substitution is noted when relevant). In the event the statistical software excludes any of these variables due to colinearity, results from the remaining model were presented.

Initial Assumptions

I first address two initial assumptions about cross-cultural differences in experiences of threat and ingroup prosociality. My first initial assumption is that Indians feel and experience more baseline threat than Americans. These comparisons between Indians and Americans in the control conditions unexpectedly suggest that Americans feel more threatened than Indians do at baseline.

Table 2. Cross-cultural Comparisons across Control Conditions

Cross-cultural comparisons across control conditions	Americans (control)			Indians (control)		
Outcome	mean	sd	n	mean	sd	n
Country importance (pre-manipulation)	**5.815*** **	1.290	54	**6.648*** **	0.756	54
Country self-concept (pre-manipulation)	**42.702*** **	10.695	47	**50.736*** **	5.725	53
Workplace group importance (pre-manipulation)	**5.019*** **	1.631	54	**6.296*** **	0.690	54
Family group importance (pre-manipulation)	6.481	1.041	54	6.630	0.808	54
Country values groups' interests (collectivism)	**5.094*** **	1.114	53	**5.926*** **	0.843	54
Country has strict norms (tightness)	**4.148*** **	1.642	54	**5.556*** **	1.160	54
Country values individuals' interests (individualism)	**4.000***	1.401	53	**4.538***	1.244	52
Country tolerant of deviants (looseness)	3.060	1.114	50	3.220	1.360	50
Causality component of analysm-holism (scale)	**31.189***	6.023	53	**33.404***	5.661	52
Attitude toward contradictions component of analysm-holism (scale)	31.462	5.443	52	31.096	5.825	52
Perception of change component of analysm-holism (scale)	**27.827***	5.823	52	**24.704***	6.790	54
Locus of attention component of analysm-holism (scale)	**28.778****	5.929	54	**32.462****	5.829	52
Combined holism scale (without perception of change)	**91.373***	11.449	51	**96.959***	12.462	49
Group orientedness scale	**12.679*** **	3.304	53	**15.255*** **	3.676	51
Individual orientedness Q: consequences to self versus group	4.778	1.462	54	5.056	1.433	54
Individual orientedness Q: freedom versus conformity	5.463	1.328	54	5.296	1.550	54
Individual orientedness Q: whether social groups can be morally good or bad	**2.963*** **	1.791	54	**4.566*** **	1.927	53
Independence scale	75.000	9.659	52	78.260	11.547	50
Interdependence scale	**69.479*** **	12.973	48	**81.569*** **	11.751	51
Difference between interdependence and independence scales	**6.632****	15.890	47	**-2.875****	11.429	48
Horizontal individualism scale	28.250	4.677	52	29.500	5.337	54
Vertical individualism scale	**20.185*** **	6.642	54	**24.472*** **	4.614	53
Horizontal collectivism scale	**25.528*** **	5.535	53	**29.759*** **	4.601	54
Vertical collectivism scale	**26.074*** **	4.902	54	**30.537*** **	4.705	54
Combined individualism scale	**48.288*** **	9.461	52	**54.943*** **	8.308	53
Combined collectivism scale	**51.547*** **	9.168	53	**60.296*** **	8.282	54
Country importance (post-manipulation)	**5.741*** **	1.443	54	**6.704*** **	0.743	54
Change in country importance (pre- to post-manipulation)	**-0.074†**	0.610	54	**0.056†**	0.302	54
Workplace group importance (post-manipulation)	**5.000*** **	1.602	54	**6.204*** **	1.016	54
Change in workplace group importance (pre- to post-manipulation)	-0.019	0.765	54	-0.093	0.680	54

Cross-cultural comparisons across control conditions	Americans (control)			Indians (control)		
Outcome	**mean**	**sd**	**n**	**mean**	**sd**	**n**
Family group importance (post-manipulation)	**6.481***	1.077	54	**6.815***	0.479	54
Change in family group importance (pre- to post-manipulation)	**0.000***	0.389	54	**0.185***	0.675	54
Country self-concept (post-manipulation)	**42.642*****	10.762	53	**50.885*****	6.691	52
Change in country self-concept (pre- to post-manipulation)	-0.404	2.551	47	0.333	3.309	51
Feel personally threatened (scale)	26.020	15.914	51	24.612	13.135	49
Feel country threatened (scale)	**37.283***	12.235	53	**31.846***	14.075	52
Feel threatened for country (Q)	**4.509****	1.660	53	**3.442****	2.014	52
Situation personally threatening (Q)	2.315	1.527	54	2.278	1.595	54
Situation threatening to country (Q)	2.685	1.882	54	2.648	1.885	54

Results for the **feeling group (country) threatened scale** and the specific **question about feeling one's country is threatened** were both statistically significant in the opposite direction predicted ($t = 2.114$, $p = 0.037$ and 2.960, $p = 0.004$, respectively, both two-tailed). Results were not statistically significant, though in the opposite direction predicted for the feeling threatened personally scale and for two manipulation check questions, how threatening the participant rates the situation personally and to their country, respectively ($t = 0.481$, $p = 0.631$; $t = 0.123$, $p = 0.902$; $t = 0.102$, $p = 0.912$, respectively, all two-tailed). When controlling for culture-related variables (the UCC, CBC, and CBC-I models), statistical support for these findings tends to decrease (in both directions). Notably, the result for **feeling personally threatened in the CBC-I model** becomes statistically significant in the direction predicted, such that Indians feel more threatened at baseline ($t = 2.521$, $p = 0.015$). In the UC and IDQ models for the feeling country threatened scale, the country effect only approaches statistical significance ($t = -1.714$, $p = 0.090$ and $t = 3.039$, $p = 0.056$, respectively, both two-tailed).

These results suggest some support opposing the predicted pattern — rather than Indians feeling more threatened at baseline, Americans tend to feel more threatened at baseline, though not in the CBC-I control models. I discuss these comparisons as baseline comparisons because I only consider participants in the nonthreatening control conditions. From this, we can infer how Americans and Indians tend to feel in the absence of threat. Only when controlling for the cultural variables and interactions with country (India indicator) in the CBC-I model did Indians express feeling more threatened personally. This result is consistent with cultural variables explaining why Indians feel more threatened, but the other models we would expect to also provide statistical support do not (UCC and CBC). Therefore we cannot assume that Indians tend to feel more threatened personally or at the group level (country as the group in Study 1). The questions focusing on the threat manipulations examine how Indians and Americans respond to these manipulations in terms of feeling threatened, and yield similarly non-supporting results.

On the whole, these results do not support my first initial assumption. Below I address my second initial assumption, that Indians exhibit more ingroup prosociality than Americans at baseline (i.e., in the control conditions).

My second initial assumption is that Indians exhibit more baseline ingroup-prosociality than Americans. Though many results support this second initial assumption, I find mixed evidence. There is statistical support that Indians tend to be more ingroup prosocial, but also statistical support for Indians being less ingroup prosocial in some ways. Most of these results in the opposite direction predicted relate to attitudes about individualism and individual-orientedness. While the initial assumption about higher

baseline ingroup prosociality levels among Indians warrants some amount of reconsideration, it is plausible that Indians tend to express stronger social attitudes than Americans do.[9] As in the results testing the first initial assumption, when controlling for culture-related variables (the UCC, CBC, and CBC-I models), statistical support for these findings also tends to diminish (in both directions). For measures taken before the threat manipulation, comparisons include all conditions. For measures taken after the threat manipulation, comparisons only include the control conditions.

I first evaluate general cohesion and ingroup importance measures taken before the threat manipulation. As outlined above, compared to Americans, **Indians indicated that their country is more important** to them (t = -7.286, p <0.001), their **country is more important to their self-concept** (t = -7.579, p <0.001), their **workplace group is more importan**t to them (t = -8.790, p <0.001), and that their **family group is more important** to them (t = -3.854, p <0.001).[10] The control models supporting this conclusion for country importance and overall country self-concept were consistent with the above findings, and for the workplace importance and family importance outcomes, control model findings were consistent for all except the CBC-I models. For workplace importance and family importance, the CBC-I model no longer reached statistical significance, though remained in the direction predicted (t = 1.545, p = 0.303 and t = 1.147, p = 0.296, respectively). Also as above, many control model results were in the direction predicted, and some were supported statistically.

For the cultural perception measures taken before the threat manipulation, results are mixed, but perhaps suggest that Indians tend to express stronger attitudes than

[9] See discussion of satisficing and acquiescence below (e.g., Krosnick 1991).
[10] This comparison is not statistically significant for the control conditions only (t = -0.826, p = 0.210).

Americans do. While **Indians** express more so than Americans that their **country promotes groups' interests over individuals' interests** (t = -7.269, p<0.001) and that their **country has strict norms** (t = -7.739, p<0.001) as expected, unexpectedly the **Indians** also expressed more so that their country **promotes individuals' interests more so than groups' interests** (t = -3.558, p <0.001, two-tailed) and the result approaches statistical significance for rating that their **country is tolerant of those who break cultural norms** (t = -1.757, p = 0.080, two-tailed).[11] For the tolerant of breaking cultural norms measure, results in the UC control model only approach statistical significance (t = 1.743, p = 0.082, two-tailed), and the result in the UCC control model does not approach statistical significance (t = 0.772, p = 0.442). These measures, in order, are consistent with collectivism, tightness, individualism, and looseness, respectively.

I then evaluate this second initial assumption in terms of the ingroup prosocial orientations tested in Study 1. These comparisons only include control conditions. Ingroup prosociality outcomes that were statistically significant in the direction predicted were the **causality dimension of holism** (t = -1.941, p = 0.028), the **locus of attention dimension of holism** (t = -3.224, p = 0.001), the **overall holism scale** (excluding perception of change) (t = -2.336, p = 0.011), **group orientedness** (t = -3.761, p <0.001), **interdependence** (t = -4.864, p <0.001), **difference between independence and interdependence** (t = 3.258, p = 0.001), **horizontal collectivism** (t = -4.303, p <0.001), **vertical collectivism** (t = -4.826, p <0.001), **combined horizontal and vertical collectivism** (t = -5.182, p <0.001), **post-manipulation country importance** (t = -4.360,

[11] This comparison is not statistically significant for the control conditions only (t = -0.160, p = 0.249, two-tailed). These control condition only results that include control variables also generally provide less statistical support for these conclusions.

p <0.001), **post-manipulation workplace group importance** (t = 04.662, p <0.001), **post-manipulation family group importance** (t = -2.078, p = 0.021), **change in family group importance pre- to post-manipulation** (t = -1.747, p = 0.042), and **post-manipulation overall country self-concept** (t = -4.723, p <0.001). **Change in country importance pre- to post-manipulation** approaches statistical significance in the direction predicted (t = -1.400, p = 0.083). Variables not statistically significant, though in the direction predicted are agreement with a statement reflecting individual-orientedness (versus group-orientedness), "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong," and change in country self-concept pre- to post-manipulation (t = 0.600, p = 0.275 and t = -1.228, p = 0.111, respectively).

While these results remain consistent for many of the control models, most control model changes decrease statistical support, especially for the models that include cultural attitudes and perceptions that were exhibited as predicted (UCC, CBC, and CBC-I models). With one exception, these models decrease statistical support for all results initially in the direction predicted.[12] The exception is **change in country self-concept**

[12] For the locus of attention dimension of holism, the CBC and CBC-I models are no longer statistically significant (and the CBC model is in the opposite direction expected; for the overall holism scale (excluding perception of change), the UCC, CBC, and CBC-I models are no longer statistically significant (and the CBC model is also in the opposite direction expected); for group orientedness the CBC model is no longer statistically significant; for the difference between independence and interdependence, the CBC and CBC-I models are no longer statistically significant; for horizontal collectivism the CBC model is no longer statistically significant; for vertical collectivism the CBC model is no longer statistically significant and the CBC-I model approaches statistical significance in the opposite direction expected (t = -1.996, p = 0.051); for combined collectivism the CBC and CBC-I models are no longer statistically significant (and the CBC-I model is in the opposite direction expected); for post-manipulation country importance, the CBC and CBC-I models are no longer statistically significant (and the CBC model is in the opposite direction expected); for change in country group importance, the UC and IDQ-I models no longer approach statistical significance; for post-manipulation workplace group importance the CBC model is no longer statistically significant (and is in the opposite direction expected); for post-manipulation family group importance the CBC-I model is no longer statistically significant; for pre-to-post-manipulation change in

pre- to post-manipulation, which is not statistically significant (though in the direction predicted), but approaches statistical significance in the IDQ-I model (t = 1.468, p = 0.074). Also of interest, **horizontal individualism** changes from not statistically significant in the opposite direction predicted to statistically significant in the direction predicted in the CBC-I model (t = -1.748, p = 0.043). This observation is not surprising because the UCC, CBC, and CBC-I models control for cultural attitudes and perceptions (e.g., pre-manipulation importance of country), which I propose reflect historical threat and in part explain increased ingroup prosociality among Indians. Changes for the other control models are minor, but perhaps notably, for change in country importance pre- to post-manipulation, the UC model support no longer approaches statistical significance (t = 1.263, p = 0.105), and in the IDQ model agreement with a statement reflecting individual-orientedness (same one as above) changes to the opposite direction predicted (t = 0.274, p = 0.785 two-tailed).

Ingroup prosociality outcomes that are statistically significant in the opposite direction predicted are for the **perception of change dimension of holism** (t = 2.258, p = 0.013, two-tailed), **agreement with a statement reflecting individual-orientedness**, "Only individuals, not social groups, can be morally good or bad" (t = -4.459, p < 0.001, two-tailed), **vertical individualism** (t = -4.773, p < 0.001, two-tailed), and **combined horizontal and vertical individualism** (t = -3.832, p <0.001, two-tailed). Several other outcomes are not statistically significant, though in the opposite direction predicted: the attitudes toward contradictions dimension of holism (t = 0.330, p = 0.742, two-tailed),

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family group importance the CBC-I model only approaches statistical significance (t = 1.459, p = 0.074); for post-manipulation overall country self-concept the CBC and CBC-I models are no longer statistically significant.

agreement with a statement reflecting individual-orientedness, "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (t = -0.997, p = 0.321, two-tailed), independence (t = -1.549, p = 0.125, two-tailed), horizontal individualism (t = -1.281, p = 0.203, two-tailed), and pre- to post-manipulation change in workplace group importance (t = 0.532, p = 0.596, two-tailed).

While many of these control model results remain consistent with the results that were initially in the opposite direction predicted, as in the supporting predictions above the UCC, CBC, and CBC-I models tend to decrease the statistical support for these conclusions. Perhaps notably, the results for agreement with a statement reflecting individual-orientedness (effect on one's social group) remain statistically significant across all control models. Notably, the UC model for independence becomes statistically significant (t = 2.013, p = 0.047, two-tailed), and approaches significance in the IDQ model (t = 1.715, p = 0.090, two-tailed). Also notably, the UC and IDQ models only approach statistical significance, along with the original result (t = -1.714, p = 0.090 and t = -1.941, p = 0.056, respectively, both two-tailed).

These results suggest that while there is some evidence for increased baseline ingroup prosociality among Indians compared to Americans, it is plausible that they tend to express stronger social attitudes, and control model results suggest these may be largely explained by cultural attitudes and perceptions. Because we only find some evidence supporting this initial assumption, we cannot assume that Indians generally express more ingroup prosociality. This does not impede interpretation of the tests of the main predictions, because they focus on effects of the experimental threat manipulations

within country groups, and in interaction with country as well as other variables. However, when addressing potential cross-cultural implications and returning to the proposed theoretical relationships between threats and ingroup prosociality, some of these results are inconsistent with the initial assumptions and warrant further consideration. These results also suggest that cultural variables as in the CBC control models may help to explain differences in threat responses that may arise.

Overall, these results somewhat support my second initial assumption, though there is some statistical support in the opposite direction.

Prediction 1: Threat Increases Ingroup Prosociality

Prediction 1 states that threats to groups increase ingroup prosociality. While both Americans and Indians experience increases in some ingroup prosociality outcomes, the exact outcomes differ, and Indians unexpectedly experience some decreases.

Prediction 1: United States

I compare outcomes for the nonthreatening control condition with the natural disaster and terrorism threat conditions, respectively. While statistical support is limited, terrorism is more effective than natural disaster in eliciting ingroup prosocial responses among Americans. A particularly notable outcome is support for the locus of attention dimension of holism in the terrorism condition, and how this remains consistent across the control models.

Table 3A: Study 1 Outcomes: United States

United States	CONDITION 1 (No threat, control)		CONDITION 2 (Natural disaster threat)		CONDITION 3 (Terrorism threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n
Causality component of analysm-holism (scale)	31.189	6.023 53	31.593	6.497 54	31.481	5.518 52
Attitude toward contradictions component of analysm-holism (scale)	31.462	5.443 52	31.444	6.139 54	32.154	5.876 52
Perception of change component of analysm-holism (scale)	27.827	5.823 52	29.074	5.959 54	26.961	6.283 51
Locus of attention component of analysm-holism (scale)	**28.778***	5.929 54	29.727	7.194 55	**31.094***	6.350 53
Combined holism scale (without perception of change)	**91.373†**	11.449 51	92.679	15.533 53	**95.200†**	12.010 50
Group orientedness scale	12.679	3.304 53	11.818	4.128 55	12.556	3.785 54
Individual orientedness Q: consequences to self versus group	4.778	1.462 54	4.873	1.528 55	4.811	1.468 53
Individual orientedness Q: freedom versus conformity	5.463	1.328 54	5.764	1.333 55	5.463	1.239 54
Individual orientedness Q: whether social groups can be morally good or bad	2.963	1.791 54	3.418	2.105 55	3.481	2.117 54
Independence scale	75.000	9.659 52	76.132	14.514 53	74.042	14.263 48
Interdependence scale	69.479	12.973 48	68.212	12.960 52	69.458	13.281 48
Difference between interdependence and independence scales	6.362	15.890 47	8.100	19.927 50	5.652	17.717 46
Horizontal individualism scale	28.250	4.677 52	28.642	5.263 53	28.549	5.420 51
Vertical individualism scale	20.185	6.642 54	18.925	6.263 53	19.148	7.587 54
Horizontal collectivism scale	25.528	5.535 53	25.691	6.224 55	25.755	6.142 53
Vertical collectivism scale	26.074	4.902 54	25.782	6.682 55	25.296	6.748 54
Combined individualism scale	48.288	9.461 52	47.373	8.660 51	47.294	9.938 51
Combined collectivism scale	51.547	9.168 53	51.473	11.646 55	51.000	11.103 53
Country importance (post-manipulation)	5.741	1.443 54	5.255	1.734 55	5.815	1.518 54
Change in country importance (pre- to post-manipulation)	-0.074	0.610 54	-0.164	0.462 55	-0.056	0.529 54
Workplace group importance (post-manipulation)	**5.000***	1.602 54	4.836	1.664 55	**5.519***	1.193 54
Change in workplace group importance (pre- to post-manipulation)	-0.019	0.765 54	-0.018	0.527 55	0.185	0.992 54
Family group importance (post-manipulation)	6.481	1.077 54	6.218	1.343 55	6.500	0.795 54
Change in family group importance (pre- to post-manipulation)	**0.000†**	0.389 54	0.019	0.307 54	**0.148†**	0.711 54

United States	CONDITION 1 (No threat, control)		CONDITION 2 (Natural disaster threat)		CONDITION 3 (Terrorism threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Country self-concept (post-manipulation)	42.642	10.762 53	40.120	12.790 50	44.453	10.941 53
Change in country self-concept (pre- to post-manipulation)	-0.404	2.551 47	-0.229	3.019 48	0.392	4.070 51
(Threat manipulation checks)						
Feel personally threatened (scale)	26.020	15.914 51	24.231	12.452 52	28.882	15.620 51
Feel country threatened (scale)	37.283	12.235 53	36.889	14.556 54	37.321	15.290 53
Feel threatened for country (Q)	4.509	1.660 53	4.455	1.844 55	4.463	1.910 54
Situation personally threatening (Q)	**2.315*****	1.527 54	**4.018*****	1.841 55	**4.667*****	1.801 54
Situation threatening to country (Q)	**2.685*****	1.882 54	**4.927*****	1.597 55	**5.222*****	1.880 54

Natural Disaster (U.S.)

Comparing Americans in the natural disaster condition with Americans in the control condition, none of the comparisons differ statistically on any of the ingroup prosociality outcome measures. Many patterns are in the direction predicted, while some are not. Results not statistically significant though in the direction predicted are the causality dimension of holism (t = -0.333, p = 0.370), perception of change dimension of holism (t = -1.089, p = 0.140), locus of attention dimension of holism (t = -0.751, p = 0.227), overall holism scale (excluding perception of change) (t = -0.490, p = 0.313), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (t = -0.331, p = 0.371), agreement with another statement reflecting individual-orientedness "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in

the social groups to which I belong" (t = -1.180, p = 0.121), vertical individualism (t = 1.010, p = 0.158), horizontal collectivism (t = -0.143, p = 0.443), combined individualism (t = 0.512, p = 0.305), pre- to post-manipulation change in workplace group importance (t = -0.003, p = 0.499), pre- to post-manipulation change in family group importance (t = -0.275, p = 0.392), and pre- to post-manipulation change in country self-concept (t = -0.305, p = 0.381).

Results not statistically significant, though in the opposite direction predicted (all two-tailed) are the attitudes toward contradictions dimension of holism (t = 0.015, p = 0.988), group-orientedness (t = 1.199, p = 0.233), agreement with a statement reflecting individual-orientedness "Only individuals, not social groups, can be morally good or bad" (t = -1.215, p = 0.227), independence (t = -0.471, p = 0.639), interdependence (t = -0.470, p = 0.640), difference between independence and interdependence (t = -0.473, p = 0.637), horizontal individualism (t = -0.403, p = 0.688), vertical collectivism (t = 0.261, p = 0.795), combined vertical and horizontal collectivism (t = 0.037, p = 0.971), post-manipulation country importance (t = 1.589, p = 0.115), pre- to post-manipulation change in country importance (t = 0.865, p = 0.389), post-manipulation workplace group importance (t = 0.523, p = 0.602), post-manipulation family group importance (t = 1.128, p = 0.262), and post-manipulation country self-concept (t = 1.085, p = 0.281).

Notably, in the control models, some of the natural disaster results for Americans approach statistical significance in the direction predicted. This is the case for the **causality dimension of holism** (CBC model, t = 1.541, p = 0.064), the **perception of change dimension of holism** (UCC model, t = 1.428, p = 0.079), **agreement with a statement reflecting individual-orientedness** "Freedom to think what I may think is

more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" (UC and UCC models, $t = 1.339$, $p = 0.092$ and $t = 1.506$, $p = 0.068$, respectively), **and combined horizontal and vertical collectivism** (CBC model, $t = 1.355$, $p = 0.090$).

In the control models, some of the results remain not statistically significant, though they change direction. Results that remain not statistically significant but change from opposite of the direction predicted to the direction predicted are for the attitudes toward contradictions dimension of holism (UC and UCC models), interdependence (UCC model), difference between independence and interdependence (UCC and CBC models), vertical collectivism (UCC and CBC models), combined horizontal and vertical collectivism (UC and UCC models), post-manipulation family group importance (UCC model), post-manipulation country self-concept (UCC model), and pre- to post- change in country self-concept (UCC and IDQ models).

Results that remain not statistically significant but change to the opposite direction predicted in control models were for the locus of attention dimension of holism (IDQ model), overall holism scale (excluding perception of change) (IDQ model), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (UCC and CBC models), horizontal collectivism (IDQ model), and pre-to-post-manipulation change in workplace group importance (UC, UCC, and IDQ models).

Terrorism (U.S.)

Comparing Americans in the natural disaster condition with Americans in the control condition, some results are statistically significant or approach statistical significance in the direction predicted. Results are statistically significant in the direction predicted for the **locus of attention dimension of holism** (t = -1.951, p = 0.027) and **post-manipulation importance of workplace group** (t = -1.907, p = 0.030). Results approach statistical significance for the **overall holism scale** (excluding perception of change) (t = -1.640, p = 0.052) and **pre-to-post-manipulation change in family group importance** (t = -1.343, p = 0.092).

As in the natural disaster results, some of the results that are not statistically significant or approaching statistical significance are in the direction predicted, while some are not. Results not statistically significant, though in the direction predicted are the causality dimension of holism (t = -0.259, p = 0.398), attitudes toward contradictions dimension of holism (t = -0.623, p = 0.267), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (t = -0.118, p = 0.453), independence (t = 0.390, p = 0.349), difference between independence and interdependence (t = 0.203, p = 0.420), vertical individualism (t = -0.756, p = 0.226), horizontal collectivism (t = -0.199, p = 0.421), combined individualism (t = 0.520, p = 0.302), post-manipulation country importance (t = -0.260, p = 0.398), pre-to-post-manipulation change in country importance (t = -0.169, p = 0.433), pre-to-post-manipulation change in workplace group importance (t = -1.195, p = 0.118),

post-manipulation family importance (t = -0.102, p = 0.460), post-manipulation country self-concept (t = -0.859, p = 0.196), and pre-to-post-manipulation change in country self-concept (t = -1.170, p = 0.123). One outcome did not differ in any direction between the control and threat conditions: agreement with a statement reflecting individual-orientedness "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" (t = 0.000, p = 1.000, two-tailed).

Results not statistically significant, though in the opposite direction predicted (all two-tailed) are the perception of change dimension of holism (t = 0.726, p = 0.470), group-orientedness (t = 0.180, p = 0.858), agreement with a statement reflecting individual-orientedness "Only individuals, not social groups, can be morally good or bad" (t = -1.374, p = 0.172), interdependence (t = 0.008, p = 0.994), horizontal individualism (t = -0.300, p = 0.765), vertical collectivism (t = 0.685, p = 0.495), and combined horizontal and vertical collectivism (t = 0.277, p = 0.783).

Notably, in the control models, some of the results become statistically significant in the direction predicted. This is the case for the **overall holism scale** (excluding perception of change) (UCC model, t = 1.694, p = 0.047) and the **pre-to-post-manipulation change in work group importance** (UC model, t = 1.952, p = 0.027). **Pre-to-post-manipulation change in work group importance** approaches statistical significance in the UCC and IDQ models (t = 1.623, and p = 0.054 and t =1.654, p = 0.051).

Some results lose statistical support in the control models. Outcomes that change from statistically significant to approaching statistical significance are the locus of

attention dimension of holism (IDQ model, $t = 1.611$, $p = 0.056$) and post-manipulation workplace group importance (UC, IDQ, and CBC models, $t = 1.494$, $p = 0.069$; $t = 1.344$, $p = 0.091$; and $t = 1.469$, $p = 0.073$, respectively). Some control models also change from approaching statistical significance to no longer approaching statistical significance. This is the case for the overall holism scale (excluding perception of change) (IDQ model) and the pre-to-post-manipulation change in family group importance (UC and IDQ models).

Prediction 1: India

For Indians there are some results in the direction predicted, but the most statistically notable ones are different than those that are statistically notable for Americans. In general, the terrorism manipulation appears most effective, as it does for the Americans, and Indians in the terrorism threat conditions tend to be less individualistic than those in the control condition. There are also some noteworthy results in the opposite direction predicted.

Table 3B: Study 1 Outcomes: India

India	CONDITION 1 (No threat, control)		CONDITION 2 (Natural disaster threat)		CONDITION 3 (Terrorism threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n
Causality component of analysm-holism (scale)	33.404	5.661 52	33.717	5.404 53	33.154	5.627 52
Attitude toward contradictions component of analysm-holism (scale)	31.096	5.825 52	31.333	5.759 54	30.907	4.779 54
Perception of change component of analysm-holism (scale)	24.704	6.790 54	26.314	6.580 51	24.604	6.218 53
Locus of attention component of analysm-holism (scale)	32.462	5.829 52	32.712	6.482 52	31.481	5.031 54
Combined holism scale (without	96.959	12.462	97.837	13.123	95.500	10.340

India	CONDITION 1 (No threat, control)		CONDITION 2 (Natural disaster threat)		CONDITION 3 (Terrorism threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n
perception of change)		49		49		50
		3.676		4.074		2.650
Group orientedness scale	15.255	51	14.961	51	15.870	54
Individual orientedness Q:		1.433		1.356		1.453
consequences to self versus group	5.056	54	5.109	55	5.036	55
Individual orientedness Q: freedom		1.550		1.311		1.218
versus conformity	5.296	54	5.200	55	5.370	54
Individual orientedness Q: whether		1.927		1.885		1.741
social groups can be morally good or bad	4.566†	53	4.036†	55	4.491	55
		11.547		11.123		11.687
Independence scale	78.260	50	79.625	48	76.135	52
		11.751		13.320		10.169
Interdependence scale	81.569	51	82.745	51	82.529	51
Difference between interdependence		11.429		13.376		10.356
and independence scales	-2.875*	48	-1.067	45	-6.918*	49
		5.337		5.740		5.777
Horizontal individualism scale	29.500*	54	28.382	55	27.611*	54
		4.614		6.809		5.448
Vertical individualism scale	25.472*	53	24.527	55	23.800*	55
		4.601		5.167		4.092
Horizontal collectivism scale	29.759	54	29.927	55	29.315	54
		4.705		5.316		3.875
Vertical collectivism scale	30.537	54	30.764	55	30.333	54
		8.308		9.740		9.688
Combined individualism scale	54.943*	53	52.909	55	51.352*	54
		8.282		9.724		7.256
Combined collectivism scale	60.296	54	60.691	55	59.648	54
Country importance (post-		0.743		0.712		1.136
manipulation)	6.704	54	6.722	54	6.527	55
Change in country importance (pre- to		0.302		0.336		0.325
post-manipulation)	0.056***	54	0.000	54	-0.073***	55
Workplace group importance (post-		1.016		1.069		0.732
manipulation)	6.204	54	6.309	55	6.273	55
Change in workplace group		0.680		0.780		0.299
importance (pre- to post- manipulation)	-0.093	54	-0.055	55	-0.055	55
Family group importance (post-		0.479		0.524		0.533
manipulation)	6.815	54	6.800	55	6.709	55
Change in family group importance		0.675		0.504		0.272
(pre- to post-manipulation)	0.185	54	-0.073*	55	0.000†	55
Country self-concept (post-		6.691		7.189		6.464
manipulation)	50.885	52	50.840	50	50.434	53
Change in country self-concept (pre-		3.309		2.839		2.791
to post-manipulation)	0.333	51	0.630	46	-0.176	51
(Threat manipulation checks)						
		13.135		17.090		12.909
Feel personally threatened (scale)	24.612	49	29.118†	51	32.360**	50
		14.075		13.094		11.870
Feel country threatened (scale)	31.846**	52	39.577**	52	38.685**	54
		2.014		1.880		1.696
Feel threatened for country (Q)	3.442	52	4.200*	55	4.418**	55
		1.595		1.715		1.536
Situation personally threatening (Q)	2.278***	54	4.945***	55	5.218***	55
		1.885		1.656		1.332
Situation threatening to country (Q)	2.648***	54	5.327***	55	5.667***	54

Natural Disaster (India)

Comparing Indians in the natural disaster condition with Indians in the control condition, none of the comparisons are statistically significant in the direction predicted. One result approaches statistical significance, **agreement with a statement reflecting individual-orientedness** "Only individuals, not social groups, can be morally good or bad" ($t = 1.444$, $p = 0.076$). Many patterns are in the direction predicted, while some are not. Results not statistically significant, though in the direction predicted are causality dimension of holism ($t = -0.290$, $p = 0.386$), attitudes toward contradictions dimension of holism ($t = -0.211$, $p = 0.417$), perception of change dimension of holism ($t = -2.233$, $p = 0.110$), locus of attention dimension of holism ($t = -0.207$, $p = 0.419$), overall holism scale (excluding perception of change) ($t = -0.399$, $p = 0.368$), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" ($t = 0.351$, $p = 0.364$), interdependence ($t = -0.473$, $p = 0.319$), horizontal individualism ($t = 1.053$, $p = 0.148$), vertical individualism ($t = 0.847$, $p = 0.200$), horizontal collectivism ($t = -0.179$, $p = 0.429$), vertical collectivism ($t = -0.235$, $p = 0.407$), combined individualism ($t = 1.166$, $p = 0.123$), combined collectivism ($t = -0.228$, $p = 0.410$), post-manipulation country importance ($t = -0.132$, $p = 0.448$), post-manipulation workplace group importance ($t = -0.527$, $p = 0.300$), pre-to-post-

manipulation change in workplace group importance (t = -0.271, p = 0.394), and pre-to-post-manipulation change in country self-concept (t = -0.472, p = 0.319).

Unexpectedly, **pre-to-post-manipulation change in family group importance** is statistically significant in the opposite direction predicted (all two-tailed), such that Indians in the natural disaster condition exhibit a slight decrease in expressed family importance, while Indians in the control condition exhibited an increase (t = 2.263, p = 0.026). Other outcomes are not statistically significant, though also in the opposite direction predicted. These are group orientedness (t = 0.383, p = 0.703), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (t = -0.200, p = 0.842), independence (t = -0.596, p = 0.553), difference between independence and interdependence (t = -0.702, p = 0.484), pre-to-post-manipulation change in country importance (t = 0.903, p = 0.363), post-manipulation family group importance (t = 0.154, p = 0.878), and post-manipulation country self-concept (t = 0.032, p = 0.974).

In the control models, the Indian natural disaster result for **individualism** changes from not statistically significant to approaching statistical significance in the direction predicted (UCC model, t = -1.387, p = 0.085). Also, the result for post-manipulation country self-concept changes from not statistically significant in the opposite direction predicted to not statistically significant in the direction predicted in the UC, IDQ, and CBC models, and the result for the post-manipulation family group importance also does in the UCC and IDQ models.

In three control models for agreement with a statement reflecting individual-orientedness "Only individuals, not social groups, can be morally good or bad," the result no longer approaches statistical significance in the direction predicted (UCC, IDQ, and CBC models). Some results also change from not statistically significant in the direction predicted to not statistically significant in the opposite direction predicted. This is the case for the attitude toward contradictions dimension of holism (CBC model), perception of change dimension of holism (CBC model), locus of attention dimension of holism (UC model), horizontal collectivism (UCC model), vertical collectivism (UCC and CBC models), combined horizontal and vertical collectivism (UCC and CBC models), post-manipulation workplace group importance (UCC model), and pre-to-post-manipulation change in workplace group importance (UCC and IDQ models).

Terrorism (India)

Comparing Indians in the terrorism condition with Indians in the control condition, some results are statistically significant in the direction predicted. Results are statistically significant in the direction predicted for **difference between independence and interdependence** ($t = 1.827$, $p = 0.036$), **horizontal individualism** ($t = 1.765$, $p = 0.040$), **vertical individualism** ($t = 1.718$, $p = 0.045$), and **combined horizontal and vertical individualism** ($t = 2.057$, $p = 0.021$). Results not statistically significant, though in the direction predicted are group orientedness ($t = -0.979$, $p = 0.165$), agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" ($t = 0.069$, $p = 0.473$), agreement with a statement reflecting individual-orientedness "Only individuals, not social groups, can be morally

good or bad" (t = 0.213, p = 0.416), independence (t = 0.92, p = 0.179), interdependence (t = -0.442, p = 0.330), post-manipulation workplace group importance (t = -0.407, p = 0.342), and pre-to-post- manipulation change in workplace group importance (t = -0.377, p = 0.354).

Some results are in the opposite direction predicted (all two-tailed). **Pre-to-post-manipulation change in country importance** is statistically significant in the opposite direction predicted (t = -9.611, p <0.001), such that Indians in the terrorism condition exhibit a slight decrease in expressed country importance, while Indians in the control condition exhibit a slight increase. The difference for **pre-to-post-manipulation change in family group importance** approaches statistical significance in the opposite direction predicted (t = 1.872, p = 0.065), such that Indians in the terrorism condition exhibited no change in expressed family importance, while Indians in the control condition exhibited an increase. Several results are not statistically significant, though in the opposite direction predicted. These results are for the causality dimension of holism (t = 0.226, p = 0.822), attitudes toward contradictions dimension of holism (t = 0.183, p = 0.855), perception of change dimension of holism (t = 0.079, p = 0.937), locus of attention dimension of holism (t = 0.928, p = 0.356), overall holism scale (t = 0.635, p = 0.527), agreement with a statement reflecting individual-orientedness "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" (t = -0.276, p = 0.783), horizontal collectivism (t = 0.530, p = 0.597), vertical collectivism (t = 0.246, p = 0.806), combined collectivism (t = 0.433, p = 0.666), post-manipulation country importance (t = 0.958, p = 0.340), post-manipulation country self-concept (t = 1.089, p = 0.279), and pre-to-post-

manipulation change in country self-concept ($t = 0.351$, $p = 0.729$), and post-manipulation family group importance ($t = 0.841$, $p = 0.402$).

None of the control models increase statistical support for the predictions for Indians and the terrorism manipulation. Perhaps notably, results that were not statistically significant in the opposite direction predicted change to not statistically significant in the direction predicted in the CBC model for the perception of change component of holism and agreement with a statement reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong").

Some of the control model results decrease statistical support for the predictions for Indians and the terrorism manipulation. Results change from statistically significant to approaching significance (still in the direction predicted) for horizontal individualism (IDQ model, $t = -1.328$, $p = 0.094$), vertical individualism (UC, IDQ, and CBC models, $t = -1.644$, $p = 0.052$; $t = -1.610$, $p = 0.056$; $t = -1.31$, $p = 0.097$, respectively), and combined horizontal and vertical individualism (CBC model, $t = -1.307$, $p = 0.098$). Results change from statistically significant to not statistically significant (though still in the direction predicted) for difference between independence and interdependence (UC, UCC, IDQ, and CBC models), horizontal individualism (CBC model), and vertical individualism (UCC model). Some results also change from not statistically significant in the direction predicted to not statistically significant in the opposite direction predicted. This is the case for agreement with a statement reflecting individual-orientedness "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (CBC model),

agreement with a statement reflecting individual-orientedness "Only individuals, not social groups, can be morally good or bad" (UCC, IDQ, and CBC models), interdependence (IDQ and CBC models), post-manipulation workplace importance (CBC model), and pre-to-post-manipulation change in workplace importance (IDQ model).

Some control model results increase support for conclusions in the opposite direction predicted. Notably, the result for **post-manipulation country importance** changes from not statistically significant in the opposite direction predicted to statistically significant (CBC model, $t = -2.397$, $p = 0.009$). Also, the result for **pre-to-post-manipulation family group importance** changes from not statistically significant in the opposite direction predicted to approaching statistical significance (CBC model, $t = -2.397$, $p = 0.019$, two-tailed). One result decreases support for these conclusions in the opposite direction predicted — this is for pre-to-post-manipulation change in country importance, which changes from statistically significant to approaching significance (UC model, $t = -1.901$, $p = 0.061$, two-tailed).

Competing Predictions 2A and 2B: American versus Indian Responsiveness to Threats

Predictions 2A and 2B are competing predictions about whether Americans or Indians respond to threats with more ingroup-prosociality. They are framed as competing predictions because the two opposite outcomes have theoretically relevant explanations. First, for Prediction 2A, which predicts that Americans will be more responsive than Indians, this could be because Americans have lower baseline threat levels than Indians do, likely due to higher levels of historical threat in India. However, if Indians have historically experienced higher levels of threat, threat may be more salient to them,

therefore they would be more responsive than Americans (Prediction 2B). Though these explanations are not mutually exclusive, defining them in advance allows for more informed testing and framing of the proposed theory. For these reasons, statistical tests are two-tailed.

Linear Interaction Term Analyses

Linear interaction term results support Prediction 2A more so than Prediction 2B. However, as in the Prediction 1 results, statistical evidence is limited. Considering the directions of results regardless of statistical significance, Americans are more responsive to terrorism, with 17 of 26 interactions in the direction favoring 2A, and Indians are more responsive to natural disaster, with 19 of 26 interactions in the direction favoring 2B.

I discuss these results in detail below. Only results in the corresponding direction (regardless of statistical significance) are addressed in the respective 2A and 2B sections. In the tables below, cells shaded gray represent results in the direction supporting Prediction 2B.

Table 4A: Linear Interaction Models Results for Study 1 Outcomes: Natural Disaster

Natural Disaster: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term, model also includes respective main effects						
Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
Causality component of analysm-holism (scale)	-0.091	1.625	-0.06	0.956	212	0.020

Natural Disaster: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term, model also includes respective main effects

Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
Attitude toward contradictions component of analysm-holism (scale)	0.254	1.594	0.16	0.873	212	-0.014
Perception of change component of analysm-holism (scale)	0.363	1.736	0.21	0.835	211	0.052
Locus of attention component of analysm-holism (scale)	-0.699	1.752	-0.40	0.690	213	0.054
Combined holism scale (without perception of change)	-0.429	3.734	-0.11	0.909	202	0.027
Group orientedness scale	0.567	1.053	0.54	0.591	210	0.119
Individual orientedness Q: consequences to self versus group	-0.041	0.392	-0.11	0.916	218	-0.005
Individual orientedness Q: freedom versus conformity	-0.397	0.375	-1.06	0.291	218	0.010
Individual orientedness Q: whether social groups can be morally good or bad	**0.985†**	0.524	-1.88	**0.062**	217	0.078
Independence scale	0.233	3.336	0.07	0.944	203	0.008
Interdependence scale	2.444	3.594	0.68	0.497	202	0.207
Difference between interdependence and independence scales	0.070	4.521	0.02	0.988	190	0.071
Horizontal individualism scale	-1.510	1.443	-1.05	0.297	214	-0.006
Vertical individualism scale	0.316	1.679	0.19	0.851	215	0.160
Horizontal collectivism scale	0.005	1.471	0.00	0.997	217	0.123
Vertical collectivism scale	0.519	1.480	0.35	0.726	218	0.149
Combined individualism scale	1.118	2.498	-0.45	0.655	211	0.096
Combined collectivism scale	0.469	2.660	0.18	0.860	217	0.165
Country importance (post-manipulation)	0.505	0.337	1.50	0.136	217	0.198
Change in country importance (pre- to post-manipulation)	0.034	0.121	0.28	0.778	217	0.020
Workplace group importance (post-manipulation)	0.269	0.371	0.72	0.470	218	0.186
Change in workplace group importance (pre- to post-manipulation)	0.038	0.188	0.20	0.841	218	-0.012
Family group importance (post-manipulation)	0.248	0.252	0.98	0.326	218	0.054
Change in family group importance (pre- to post-	**-0.276***	0.133	-2.08	**0.038**	217	0.023

Natural Disaster: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term, model also includes respective main effects

Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
manipulation)						
Country self-concept (post-manipulation)	2.477	2.707	0.92	0.361	205	0.189
Change in country self-concept (pre- to post-manipulation)	0.122	0.853	0.14	0.886	192	0.004
(Threat manipulation checks)						
Feel personally threatened (scale)	6.294	4.150	1.52	0.131	203	0.002
Feel country threatened (scale)	**8.125***	3.725	2.18	**0.030**	211	0.028
Feel threatened for country (Q)	0.813	0.506	1.61	0.110	215	0.037
Situation personally threatening (Q)	**0.964***	0.454	2.13	**0.035**	218	0.312
Situation threatening to country (Q)	0.437	0.476	0.92	0.360	218	0.326

Table 4B: Linear Interaction Models Results for Study 1 Outcomes: Terrorism

Terrorism: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term; model also includes respective main effects (not specified in this table)

Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
Causality component of analysm-holism (scale)	-0.542	1.580	-0.34	0.732	209	0.015
Attitude toward contradictions component of analysm-holism (scale)	-0.881	1.516	-0.58	0.562	210	-0.007
Perception of change component of analysm-holism (scale)	0.766	1.737	0.44	0.660	210	0.035

Terrorism: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term; model also includes respective main effects (not specified in this table)

Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
Locus of attention component of analysm-holism (scale)	**-3.297***	1.590	-2.07	**0.039**	213	0.039
Combined holism scale (without perception of change)	-5.287	3.278	-1.61	0.108	200	0.017
Group orientedness scale	0.739	0.928	0.80	0.427	212	0.154
Individual orientedness Q: consequences to self versus group	0.053	0.396	-0.13	0.894	216	-0.006
Individual orientedness Q: freedom versus conformity	0.074	0.365	0.20	0.839	216	-0.011
Individual orientedness Q: whether social groups can be morally good or bad	0.594	0.517	-1.15	0.252	216	0.103
Independence scale	-1.167	3.338	-0.35	0.727	202	0.002
Interdependence scale	0.982	3.433	0.29	0.775	198	0.205
Difference between interdependence and independence scales	-3.334	4.095	-0.81	0.417	190	0.127
Horizontal individualism scale	2.188	1.466	-1.49	0.137	211	0.003
Vertical individualism scale	-0.635	1.682	-0.38	0.706	216	0.138
Horizontal collectivism scale	-0.671	1.408	-0.48	0.634	214	0.116
Vertical collectivism scale	0.574	1.406	0.41	0.683	216	0.168
Combined individualism scale	-2.597	2.586	-1.00	0.316	210	0.080
Combined collectivism scale	-0.101	2.475	-0.04	0.967	214	0.180
Country importance (post-manipulation)	-0.251	0.339	-0.74	0.460	217	0.093
Change in country importance (pre- to post-manipulation)	-0.147	0.125	-1.18	0.241	217	0.000
Workplace group importance (post-manipulation)	-0.449	0.320	-1.41	0.161	217	0.156
Change in workplace group importance (pre- to post-manipulation)	-0.166	0.197	-0.84	0.402	217	0.008
Family group importance (post-manipulation)	-0.124	0.206	-0.60	0.547	217	0.020
Change in family group importance (pre- to post-manipulation)	**-0.333***	0.148	-2.26	**0.025**	217	0.010
Country self-concept (post-manipulation)	-2.262	2.474	-0.91	0.362	211	0.129
Change in country self-concept (pre- to post-manipulation)	**-1.306***	0.918	-1.42	**0.157**	200	-0.004
(Threat manipulation						

Terrorism: Linear interaction model analyses: country indicator (India = 1, US = 0) * threat interaction term; model also includes respective main effects (not specified in this table)						
Outcome	Interaction term coef.	Interaction term std. Err.	Interaction term t	Interaction term p	Model n	Model Adj R-squared
checks)						
Feel personally threatened (scale)	4.885	4.086	1.20	0.233	201	0.026
Feel country threatened (scale)	**6.801†**	3.690	1.84	**0.067**	212	0.023
Feel threatened for country (Q)	**1.022***	0.499	2.05	**0.042**	214	0.042
Situation personally threatening (Q)	0.589	0.439	1.34	0.182	217	0.403
Situation threatening to country (Q)	0.481	0.479	1.00	0.316	216	0.382

Competing Prediction 2A: Greater American Responsiveness to Threats

Interactions were tested between country and each respective type of threat — natural disaster and terrorism. This section details results in the direction supporting Prediction 2A (greater American responsiveness to threats). As noted above, all tests are two-tailed.

Natural Disaster Interactions Supporting Prediction 2A (Greater American Response)

Only one interaction result is statistically significant in the direction supporting Prediction 2A for natural disaster (supporting greater American responsiveness) — **pre-to-post-manipulation change in family group importance** (t = -2.084, p = 0.038).

Some results are not statistically significant, though in the direction predicted: causality dimension of holism (t = -0.056, p = 0.956), locus of attention dimension of holism (t = -0.399, p = 0.690), overall holism scale (excluding perception of change) (t = -0.115, p = 0.909), independence (t = 0.070, p = 0.944), interdependence (t = 0.680, p =

0.497), and vertical individualism ($t = 0.188$, $p = 0.851$). All other results are in the direction favoring Prediction 2B.

Some results not statistically significant but initially in the direction supporting 2B change to not statistically significant in the direction supporting 2A in the control models. This is the case for post-manipulation family group importance in the UCC model, vertical collectivism and combined collectivism for the CBC-I models, attitude toward contradictions dimension of holism (UCC model), perception of change dimension of holism (UCC, CBC, and CBC-I models), group-orientedness (UCC, CBC, and CBC-I models), agreement with a statement reflecting individual-orientedness, "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (UC, UCC, IDQ, CBC, and CBC-I models), horizontal collectivism (UC, UCC, CBC, and CBC-I models), vertical collectivism (UCC, CBC, and CBC-I models), combined individualism (IDQ and CBC models), combined collectivism (UC, UCC, CBC, and CBC-I models), pre-to-post-manipulation change in country importance (UCC model), and overall post-manipulation country self-concept (UCC and CBC models).

Some control model results decrease support for Prediction 2A. The result for pre-to-post-manipulation change in family group importance changes from statistically significant in the direction supporting 2A to approaching statistical significance in the UC model ($t = -1.962$, $p = 0.051$) and changes to no longer statistically significant in both the IDQ and IDQ-I models. Also, some results that are not statistically significant in the direction supporting 2A change to the direction supporting 2B but also not statistically significant. This is the case for the causality dimension of holism (UC and IDQ models),

overall holism (IDQ and CBC models), independence (UCC model), and interdependence (CBC-I model).

Terrorism Interactions Supporting Prediction 2A (Greater American Response)

Two results are statistically significant in the direction supporting Prediction 2A — for the **locus of attention dimension of holism** (t = -2.073, p = 0.039) and **pre-to-post-manipulation change in country self-concept** (t = -2.258, p = 0.025).

Several results are not statistically significant, though in the direction supporting Prediction 2A. These are for: overall holism scale (excluding perception of change) (t = -1.613, p = 0.108), pre-to-post-manipulation change in workplace group importance (t = -1.422, p = 0.157), post-manipulation family group importance (t = -1.406, p = 0.161), causality dimension of holism (t = -0.343, p = 0.732), attitude toward contradictions dimension of holism (t = -0.581, p = 0.562), agreement with a statement reflecting individual-orientedness, "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" (t = 0.203, p = 0.839), interdependence (t = 0.286, p = 0.775), difference between independence and interdependence (t = -0.814, p = 0.417), horizontal collectivism (t = -0.477, p = 0.634), combined collectivism (t = -0.041, p = 0.967), post-manipulation country importance (t = -0.739, p = 0.460), pre-to-post-manipulation change in country importance (t = -1.175, p = 0.241), post-manipulation workplace group importance (t = -0.914, p = 0.362), pre-to-post-manipulation change in family group importance (t = -0.839, p = 0.402), and post-manipulation country self-concept (t = -0.602, p = 0.547). All other results are in the direction supporting Prediction 2B (see following sections addressing those).

Some control analyses increase statistical support for Prediction 2A. The result for **pre-to-post-manipulation change in family group importance** changes from not statistically significant to statistically significant for the UC model (t = -2.224, p = 0.027, and from not statistically significant to approaching statistical significance for the IDQ model (t = -1.830, p = 0.069). The result for the **overall holism scale** (excluding perception of change) changes from not statistically significant to approaching statistical significance in the UC, UCC, CBC, and CBC-I models (t = -1.762, p = 0.080; t = -1.947, p = 0.053; t = -1.892, p = 0.061; t = -1.797, p = 0.075). The result for **post-manipulation family group importance** changes from not statistically significant to statistically significant in the UCC model (t = -1.981, p = 0.049). The following results change from not statistically significant in the direction supporting 2B to not statistically significant in the direction supporting 2A: agreement with a statement reflecting individual-orientedness, "In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" (UC, UCC, and CBC-I models) and independence (CBC and CBC-I models).

A few control model results decrease support for Prediction 2A. The results for pre-to-post-manipulation change in country self-concept change from statistically significant to no longer statistically significant or approaching statistical significance in any of the control models (excluding CBC and substituting IDQ-I for CBC-I). A few results change from not statistically significant in the direction supporting 2A to not statistically significant in the direction supporting 2B. This is the case for the causality dimension of holism (IDQ model), interdependence (CBC-I model), independence minus

interdependence (CBC-I model), combined collectivism (IDQ model), and post-manipulation country importance (IDQ and CBC-I models).

Competing Prediction 2B: Greater Indian Responsiveness to Threats

Interactions were tested between country and each respective type of threat — natural disaster and terrorism. This section details results in the direction supporting Prediction 2B (greater Indian responsiveness to threats). As noted above, all tests are two-tailed.

Natural Disaster Interactions Supporting Prediction 2B (Greater Indian Response)

One interaction approaches statistical significance in the direction predicted for natural disaster for 2B (supporting greater Indian responsiveness) — **agreement with a statement reflecting individual-orientedness** ("Only individuals, not social groups, can be morally good or bad") (t = -1.878, p = 0.062).

Several results are not statistically significant, though in the direction supporting Prediction 2B. These are for the attitudes toward contradictions dimension of holism (t = 0.160, p = 0.873), perception of change dimension of holism (F = 0.209, p = 0.835), group orientedness (t = 0.539, p = 0.591), agreement with two statements reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" and "Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to

which I belong" respectively) (t = -0.106, p = 0.916 and t = -1.059, p = 0.291, respectively), difference between independence and interdependence (t = 0.015, p = 0.988), horizontal individualism (t = -1.046, p = 0.297), horizontal collectivism (t = 0.004, p = 0.997), vertical collectivism (t = 0.351, p = 0.726), combined individualism (t = -0.448, p = 0.655), combined collectivism (t = 0.176, p = 0.860), post-manipulation country importance (t = 1.496, p = 0.136), pre-to-post-manipulation change in country importance (t = 0.282, p = 0.778), post-manipulation workplace importance (t = 0.724, p = 0.470), pre-to-post-manipulation change in workplace group importance (t = 0.200, p = 0.841), post-manipulation family group importance (t = 0.984, p = 0.326), post-manipulation country self-concept (t = 0.915, p = 0.361), and pre-to-post-manipulation change in country self-concept (t = 0.143, p = 0.886). All other results are in the direction supporting Prediction 2A.

None of the control model results increase statistical support for Prediction 2B. A few control model results change from not statistically significant in the direction supporting 2A to not statistically significant in the direction supporting 2B. This is the case for the causality dimension of holism (UC and IDQ models), overall holism scale (IDQ and CBC models), independence (UCC model), and interdependence (CBC-I model).

Two control model results decrease statistical support for Prediction 2B. For agreement with a statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad"), the CBC and CBC-I models no longer approach statistical significance. Some results also change from not statistically significant in the direction supporting 2B to not statistically significant in the direction

supporting 2A. This is the case for the attitudes toward contradictions dimension of holism (UCC model), perception of change dimension of holism (UCC, CBC, and CBC-I models), group-orientedness (UCC, CBC, and CBC-I models), agreement with a statement reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong") (all control models), horizontal collectivism (UC, UCC, CBC, and CBC-I models), vertical collectivism (UCC, CBC, and CBC-I models), combined individualism (IDQ, CBC, and CBC-I models), combined collectivism (UC, UCC, CBC, and CBC-I models), pre-to-post-manipulation change in country importance (UCC model), and post-manipulation family importance (UCC, IDQ, and CBC-I models).

Terrorism Interactions Supporting Prediction 2B (Greater Indian Response)

No terrorism interaction results are statistically significant or approach statistical significance in the direction supporting Prediction 2B for terrorism (supporting greater Indian responsiveness). Some results are not statistically significant, though in this direction. These are for perception of change dimension of holism ($t = 0.441$, $p = 0.660$), group orientedness ($t = 0.796$, $p = 0.427$), agreement with two statements reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" and "Only individuals, not social groups, can be morally good or bad"; $t = -0.133$, $p = 0.894$ and $t = -1.149$, $p = 0.252$, respectively), independence ($t = -0.350$, $p = 0.727$), horizontal individualism ($t = -1.492$, $p = 0.137$), vertical individualism ($t = -$

0.377, $p = 0.706$), vertical collectivism ($t = 0.408$, $p = 0.683$), and combined individualism ($t = -1.005$, $p = 0.316$). All other results were in the direction supporting Prediction 2A (see above sections addressing those).

Some control model results change from not statistically significant in the direction supporting 2B to not statistically significant in the direction supporting 2A. These are for the causality dimension of holism (IDQ model), interdependence (CBC-I model), difference between independence and interdependence (CBC-I model), combined collectivism (IDQ model), and post-manipulation country importance (IDQ and CBC-I models).

Summary of Linear Interaction Support of Cross-cultural Predictions

Overall, statistical evidence for both Prediction 2A and Prediction 2B is limited, but it generally favors greater American responsiveness. There are more statistically noteworthy interaction results for Americans, such that three are statistically significant favoring Prediction 2A, while only one approaches statistical significance favoring Prediction 2B. Considering the directions results regardless of statistical significance, Americans respond more so to terrorism, and Indians respond more so to natural disaster, with 17 of 26 interactions for terrorism in the direction favoring Prediction 2A (suggesting a stronger reaction among Americans), and 19 of 26 interactions for natural disaster in the direction favoring 2B (suggesting a stronger reaction among Indians). Taken together, these results suggest that Americans are generally more responsive to threats than Indians.

Counterfactual Linear Decomposition Analyses

I assessed counterfactual regression models using the Oaxaca-Blinder linear decomposition technique in *Stata* (findit *oaxaca*). These models test the statistical significance of three terms: (1) endowments, which represent characteristics of members of the respective groups, (2) coefficients, which represent the sole effect of group membership, and (3) the interaction between the endowments and characteristics (see Jann 2008 and Gangl 2010). The aim was to assess the extent to which characteristics from the control models, via endowment effects, explain observed ingroup prosociality outcomes. Because these models test competing predictions 2A and 2B, as in the interaction term results above, all statistical results are presented as two-tailed. Results that are not statistically significant or approaching statistical significance are not addressed here, but more information is available from the author upon request.

As in the tables presenting the linear interaction results above, cells shaded gray represent results that support Prediction 2B, and cells that remain white represent results that support Prediction 2A. Statistical significance is not marked because all results within these tables are statistically significant or approaching statistical significance, and p-values are provided within the tables.

Decomposition Results: Natural Disaster

When including control variables as in the models specified above (UC, UCC, IDQ, and CBC), there are interesting patterns in the natural disaster endowment results. For the UC and IDQ models, which include fewer explicitly cultural control variables

than the UCC and CBC models, none of the endowment effects are statistically significant. Control variables included in the UCC and CBC models but not the UC and IDQ models are perception of country's promotion of groups' interests and importance of one's family group. The CBC models also uniquely include highest education level in household, social class, age in years, pre-manipulation country importance, pre-manipulation work group importance, pre-manipulation overall country self-concept scale, and rating of extent to which country is strict toward those who violate norms.

Table 5A: Study 1 Selected Counterfactual Modeling Results: Natural Disaster

Selected Counterfactual Modeling Results: Natural Disaster						
Model	**Component**	**Outcome**	**Coef.**	**Std. Err.**	**z**	**P>|z|**
UCC	Endowment	**Causality component of analysm-holism (scale)**	-5.195	1.947	-2.67	0.008
CBC	Endowment	**Causality component of analysm-holism (scale)**	-3.934	2.274	-1.73	0.084
UCC	Endowment	**Attitude toward contradictions component of analysm-holism (scale)**	-1.031	0.578	-1.78	0.075
UCC	Endowment	**Combined holism scale (without perception of change)**	-0.331	0.201	-1.65	0.099
UCC	Endowment	**Group orientedness scale**	-4.082	1.763	-2.31	0.021
UCC	Endowment	**Individual orientedness Q: consequences to self versus group**	-1.304	0.728	-1.79	0.073
UCC	Endowment	**Independence scale**	-1.778	0.801	-2.22	0.026
UCC	Endowment	**Horizontal collectivism scale**	-3.108	1.425	-2.18	0.029
UCC	Endowment	**Vertical collectivism scale**	-0.205	0.096	-2.15	0.032
UCC	Endowment	**Combined collectivism scale**	-0.452	0.161	-2.81	0.005
UCC	Endowment	**Country importance (post-manipulation)**	-0.147	0.079	-1.86	0.064
UCC	Endowment	**Workplace group importance (post-manipulation)**	-3.210	0.963	-3.33	0.001
UCC	Endowment	**Family group importance (post-manipulation)**	2.164	1.130	1.92	0.055

Selected Counterfactual Modeling Results: Natural Disaster

Model	Component	Outcome	Coef.	Std. Err.	z	P>|z|
UCC	Endowment	**Country self-concept (post-manipulation)**	2.864	1.221	2.35	0.019
UC	Coefficient	**Perception of change component of analysm-holism (scale)**	-2.208	0.696	-3.17	0.002
UCC	Coefficient	**Perception of change component of analysm-holism (scale)**	-1.308	0.697	-1.88	0.061
UC	Coefficient	**Group orientedness scale**	-2.324	0.782	-2.97	0.003
UCC	Coefficient	**Group orientedness scale**	-1.308	0.697	-1.88	0.061
IDQ	Coefficient	**Group orientedness scale**	-2.324	0.782	-2.97	0.003
UC	Coefficient	**Individual orientedness Q: freedom versus conformity**	-0.659	0.344	-1.92	0.055
UCC	Coefficient	**Individual orientedness Q: freedom versus conformity**	-0.920	0.379	-2.43	0.015
UC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.099	0.414	-2.65	0.008
UCC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.851	0.996	-1.86	0.063
IDQ	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-4.902	2.129	-2.30	0.021
CBC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.335	0.738	-1.81	0.071
UC	Coefficient	**Independence scale**	-5.678	2.682	-2.12	0.034
UCC	Coefficient	**Independence scale**	-11.604	2.427	-4.78	0.000
IDQ	Coefficient	**Independence scale**	-8.380	2.323	-3.61	0.000
UC	Coefficient	**Interdependence scale**	-11.362	3.054	-3.72	0.000
UCC	Coefficient	**Interdependence scale**	6.013	3.245	1.85	0.064
IDQ	Coefficient	**Interdependence scale**	-5.058	1.031	-4.90	0.000
UC	Coefficient	**Difference between interdependence and independence scales**	-5.488	1.152	-4.77	0.000
UC	Coefficient	**Vertical individualism scale**	-6.115	1.254	-4.88	0.000
UCC	Coefficient	**Vertical individualism scale**	-5.745	2.570	-2.24	0.025
IDQ	Coefficient	**Vertical individualism scale**	-4.760	0.949	-5.02	0.000
CBC	Coefficient	**Vertical individualism scale**	-6.484	2.143	-3.03	0.002
UC	Coefficient	**Horizontal collectivism scale**	-4.274	1.133	-3.77	0.000
UCC	Coefficient	**Horizontal collectivism scale**	-4.097	0.971	-4.22	0.000
IDQ	Coefficient	**Horizontal collectivism scale**	-2.330	0.910	-2.56	0.010
UC	Coefficient	**Vertical collectivism scale**	-4.243	1.173	-3.62	0.000
UCC	Coefficient	**Vertical collectivism scale**	-6.198	1.590	-3.90	0.000
IDQ	Coefficient	**Vertical collectivism scale**	-6.793	1.745	-3.89	0.000
UC	Coefficient	**Combined individualism scale**	-7.990	1.933	-4.13	0.000
UCC	Coefficient	**Combined individualism scale**	-9.414	3.897	-2.42	0.016
IDQ	Coefficient	**Combined individualism scale**	-8.894	1.728	-5.15	0.000
CBC	Coefficient	**Combined individualism scale**	-8.353	3.281	-2.55	0.011
UC	Coefficient	**Combined collectivism scale**	-8.571	2.079	-4.12	0.000
UCC	Coefficient	**Combined collectivism scale**	-1.166	0.234	-4.99	0.000

Selected Counterfactual Modeling Results: Natural Disaster

Model	Component	Outcome	Coef.	Std. Err.	z	P>|z|
IDQ	Coefficient	**Combined collectivism scale**	-0.664	0.236	-2.81	0.005
UC	Coefficient	**Country importance (post-manipulation)**	-1.071	0.238	-4.51	0.000
UCC	Coefficient	**Country importance (post-manipulation)**	-1.400	0.251	-5.59	0.000
IDQ	Coefficient	**Country importance (post-manipulation)**	-1.371	0.277	-4.95	0.000
UC	Coefficient	**Workplace group importance (post-manipulation)**	-1.327	0.300	-4.42	0.000
UCC	Coefficient	**Workplace group importance (post-manipulation)**	-0.473	0.182	-2.61	0.009
IDQ	Coefficient	**Workplace group importance (post-manipulation)**	-0.520	0.218	-2.38	0.017
UC	Coefficient	**Family group importance (post-manipulation)**	-9.271	1.748	-5.30	0.000
IDQ	Coefficient	**Family group importance (post-manipulation)**	-5.143	1.690	-3.04	0.002
UC	Coefficient	**Country self-concept (post-manipulation)**	-7.101	1.848	-3.84	0.000
UCC	Coefficient	**Country self-concept (post-manipulation)**	-2.478	0.934	-2.65	0.008
IDQ	Coefficient	**Country self-concept (post-manipulation)**	-3.781	1.306	-2.89	0.004
UC	Interaction	**Locus of attention component of analysm-holism (scale)**	-1.267	0.565	-2.24	0.025
IDQ	Interaction	**Locus of attention component of analysm-holism (scale)**	-0.355	0.181	-1.96	0.050
UC	Interaction	**Group orientedness scale**	-0.437	0.265	-1.65	0.099
UC	Interaction	**Individual orientedness Q: freedom versus conformity**	-3.426	1.922	-1.78	0.075
UC	Interaction	**Individual orientedness Q: whether social groups can be morally good or bad**	5.569	2.295	2.43	0.015
UC	Interaction	**Interdependence scale**	9.234	3.406	2.71	0.007
UCC	Interaction	**Independence scale**	2.025	1.066	1.90	0.058
UCC	Interaction	**Difference between interdependence and independence scales**	-0.412	0.213	-1.93	0.053
UCC	Interaction	**Horizontal individualism scale**	-0.401	0.186	-2.16	0.031
UCC	Interaction	**Country importance (post-manipulation)**	-0.209	0.087	-2.39	0.017
CBC	Interaction	**Country importance (post-manipulation)**	-0.401	0.186	-2.16	0.031
UCC	Interaction	**Change in country importance (pre- to post-manipulation)**	-0.209	0.087	-2.39	0.017
UCC	Interaction	**Family group importance (post-manipulation)**	-0.305	0.112	-2.73	0.006
(Threat Manipulation Checks)						
UC	Endowment	**Feel country threatened**	2.288	1.175	1.95	0.051

Selected Counterfactual Modeling Results: Natural Disaster						
Model	**Component**	**Outcome**	**Coef.**	**Std. Err.**	**z**	**P>|z|**
		(scale)				
UCC	Endowment	**Feel country threatened (scale)**	4.603	2.008	2.29	0.022
IDQ	Endowment	**Feel country threatened (scale)**	2.922	1.751	1.67	0.095
UC	Endowment	**Feel threatened for country (Q)**	0.343	0.159	2.16	0.031
UCC	Endowment	**Feel threatened for country (Q)**	0.566	0.285	1.98	0.047
UC	Endowment	**Feel personally threatened (scale)**	4.593	2.516	1.83	0.068
UCC	Endowment	**Situation personally threatening (Q)**	0.569	0.311	1.83	0.068
UCC	Endowment	**Situation threatening to country (Q)**	0.766	0.324	2.36	0.018
UCC	Coefficient	**Feel personally threatened (scale)**	-6.167	2.791	-2.21	0.027
IDQ	Coefficient	**Feel threatened for country (Q)**	0.775	0.372	2.08	0.037
UCC	Interaction	**Situation personally threatening (Q)**	-0.743	0.333	-2.23	0.026
UCC	Interaction	**Situation threatening to country (Q)**	-0.763	0.334	-2.29	0.022

Endowment effects in the natural disaster models are statistically significant in the direction favoring Prediction 2A (greater American responsiveness) for the causality component of holism (UCC), attitude toward contradictions dimension of holism (UCC), overall holism excluding perception of change (UCC and CBC), independence scale (UCC), interdependence scale (CBC), horizontal collectivism (CBC) vertical collectivism (UCC and CBC), combined collectivism (UCC and CBC), post-manipulation country importance (UCC and CBC), post-manipulation workplace group importance (UCC and CBC), and post-manipulation overall country self-concept (UCC and CBC). Endowment

results approaching statistical significance in the direction favoring 2A are causality dimension of holism (CBC), group orientedness scale (UCC), agreement with a statement reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong" UCC), horizontal collectivism (UCC), and post-manipulation family group importance (UCC).

Only one endowment effect result for natural disaster is statistically significant in the direction favoring Prediction 2B (greater Indian responsiveness) — this is for independence minus interdependence (CBC).

There are also many statistically significant coefficient results, most in the direction favoring Prediction 2A. Statistically significant coefficient results for the natural disaster models in the direction favoring Prediction 2A are for group orientedness (UC and IDQ), agreement with a statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad" UCC and IDQ), independence scale (UC, UCC, and IDQ,), interdependence scale (UC, UCC, and IDQ), vertical individualism (UC, UCC, IDQ), horizontal collectivism (UC, UCC, and IDQ), vertical collectivism (UC, UCC), combined individualism (UC, UCC, IDQ, and CBC), combined collectivism (UC, UCC, and IDQ), post-manipulation country importance (UC, UCC, and IDQ), post-manipulation workplace group importance (UC, UCC, and IDQ), post-manipulation family group importance (UC and IDQ), and post-manipulation overall country self-concept (UC, UCC, and IDQ). Coefficient results approaching statistical significance for the natural disaster models in the direction favoring 2A are for group

orientedness (UCC) and agreement with a statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad" UC and CBC).

Statistically significant coefficient results for the natural disaster models in the direction favoring 2B (greater Indian responsiveness) are for the perception of change dimension of holism (UCC) and agreement with a statement reflecting individual-orientedness ("Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong", UC and UCC). Coefficient results approaching statistical significance for the natural disaster models in the direction favoring 2B are the attitude toward contradictions dimension of holism (CBC), perception of change dimension of holism (UC) and independence minus interdependence (UC).

There are also some statistically noteworthy interaction results in the direction favoring Prediction 2A. Statistically significant interaction results for the natural disaster models in the direction favoring 2A are for the locus of control dimension of holism (UC and IDQ), group orientedness (UC), post-manipulation country importance (CBC), pre-to-post-manipulation change in country importance (UCC), and post-manipulation family group importance (UCC). Interaction results approaching statistical significance for the natural disaster models in the direction favoring 2A are for agreement with a statement reflecting individual-orientedness ("Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" UC), agreement with another statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad" UC), interdependence (UC), and post-manipulation country importance (UCC).

Statistically significant interaction results for the natural disaster models in the direction favoring 2B (greater Indian responsiveness) are for independence (UCC) and independence minus interdependence (UCC). One of these interaction results approaches statistical significance — this is for horizontal individualism (UCC).

Decomposition Results: Terrorism

When including control variables as in the control models above (UC, UCC, IDQ, and CBC), there are again interesting patterns in the endowment results. As in the natural disaster models, for the IDQ models, which include fewer explicitly cultural control variables than the UCC and CBC models, none of the endowment effects are statistically significant. However, unlike the natural disaster results, some UC model results are statistically significant in the direction favoring Prediction 2B (greater Indian responsiveness).

Table 5B: Study 1 Selected Counterfactual Modeling Results: Terrorism

Selected Counterfactual Modeling Results: Terrorism						
Model	**Component**	**Outcome**	**Coef.**	**Std. Err.**	**z**	**P>|z|**
UC	Endowment	**Causality component of analysm-holism (scale)**	0.954	0.559	1.71	0.088
CBC	Endowment	**Causality component of analysm-holism (scale)**	-3.888	1.783	-2.18	0.029
UC	Endowment	**Locus of attention component of analysm-holism (scale)**	1.028	0.566	1.81	0.07

Selected Counterfactual Modeling Results: Terrorism

Model	Component	Outcome	Coef.	Std. Err.	z	P>|z|
UC	Endowment	**Combined holism scale (without perception of change)**	2.59	1.272	2.04	0.042
CBC	Endowment	**Combined holism scale (without perception of change)**	-8.134	3.414	-2.38	0.017
UC	Endowment	**Group orientedness scale**	0.955	0.355	2.69	0.007
IDQ	Endowment	**Group orientedness scale**	0.708	0.395	1.79	0.073
UC	Endowment	**Individual orientedness Q: freedom versus conformity**	0.273	0.142	1.93	0.053
UC	Endowment	**Independence scale**	2.316	1.173	1.97	0.048
UC	Endowment	**Interdependence scale**	3.483	1.329	2.62	0.009
CBC	Endowment	**Interdependence scale**	-6.919	3.248	-2.13	0.033
CBC	Endowment	**Vertical individualism scale**	-4.412	1.549	-2.85	0.004
UC	Endowment	**Horizontal collectivism scale**	0.917	0.474	1.93	0.053
CBC	Endowment	**Horizontal collectivism scale**	-3.855	1.327	-2.9	0.004
CBC	Endowment	**Vertical collectivism scale**	-2.602	1.203	-2.16	0.031
UC	Endowment	**Combined individualism scale**	1.686	0.985	1.71	0.087
CBC	Endowment	**Combined individualism scale**	-6.613	2.778	-2.38	0.017
UC	Endowment	**Combined collectivism scale**	1.599	0.839	1.9	0.057
CBC	Endowment	**Combined collectivism scale**	-6.456	2.206	-2.93	0.003
UC	Endowment	**Country self-concept (post-manipulation)**	1.22	0.721	1.69	0.091
CBC	Endowment	**Country self-concept (post-manipulation)**	-6.104	1.443	-4.23	0
UCC	Endowment	**Country importance (post-manipulation)**	-0.261	0.144	-1.82	0.069
CBC	Endowment	**Country importance (post-manipulation)**	-0.87	0.162	-5.38	0
CBC	Endowment	**Workplace group importance (post-manipulation)**	-1.16	0.225	-5.16	0
UCC	Endowment	**Family group importance (post-manipulation)**	-0.159	0.081	-1.95	0.051
UC	Coefficient	**Causality component of analysm-holism (scale)**	-2.287	1.041	-2.2	0.028
IDQ	Coefficient	**Causality component of analysm-holism (scale)**	-2.256	1.146	-1.97	0.049
CBC	Coefficient	**Causality component of analysm-holism (scale)**	-3.834	1.807	-2.12	0.034
UC	Coefficient	**Combined holism scale (without perception of change)**	-4.291	2.223	-1.93	0.054
UC	Coefficient	**Group orientedness scale**	-2.942	0.66	-4.46	0
UCC	Coefficient	**Group orientedness scale**	-1.948	0.65	-3	0.003
IDQ	Coefficient	**Group orientedness scale**	-2.235	0.653	-3.42	0.001
UC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.396	0.366	-3.82	0
UCC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.268	0.395	-3.21	0.001

Selected Counterfactual Modeling Results: Terrorism

Model	Component	Outcome	Coef.	Std. Err.	z	P>|z|
IDQ	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.538	0.37	-4.16	0
CBC	Coefficient	**Individual orientedness Q: whether social groups can be morally good or bad**	-1.276	0.576	-2.21	0.027
UC	Coefficient	**Interdependence scale**	-9.646	2.597	-3.71	0
UCC	Coefficient	**Interdependence scale**	-5.473	2.392	-2.29	0.022
IDQ	Coefficient	**Interdependence scale**	-7.296	2.782	-2.62	0.009
UC	Coefficient	**Difference between interdependence and independence scales**	9.79	3.243	3.02	0.003
UCC	Coefficient	**Difference between interdependence and independence scales**	6.337	3.324	1.91	0.057
UC	Coefficient	**Vertical individualism scale**	-2.53	1.265	-2	0.045
IDQ	Coefficient	**Vertical individualism scale**	-2.719	1.32	-2.06	0.039
UC	Coefficient	**Horizontal collectivism scale**	-4.427	0.991	-4.47	0
UCC	Coefficient	**Horizontal collectivism scale**	-3.449	1.042	-3.31	0.001
IDQ	Coefficient	**Horizontal collectivism scale**	-3.855	0.997	-3.87	0
CBC	Coefficient	**Horizontal collectivism scale**	-2.519	1.512	-1.67	0.096
UC	Coefficient	**Vertical collectivism scale**	-4.863	1.006	-4.84	0
UCC	Coefficient	**Vertical collectivism scale**	-2.848	0.958	-2.97	0.003
IDQ	Coefficient	**Vertical collectivism scale**	-4.113	1.096	-3.75	0
UC	Coefficient	**Combined collectivism scale**	-9.407	1.724	-5.46	0
UCC	Coefficient	**Combined collectivism scale**	-6.375	1.687	-3.78	0
IDQ	Coefficient	**Combined collectivism scale**	-8.059	1.814	-4.44	0
CBC	Coefficient	**Combined collectivism scale**	-4.508	2.535	-1.78	0.075
UC	Coefficient	**Country importance (post-manipulation)**	-0.62	0.255	-2.43	0.015
IDQ	Coefficient	**Country importance (post-manipulation)**	-0.551	0.221	-2.49	0.013
UCC	Coefficient	**Workplace group importance (post-manipulation)**	-0.999	0.25	-4	0
IDQ	Coefficient	**Workplace group importance (post-manipulation)**	-1.1	0.246	-4.48	0
UC	Coefficient	**Family group importance (post-manipulation)**	-0.496	0.155	-3.19	0.001
IDQ	Coefficient	**Family group importance (post-manipulation)**	-0.443	0.17	-2.6	0.009
UC	Coefficient	**Country self-concept (post-manipulation)**	-6.713	1.865	-3.6	0
UCC	Coefficient	**Country self-concept (post-manipulation)**	-3.512	1.769	-1.98	0.047
IDQ	Coefficient	**Country self-concept (post-manipulation)**	-5.494	1.693	-3.25	0.001
UC	Interaction	**Locus of attention component of analysm-holism (scale)**	-1.809	1.008	-1.79	0.073
IDQ	Interaction	**Locus of attention component of analysm-holism (scale)**	-2.102	1.138	-1.85	0.065
UC	Interaction	**Group orientedness scale**	-0.964	0.573	-1.68	0.093

Selected Counterfactual Modeling Results: Terrorism

Model	Component	Outcome	Coef.	Std. Err.	z	P>|z|
UCC	Interaction	**Group orientedness scale**	-1.143	0.642	-1.78	0.075
IDQ	Interaction	**Group orientedness scale**	-1.275	0.592	-2.16	0.031
UC	Interaction	**Individual orientedness Q: freedom versus conformity**	-0.522	0.226	-2.31	0.021
UC	Interaction	**Independence scale**	-3.595	2.036	-1.77	0.077
UC	Interaction	**Interdependence scale**	-6.432	2.328	-2.76	0.006
UCC	Interaction	**Interdependence scale**	-8.071	2.463	-3.28	0.001
UC	Interaction	**Vertical indivdualism scale**	-3.308	1.147	-2.89	0.004
UC	Interaction	**Combined individualism scale**	-4.684	1.721	-2.72	0.007
UCC	Interaction	**Difference between interdependence and independence scales**	6.077	3.154	1.93	0.054
IDQ	Interaction	**Difference between interdependence and independence scales**	6.895	3.369	2.05	0.041
UCC	Interaction	**Country importance (post-manipulation)**	-0.435	0.242	-1.79	0.073
UCC	Interaction	**Change in workplace group importance (pre- to post-manipulation)**	0.286	0.151	1.89	0.058
CBC	Interaction	**Causality component of analysm-holism (scale)**	5.854	2.347	2.49	0.013
(Threat Manipulation Checks)						
UCC	Endowment	**Situation threatening to country (Q)**	0.625	0.321	1.95	0.051
CBC	Endowment	**Feel personally threatened (scale)**	9.738	4.558	2.14	0.033
UC	Coefficient	**Feel threatened for country (Q)**	0.765	0.351	2.18	0.029
UCC	Coefficient	**Feel threatened for country (Q)**	0.919	0.377	2.44	0.015
IDQ	Coefficient	**Feel threatened for country (Q)**	0.917	0.364	2.52	0.012
CBC	Coefficient	**Feel threatened for country (Q)**	1.403	0.488	2.88	0.004
CBC	Coefficient	**Feel country threatened (scale)**	11.361	3.964	2.87	0.004
CBC	Coefficient	**Situation threatening to country (Q)**	1.261	0.549	2.3	0.022
UCC	Interaction	**Situation personally threatening (Q)**	-0.644	0.338	-1.91	0.056
UCC	Interaction	**Situation threatening to country (Q)**	-1.116	0.375	-2.97	0.003
CBC	Interaction	**Situation threatening to country (Q)**	-1.593	0.709	-2.25	0.025
CBC	Interaction	**Feel personally threatened (scale)**	-16.403	6.134	-2.67	0.007
CBC	Interaction	**Feel country threatened (scale)**	-11.046	5.439	-2.03	0.042
CBC	Interaction	**Feel threatened for country (Q)**	-1.381	0.711	-1.94	0.052

Statistically significant endowment effects in the direction favoring Prediction 2A (greater American responsiveness) for the terrorism models are all for the CBC control models. These are specifically for the causality component of holism (CBC), overall holism excluding perception of change (CBC), interdependence (CBC), vertical individualism (CBC), horizontal collectivism (CBC), vertical collectivism (CBC), combined individualism (CBC), combined collectivism (CBC), post-manipulation country importance (CBC), post-manipulation workplace group importance (CBC), and post-manipulation overall country self-concept (CBC). Endowment results approaching statistical significance in the direction favoring 2A are both for the UCC model, and for post-manipulation country importance (UCC) and post-manipulation family importance (UCC).

There are some endowment results statistically significant for the terrorism models in the direction favoring Prediction 2B. This is in contrast to the natural disaster models favoring 2B, where only one is statistically significant. Statistically significant terrorism results in the direction favoring Prediction 2B (greater Indian responsiveness) are for the overall holism scale excluding perception of change (UC), group orientedness (UC), independence (UC), and interdependence (UC). Results approaching statistical significance for the terrorism models favoring 2B are for the causality component of holism (UC), locus of attention component of holism (UC), group orientedness (IDQ), agreement with a statement reflecting individual-orientedness ("Freedom to think what I

may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong," UC), horizontal collectivism (UC), combined individualism scale (UC), combined collectivism scale (UC), and post-manipulation overall country self-concept scale (UC).

Notably, several of the terrorism endowment results that are statistically significant or approaching statistical significance change direction between the UC and CBC models, such that the UC models tend to support Prediction 2B (more Indian responsiveness), while the CBC models tend to support Prediction 2A (more American responsiveness). These changes happen for the causality component of holism, overall holism scale, interdependence, horizontal collectivism, combined individualism, combined collectivism, and post-manipulation overall country self-concept. See results reported above for specific statistics.

Coefficient results that are statistically significant or approaching statistical significance for the terrorism models are all in the direction favoring Prediction 2A, except for one outcome, independence minus interdependence. Terrorism coefficient results statistically significant in the direction favoring 2A (greater American responsiveness) are for the causality component of holism (UC, IDQ, and CBC), group orientedness (UC, UCC, and IDQ), agreement with a statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad" UC, UCC, IDQ, and CBC), interdependence (UC, UCC, and IDQ), vertical individualism (UC and IDQ), horizontal collectivism (UC, UCC, and IDQ), vertical collectivism (UC, UCC, and IDQ), combined collectivism scale (UC, UCC, and IDQ), post-manipulation country importance (UC and IDQ), post-manipulation workplace group importance (UC, UCC,

and IDQ), post-manipulation family group importance (UC and IDQ), and post-manipulation overall country self-concept (UC, UCC, and IDQ). Results approaching statistical significance in the direction favoring Prediction 2A are for overall holism scale excluding perception of change (UC), horizontal collectivism scale (CBC), and combined collectivism scale (CBC).

Independence minus interdependence is statistically significant in the direction favoring Prediction 2B in the UC model, and approaches statistical significance in the UCC model. These are the only statistically noteworthy results in this direction.

Most interaction results for the terrorism models favor Prediction 2A (greater American responsiveness), but two outcomes favor Prediction 2B (greater Indian responsiveness).

Statistically significant interaction results for the terrorism models in the direction supporting Prediction 2A are for group orientedness (IDQ), agreement with a statement reflecting individual-orientedness ("Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong" UC), interdependence (UC, UCC, and IDQ), vertical individualism (UC and UCC), and combined individualism scale (UC). Results approaching statistical significance in the direction supporting Prediction 2A are for the locus of control component of holism (UC and IDQ), group orientedness (UC and UCC), independence (UC), post-manipulation country importance (UCC), and pre-to-post-manipulation change in workplace group importance (UCC).

Interaction results for these terrorism models are statistically significant in the direction supporting Prediction 2B for the causality component of holism (CBC) and

independence minus interdependence (IDQ). The result for independence minus interdependence also approaches statistical significance in this direction in the UCC model.

Decomposition Results: Control Conditions Only

To test the role of the participant's country on the ingroup prosociality outcomes, I conducted linear decomposition analyses only include the control conditions, without any threat manipulation conditions. These again use the control models discussed above (UC, UCC, IDQ, and CBC). They are also presented as two-tailed. In these models, there are statistically significant results for the endowments, coefficients, and interactions. I discuss the endowments, coefficients, and then interactions, and how these results support Prediction 2A and Prediction 2B.

Some endowment results support the assumption of greater Indian ingroup prosociality. This is the case for statistically significant models for the locus of attention dimension of holism (UC, $z = 2.15$, $p = 0.031$), group orientedness (UC, $z = 1.99$, $p = 0.047$), and pre-to-post-manipulation change in country importance (UCC, $z = 2.24$, $p = 0.025$). The result approaches statistical significance in this direction for overall holism scale (excluding perception of change) (UC, $z = 1.71$, $p = 0.087$), interdependence (UC, $z = 1.80$, $p = 0.072$), and combined individualism scale (CBC, $z = -1.70$, $p = 0.088$).

More endowment results support greater American ingroup prosociality, against the assumption of greater Indian ingroup prosociality. This is the case for statistically significant results for the attitude toward contradictions dimension of holism (CBC, $z = -2.25$, $p = 0.025$), combined holism scale excluding perception of change (CBC, $z = -2.07$,

$p = 0.038$), interdependence (CBC, $z = -2.39$, $p = 0.017$), horizontal collectivism (CBC, $z = -2.04$, $p = 0.041$), vertical collectivism (CBC, $z = -2.54$, $p = 0.011$), combined collectivism scale (CBC, $z = -2.66$, $p = 0.008$), post-manipulation country importance (CBC, $z = -4.00$, $p < 0.001$), post-manipulation workplace group importance (CBC, $z = -2.73$, $p = 0.006$), post-manipulation family group importance (UCC, $z = -2.19$, $p = 0.029$), and post-manipulation overall country self-concept (CBC, $z = -3.26$, $p = 0.001$). The result also approaches statistical significance for the IDQ model for post-manipulation workplace group importance (IDQ, $z = -1.65$, $p = 0.098$). Notably, most results that support greater Indian ingroup prosociality are in in the UC models, and most results that support greater American ingroup prosociality are in in the CBC models.

Some coefficient results support the assumption of greater Indian ingroup prosociality, but more of these support greater American ingroup prosociality. In the direction supporting greater Indian ingroup prosociality, coefficients are statistically significant for agreement with a statement reflecting individual-orientedness ("Only individuals, not social groups, can be morally good or bad" UC, UCC, IDQ, and CBC, $z = -3.54$, $p < 0.001$; $z = -3.43$, $p = 0.001$; $z = -3.52$, $p < 0.001$; $z = -2.51$, $p = 0.012$), independence minus interdependence (UC, $z = 2.69$, $p = 0.007$), vertical individualism (UC and IDQ, $z = -2.09$, $p = 0.036$; $z = -2.35$, $p = 0.019$), and combined individualism scale (IDQ, $z = -2.32$, $p = 0.020$). Also approaching statistical significance in this direction are results for independence minus interdependence (UCC, $z = 1.92$, $p = 0.054$), vertical individualism (UCC, $z = -1.72$, $p = 0.085$), and combined individualism scale (UC and UCC, $z = -1.89$, $p = 0.059$; $z = -1.73$, $p = 0.083$).

In the direction supporting greater American ingroup prosociality, coefficients are statistically significant for group orientedness (UC, UCC, and IDQ, $z = -3.16$, $p = 0.002$; $z = -2.27$, $p = 0.023$; $z = -2.57$, $p = 0.010$), interdependence (UC, UCC, and IDQ, $z = -3.10$, $p = 0.002$; $z = -2.11$, $p = 0.035$; $z = -2.03$, $p = 0.042$), horizontal collectivism (UC, UCC, and IDQ, $z = -4.33$, $p < 0.001$; $z = -3.46$, $p = 0.001$; $z = -3.37$, $p < 0.001$; $z = -2.04$, $p = 0.041$), vertical collectivism (UC, UCC, and IDQ, $z = -4.01$, $p < 0.001$; $z = -2.90$, $p = 0.004$; $z = -2.96$, $p = 0.003$; $z = -2.54$, $p = 0.011$), combined collectivism scale (UC, UCC, and IDQ, $z = -4.80$, $p < 0.001$; $z = -3.76$, $p < 0.001$; $z = -3.66$, $p < 0.001$), post-manipulation country importance (UC and IDQ, $z = -4.33$, $p < 0.001$; $z = -3.46$, $p = 0.001$; $z = -3.37$, $p = 0.001$), post-manipulation workplace group importance (UC, UCC, and IDQ, $z = -3.85$, $p < 0.001$; $z = -2.94$, $p = 0.003$; $z = -3.05$, $p = 0.002$), post-manipulation family group importance (UC and IDQ, $z = -2.58$, $p = 0.010$; $z = -2.74$, $p = 0.006$), post-manipulation overall country self-concept (UC, UCC, and IDQ, $z = -3.10$, $p = 0.002$; $z = -2.15$, $p = 0.032$; $z = -1.97$, $p = 0.048$). Also approaching significance in this direction is post-manipulation country importance (UCC, $z = -1.66$, $p = 0.096$).

Finally, some interaction results are statistically significant or approaching statistical significance, and this is the case in both directions. In the direction supporting greater Indian ingroup prosociality, interactions are statistically significant for agreement with a statement reflecting individual-orientedness ("In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong," UC and IDQ, $z = -2.02$, $p = 0.043$; $z = -2.00$, $p = 0.046$), agreement with another statement reflecting individual-orientedness ("Freedom to think what I may think is more important than accepting and agreeing with the beliefs

and views held by those in the social groups to which I belong", UC, z = -1.99, p = 0.047), and post-manipulation family group importance (IDQ, 2.09, p = 0.037). Approaching significance in this direction are the attitude toward contradictions dimension of holism (CBC, z = 1.94, p = 0.052) and the vertical individualism scale (UC, z = -1.93, p = 0.054). In the direction supporting greater American ingroup prosociality, interactions are statistically significant for the locus of control dimension of holism (UC, UCC, and IDQ, z = -2.85, p = 0.004; z = -2.39, p = 0.017; - z = 2.83, p = 0.005). Approaching significance in this direction are the overall holism scale excluding perception of change (UC, z = -1.85, p = 0.064), interdependence (UCC, z = -1.68, p = 0.094), post-manipulation country importance (CBC, z = -1.74, p = 0.082), and pre-to-post-manipulation change in country importance (UCC, z = -1.86, p = 0.063).

Cross-cultural Threat Manipulation Checks

Five manipulation-check measures assessed how threatened the participants felt. These included a scale addressing personal feelings of threat, a scale addressing group-level feelings of threat (referencing the country group), the personal threat feeling question alone (included in the scale), a question asking how threatening the participant feels the manipulation situation is to themselves personally, and a question asking how threatening the participant feels the manipulation situation is to their country. As in the main results above, these manipulation-check results are presented as one-tailed when in the direction predicted. See tables above for these means.

There are interesting differences in how Americans and Indians respond to these manipulation checks. While statistically Americans in the threat conditions do not report feeling more threatened than those in the control conditions, the Indians generally do. However, both groups generally acknowledge the threatening situations as threatening.

For the **feeling personally threatened scale**, Americans in the natural disaster condition do not report feeling more threatened on average — the difference is not statistically significant, though in the opposite direction predicted (t = 1.085, p = 0.281 two-tailed). Americans in the terrorism condition also do not report feeling more threatened statistically — the difference is also not statistically significant, though in the direction predicted (t = -0.859, p = 0.196). However, the difference for Indians in the natural disaster condition approaches statistical significance in the direction predicted (t = -1.482, p = 0.071), and for Indians in the terrorism condition, this is statistically significant (t = -2.960, p = 0.002). The pattern is similar for the **individual question about feeling personally threatened** within the scale, and still neither result is statistically significant. The only notable difference is that the result for Americans in both the natural disaster and terrorism condition are in the opposite direction predicted (t = 0.162, p = 0.871; t = 0.134, p = 0.893, respectively, both two-tailed). Results are statistically significant in the direction predicted for Indians in both the natural disaster and terrorism conditions (t = -2.013, p = 0.024; t = -2.716, p = 0.004), respectively). Results for the **feeling group threatened scale** are again similar to those for the feeling personally threatened scale. Results for Americans are again not statistically significant, with the natural disaster comparison in the opposite direction predicted and the terrorism comparison in the direction predicted (t = 0.151, p = 0.880 two-tailed, t = -0.014, p =

0.495, respectively). The differences for Indians are statistically significant in the direction predicted for both the natural disaster and terrorism comparisons (t = -2.900, p = 0.003; t = -2.708, p = 0.004, respectively).

Both American and Indian response comparisons are statistically significant in the direction predicted for the manipulation check questions about the situation. For the **question about how threatening the participant feels the situation is to them personally**, this is the case for both countries and threat conditions: Americans in the natural disaster condition (t = -5.252, p <0.001), Americans in the terrorism condition (t = -7.317, p <0.001), Indians in the natural disaster condition (t = -8.405, p <0.001), and Indians in the terrorism condition (t = -9.805, p <0.001).

There is some statistical evidence of an **interaction effect between Indian country group and threat manipulation, such that Indians are more responsive**. While all interaction results with these manipulation check outcomes are in this direction, **natural disaster interactions** for **feeling group threatened scale** and the **question about feeling the threat situation is personally threatening** are statistically significant (t = 2.181, p = 0.030, and t = 2.125, p = 0.035, respectively, both two-tailed). For **terrorism**, the interaction for the **feeling personally threatened question** is statistically significant (t = 2.049, p = 0.042, two-tailed), while the interaction for the **feeling group threatened scale approaches statistical significance** (t = 1.843, p = 0.067, two-tailed).

Analyses with control variables change some of the statistical conclusions but do not change the overall conclusion that Indians respond strongly in both feeling and evaluating the situations as threatening, while Americans respond much more strongly in evaluating the situations as threatening than feeling they are threatening.

For the Americans, results including control variables for natural disaster for the feeling personally threatened scale change from not statistically significant in the direction predicted to approaching statistical significance in the CBC model ($t = 1.403$, $p = 0.083$). American results for both natural disaster and terrorism for the group threatened scale change from not statistically significant in the opposite direction predicted to not statistically significant in the direction predicted in the CBC model. This is the case for Americans in the terrorism condition for the feeling threatened question as well.

For the Indians, results including control variables for natural disaster for the personally feeling threatened scale change from approaching statistical significance to statistically significant in the direction predicted for all control models (UC, UCC, IDQ, and CBC models; $t = 1.884$, and $p = 0.032$; $t = 2.572$, and $p = 0.006$; $t = 2.196$, $p = 0.016$; and $t = 3.15$, and $p = 0.003$, respectively). For the CBC model only, results change from statistically significant in the direction predicted to only approaching statistical significance for the terrorism condition with the feeling group threatened scale outcome ($t = 1.597$, $p = 0.058$) and for the natural disaster condition with the question about the manipulation situation's threat to self ($t = 1.622$, $p = 0.055$).

While including control variables in the analyses generally lessens support for this conclusion, some natural disaster interaction results increase statistical support for greater Indian responsiveness. While the interaction for the feeling threatened scale for Indians is not initially statistically significant, in three of five control models it becomes statistically significant (UCC, IDQ, CBC, and CBC-I; $t = 2.621$, $p = 0.009$; $t = 2.378$, $p = 0.019$; and $t = 2.613$, $p = 0.010$, respectively, all two-tailed) and in two approaches statistical significance (UC and IDQ; $t = 1.840$, $p = 0.067$ and $t = 1.849$, $p = 0.066$, respectively,

both two-tailed). For the feeling personally threatened question, results in two models change from not statistically significant to approaching statistical significance (IDQ and CBC; $t = 1.853$, $p = 0.066$ and $F = 1.825$, $p = 0.070$, respectively, both two-tailed). Some of these control results decrease statistical support. For the feel group threatened scale, the result for the CBC-I model changes from statistically significant to approaching statistical significance ($t = 1.946$, $p = 0.054$, two-tailed). For the question about the manipulation situation's threat to the country, results for three control models change from statistically significant to not statistically significant (IDQ, CBC, and CBC-I).

Results including control variables for the terrorism interaction analyses still favor greater Indian responsiveness overall, but as with the natural disaster results, generally decrease support for this conclusion. Increasing statistical support, for the feeling threatened scale, the result for the UCC model changes from not statistically significant in the direction favoring greater Indian responsiveness to approaching statistical significance ($t = 1.798$, $p = 0.074$, two-tailed). The rest of the models decrease support. For the feeling personally threatened question, three of the control models change from statistically significant to approaching statistical significance (UC, UCC, and IDQ: $t = 1.931$, $p = 0.055$; $t = 1.852$, $p = 0.065$; $t = 1.722$, $p = 0.087$, respectively, all two-tailed), and two become not statistically significant (CBC and CBC-I). For the feeling group threatened scale, three control models no longer approach statistical significance (IDQ, CBC, and CBC-I).

Decomposition Manipulation Checks

In evaluating the manipulation checks as outcomes in the linear decomposition analyses, results are consistent with the main manipulation check results discussed above, suggesting that Indians are overall more responsive in terms of how threatened they felt by the manipulations. See above tables for these results.

Endowment effects in the natural disaster models are statistically significant in the direction favoring Prediction 2B for the feeling threatened scale (CBC), feeling group threatened scale (UCC), feeling threatened question within the scale (UC and UCC), and question how about threatening the situation is to the country (UCC). Endowment results for natural disaster approaching statistical significance in the direction favoring 2B are the feeling threatened scale (UCC), feeling group threatened scale (UC and IDQ), and question about how threatening the situation is to the participant (UCC). Consistent with natural disaster results, the endowment effect in the terrorism models is statistically significant in the direction favoring 2B (greater Indian responsiveness) for the feeling threatened scale (CBC), and it approaches statistical significance in this direction for the question evaluating how threatening the situation is to the country (UCC).

In the natural disaster models, there are two statistically significant coefficients. The coefficient for the feeling threatened scale is statistically significant in the direction favoring Prediction 2A (greater American responsiveness) for the UCC model. The coefficient for the feeling threatened question is statistically significant in the direction favoring Prediction 2B (greater Indian responsiveness) for the IDQ model. In the terrorism models, coefficients are statistically significant for the feeling group threatened scale (CBC), individual question about feeling the group is threatened (UC, UCC, IDQ,

and CBC), and question evaluating how about threatening the situation is to the country (CBC).

In the natural disaster models, there are two significant interaction effects in the direction supporting Prediction 2A (greater American responsiveness) — those for the threat situation manipulation check questions (about regarding the situation as threatening personally and to one's country, respectively) in the UCC models. Results are in the same direction for the terrorism models — the interaction is statistically significant for the feeling personally threatened scale (CBC), feeling group threatened scale (CBC), and question evaluating how about threatening the situation is to the country (UCC and CBC). Some terrorism results also approach statistical significance in this direction for the feeling country threatened question (CBC) and the question evaluating how threatening the situation is personally (UCC).

For interactions, in the control models (without threats) there are two outcomes with outcomes statistically significant or approaching significance. Both are in the direction supporting greater American ingroup prosociality, which is against the second initial assumption. The control interaction was statistically significant for feeling threatened scale (CBC), and approaches statistical significance for the feeling group threatened scale (CBC).

Study 1 Discussion

Evidence of ingroup prosociality responses to threats to groups is limited, but there are some interesting results, especially comparing Americans with Indians. There were more statistical results in the direction predicted for terrorism compared to natural

disaster for both Americans and Indians. For Americans, these outcomes were locus of attention dimension of holism and post-manipulation rating of workplace group importance, and results approaching statistical significance were combined holism and pre-to-post-manipulation change in family group importance. For Indians, these outcomes were independence minus interdependence, horizontal individualism, vertical individualism, and combined individualism. Notably, however, Indians had some statistical results in the opposite direction predicted, specifically for pre-to-post-manipulation change in family group importance (natural disaster, and approaches statistical significance for terrorism) and pre-to-post-manipulation change in country group importance (terrorism).

Including control variables in these within-country comparisons, some of the natural disaster results for Americans approach statistical significance in the direction predicted (none of them did without control variables), and there is no longer statistical support for the terrorism change in workplace group importance result, and also for one of the terrorism models for overall holism. For Indians, several control models decrease support for the prediction. Perhaps notably, one of the control models for natural disaster yields a combined individualism scale result that approaches statistical significance in the direction predicted.

Overall, these within-country comparisons somewhat support Prediction 1, that threat increases ingroup prosocial cognitive and social orientations such as holism. However, statistical support being only minimal and the Indian results in the opposite direction predicted are relevant points for discussion.

The interaction term results suggest that by comparison, Americans tend to be more responsive to threats than Indians, somewhat supporting Prediction 2A over Prediction 2B. Considering only the directions of the interaction results, regardless of statistical significance, there are more patterns in the direction supporting Prediction 2A for terrorism, and more supporting Prediction 2B for natural disaster. Finally, the counterfactual analyses further suggest that Americans tend to be more responsive to threats, and that demographic and social characteristics may predict Indian responses to terrorism threats than their responses to natural disaster threats. Though the Study 1 results potentially suggest a more nuanced story about threat response and cultural context than originally proposed, they do not strongly support either Prediction 2A or Prediction 2B, such that Americans or Indians are consistently more responsive to threats. However, the results do somewhat support Prediction 2A, especially when considering the support for Prediction 2B by comparison.

Theoretical Considerations

My first initial assumption, that Indians experience more threat and therefore feel more threatened to begin with, is not supported. There is some statistical evidence in the opposite direction for feeling the group is threatened (both the scale and individual questions), such that Americans feel more threatened for their country to begin with. It is possible, though, in terms of the present theory, that despite experiencing objectively higher levels of threat, they do not feel as threatened, and that this is perhaps an adaptive coping response. This sort of adaptive response explanation is consistent with terror

management theory and also the group importance change variables observed in the opposite direction predicted, which I discuss further below.

My second initial assumption, that Indians express higher baseline levels of ingroup prosociality, is not supported for several measures. There is again some statistical evidence in the opposite direction for some measures, such that Americans exhibit more ingroup prosociality to begin with. Further, ingroup prosociality responses to threat manipulations appear to depend on the type of threat and which cultural group was receiving it. Both countries responded the most to terrorism, and Americans and Indians responded on different measures. I also discuss patterns from the decomposition analyses in more detail below.

As discussed above, control variables included in the uneven condition plus culture (UCC) and consistent between countries (CBC) models but not the evening condition (UC) and inconsistent and data quality between countries (IDQ) models are perception of country's promotion of groups' interests and importance of one's family group. The CBC models also uniquely include highest education in household, social class, age in years, pre-manipulation country importance, work group importance, pre-manipulation overall country self-concept scale, and extent to which country is strict toward those who violate norms. These endowment effect results suggest that when controlling for these factors, some of which are arguably fundamental to the respective cultures, Americans are more responsive. This somewhat supports the proposed explanation behind Prediction 2A — that less exposure to threats historically promotes greater responsiveness in the present. This appears to be the case with Americans and terrorism threats. The counter-factual modeling allows us to assess the role demographic

and social variables play in differences in threat responses between the American and Indian societies.

Analyzing the baseline, or control, threat levels between the countries, we see how explaining terrorism threat effects using the UC control model variables tends to result in endowment (characteristic) effects supporting greater ingroup prosociality effects for Indians. The UC control models, loosely denoting factors unexpectedly uneven across experimental conditions, include completion time estimate, frequency of using MTurk to make basic ends meet, gender, and racial/ethnic minority status. In contrast, the CBC models include factors loosely expected to differ across countries, but that still differed across conditions. These CBC models tend to result in endowment (characteristic) effects supporting greater ingroup prosociality effects for Americans. The CBC models include the UC variables, plus sense of country supporting groups' interests, pre-manipulation family group importance, country supporting individuals' interests, country tolerant of those who break norms, attention check score, and uniquely from the other models, highest education in household, social class, age in years, pre-manipulation country importance, pre-manipulation workplace group importance, pre-manipulation overall country self-concept scale, and country strict toward those who break norms.

There is also evidence of differences in cross-cultural effects of different types of threats in the counter-factual analyses. When looking at the endowment effects, most for natural disaster favor 2A, while they are more evenly split between 2A and 2B for terrorism. Specifically, all endowment results favoring 2B for terrorism are from the UC or IDQ models. In short, we could infer that if Indians had more UC model characteristics like Americans under natural disaster threat, and more CBC characteristics

like Americans under terrorism threat, Indians may exhibit more ingroup prosociality. Similarly, if Americans had more UC characteristics like Indians under terrorism threat, Americans may exhibit more ingroup prosociality. This may suggest that UC characteristics explain Indian terrorism responses especially well, that CBC characteristics explain American terrorism responses especially well, and that UCC characteristics explain American natural disaster responses especially well.

The Study 1 results warrant considering the possibility that Indians react less dramatically than Americans to threats, at least in terms of ingroup prosociality. However, as detailed in the manipulation check analyses, Indians but not Americans consistently reported feeling threatened after the threat manipulations, while both Indians and Americans acknowledged the threatening situations as threatening. Notably, the control analyses diminish statistical support for the Indians feeling more threatened following the threat manipulation. Also, in the initial control condition comparison, Indians report feeling less threatened than Americans on behalf of their country (for both the scale and individual question). I suggest considering these patterns along with some of the results in the opposite direction predicted in terms of a potential alternative explanation for some of the observed results.

While both Indians and Americans became more ingroup prosocial in some ways following threats, there are some results in the opposite direction for Indians. This pattern is especially interesting because it is only evident for change in group-importance types of variables among Indians. Also notably, the country outcome is the reference ingroup for the study. These measures for Indians were pre-to-post manipulation differences in rated importance of country and family groups. Instead of these ratings simply being an

instance of decreased ingroup prosociality, I propose that they could be instead be interpreted as part of a coping mechanism that preserves the individual's self-esteem, specifically as distancing from the ingroup. This follows Dechesne et al.'s (2000) finding that mortality salience increased people's distancing from their group when the group was perceived as having permeable boundaries (but not when they were perceived as impermeable). This explanation is consistent with terror management theory, especially in how it frames self-esteem as a worldview defensiveness outcome (e.g., Greenberg et al. 1997). While it is possible that participants were motivated to preserve the self-concept in relation to the group that has been threatened, there is no way to determine if this was the case. These findings raise the possibility that participants were responding in self-serving ways, and not necessarily defending ingroup prosocial worldviews. I assess this possibility in terms of the next two studies as well, and generally in the final discussion and conclusion (Chapter 9).

Methodological Considerations

The lack of results consistent with the theory across (and within) the cultures could be in part due to sampling. I was surprised to find so many demographic and other social variables differing between experimental conditions (across and within country groups). Some of the variables also seem fundamental to cultural differences between individualistic and collectivistic societies. Specifically, pre-manipulation, among the Americans, those in the control condition report that their country promotes interests of groups (compared to those of individuals) ($t = 2.127$, $p = 0.035$, two-tailed). Among the Indians, also pre-manipulation, those in the natural disaster condition report that their

family group was more important to them than those in the control condition (t = -1.997, p = 0.049, two-tailed), and this comparison approaches statistical significance for the terrorism condition (t = 1.841, p = 0.069, two-tailed). Though some of the control models adjust for these variables (among others), these are interesting patterns within the experimental conditions. I initially considered pooling both threat conditions and comparing the control condition to a combined threat condition group within each country. However, as I began to analyze the data and notice that results for the different types of threats differed a great deal, I decided this would not be appropriate, and the individual threats needed to be analyzed alone.

The outcomes Indians respond most to differ from those for Americans, and as discussed above, and some of their responses indicate less ingroup prosociality when threatened. While a historical context relatively high in threats may have shaped these responses and Indians' relatively collectivistic culture, the outcomes within a day-to-day or one-shot context are not consistently explained by the present theory. Results only suggest that Americans tend to respond most ingroup prosocially to threats, and that there are potential distancing processes among Indians. As discussed in the data section above, while Indians are more collectivistic than Americans, other societies are higher in collectivism, such as China (Hofstede 2010). While Indians were included largely for logistical reasons, there are still some differences in results between the samples, even when including many control variables. It would be of interest to replicate this study with Chinese participants, and perhaps to compare India as an intermediate society in terms of collectivism, between the United States and China (e.g., Sinha et al. 2001, citing Hofstede 1980).

The findings that suggest finding less support for threat manipulation effectiveness among Indians could be an artifact of data quality issues as mentioned in Chapter 3. Compared to the Americans, many more Indian cases were discarded due to data quality or inattention, the Indians had lower average attention scores, and Indians reported taking longer to complete the study. On the completion time, it is possible that Indians tended to misreport their completion time more so than Americans, such that Indians biased their reported times upward. This would be consistent with the plagiarism of written responses occurring primarily with the Indian participants. However, it is also possible that the sample of Indians included in the study were especially diligent, and because of this took the most time. While the pattern in percentages indicating that suspicion affected their behavior across cultures suggests a higher percentage of Americans than Indians (4.91% versus 2.44%), they do not differ statistically ($z = 1.187$, $p = 0.235$, two-tailed). The lower average attention scores for the included Indians contradicts the explanation that Indians acted especially diligently, though. A likely explanation (and perhaps the simplest) is a language barrier — Indians tend to have a non-English first language, while Americans are more likely to have English as their first language. Despite this, the data indicate that the Indians were on average paying less attention to the study. From this, it is possible that they were acquiescing (simply agreeing) or satisficing (simply saying what they thought the researchers wanted to hear) (e.g., Krosnick 1991), and reporting feeling more threatened than perhaps they honestly did at the end. Consistent with Americans paying more attention, and less likely to acquiesce or satisfice, they may have been more honest than the Indians about how threatened they felt. Both Americans and Indians, however, did acknowledge the

threatening situations as threatening. However, the ingroup prosociality results suggested that Americans may have internalized the threats more, because they tended to react more ingroup prosocially to threats than Indians, in at least some ways.

Plagiarism of written responses was an issue, but almost exclusively among the Indian participants. After finding this as an issue in the pretests, this was the reason the protocol instructions were revised to specify that participants must write a certain number of characters thoughtfully and in their own words. Cases where plagiarism was suspected were dropped (and typically not paid) as an attempt to minimize this issue. However, as discussed above, this could have led to an Indian sample that was uniquely attentive in some ways. In this sense, the control models and counterfactual analyses are great tools to help disentangle some of these potential biases. The conclusions largely stand, and suggest generally more threat responsiveness among Americans. The noteworthy exception is that the UC control model characteristics appear to predict Indian terrorism responses notably well.

Here I note that while I tested two separate cross-cultural predictions (reflecting greater American and Indian responsiveness to threats, respectively, 2A and 2B), there are two main reasons I used two-tailed criterion for these statistical tests. First, the same exact tests (output models) were used to assess both predictions. Second, the two-tailed standard is more conservative, and I predicting effects that I acknowledged could go in either direction and are not mutually exclusive, for reasons I discussed in Chapter 1. This was a stricter standard than the other directional tests ($p < 0.05$, one-tailed), but I maintain that it was an appropriate choice.

It is evident that I ran hundreds of models and tests in total. Without control variables, there were about 120 threat-comparisons between the two countries and the two types of threats, and about 120 interaction models. The analyses including control variables increases these counts about sixfold and fivefold, respectively, and the counterfactual model count is about equal to the interaction model total. The initial and manipulation check analyses are also relevant. Taken together, the total number of tests considered as part of the Study 1 results likely exceeds 2,000. Despite this, it is clear that I found more than five percent of the total tests statistically significant, more than ten percent at least approaching statistical significance, and more than ten percent meeting either of these standards in the direction predicted. Perhaps of more importance, I inferred potentially meaningful patterns from the results that did arise. These patterns suggest that the results likely reflect valid processes in the data, and perhaps the social world. Taking this into consideration, a higher threshold for significance (e.g., $p < 0.01$) may be of interest if trying to determine the most prominent results. Notably, the manipulation check outcomes were highly statistically significant.

The political climate in the United States in 2016 is of interest to consider in terms of Study 1. These data were collected during the summer months in 2016, before the U.S. Presidential election that November. However, some participants did mention the upcoming election, and some indicated anxiety about it. It would be interesting to conduct a natural experiment as a pre- and post-test of these questions for Americans who felt threatened by the 2016 Presidential election outcome.

Summary

The statistical results only somewhat support threat effects on ingroup prosociality, but they do suggest some interesting patterns, and potential specific ingroup prosociality effects that threat influences. Evidence of cross-cultural differences and culture in part explaining threat effects is limited. However, the results suggest that Americans tend to be more responsive to threats than Indians. While there are several noteworthy methodological limitations, I present a potential alternative explanation for the results observed, especially those in the opposite direction predicted for change in group importance ratings among Indians. This could suggest defensiveness or preservation of one's own self-esteem or ingroup-prosocial self-concept, rather than the ingroup. Despite not accommodating the ingroup prosociality worldview as proposed, this explanation is still consistent with terror management theory (TMT).

Chapter 5: Study 2 Methods, Data, and Analyses (Adherence to Status Orders)

In this chapter, I describe the methods, data, and analyses for Study 2, on status orders in groups.

Under threat, I predict stronger adherence to status orders in groups (Prediction 3) and a stronger preference for status orders (Prediction 4). The procedure was similar to Study 1 through the threat manipulation. Participants were screened and pretested (part of the status manipulation) before being invited to complete the group task.

Methods

Study 2 was presented as "Critical Choice and Group Interaction" to prevent suspicion about its true purpose. Participants were led to believe they were completing a group task that reflects a fictitious ability with a fictitious partner, and that pay for participating depended on their performance on the task. It was presented as paying a minimum of amount, but paying up to a higher amount based on performance (all participants actually received the maximum possible amount). Participation was estimated to take about 50 minutes, and the study paid $7 (presented as between $5 and $7 depending on group task performance). The study followed a 2x2 design, manipulating threat (presented as the other groups performances threatening the ability to earn a high payment, versus payments based on absolute performance) and status of the partner (high versus low). Participants in the sample (U.S. only) were randomly assigned to one of the four conditions.

Screening

Participants took the same screening questionnaire for both Study 2 and Study 3. Participants provided basic demographic information at this point (e.g., highest education in household and race/ethnicity). Both men and women were included in Study 2, but only women were included in Study 3. Those who did not indicate a gender or selected another option were eliminated from the participant pool. Gender was part of the partner status manipulation in that it was gender-matched, and including equal numbers of both men and women was intended to allow for some ability to determine gender differences in experimental effects if they arose.

At the end of the screening questionnaire, participants were asked if they have ever worked with other MTurk workers to complete a HIT, and if so, to describe their experience, and provide any comments. All workers, regardless of previous group study experience, were invited to provide any further comments about MTurk group studies.

Responses to the questions about previous group study experience were screened for suspicion expressed about deception used in these studies (e.g., fake partner studies, see Rinderknecht 2015). Those who expressed high levels of suspicion or skepticism about group studies were eliminated from the participant pool. Those expressing lower levels of suspicion or merely acknowledging the existence of deception studies remained in the pool, but most were not included in Study 2.

Pretesting

Following the screener stage and before the group study stage, participants took a short contrast sensitivity (fictitious ability) pretest (adapted from Rinderknecht and Doan

2016 unpublished). Similar to the group task, this was based on the standard experimental setting for status characteristics and expectation states research (e.g., Webster and Rashotte 2010 see also Chapter 1 description of these research programs). The pretest took about 15 minutes, and paid $0.50 via MTurk. This involved judging whether rectangular figures have more black or white space shaded. There was no clear correct answer to each problem, and the figures were designed to look ambiguous (pretest images retrieved from Riken_Avadur Photobucket media, 2016).

Participant and partner status were manipulated with the contrast sensitivity pretest scores. Participant instructions provided a chart defining below average, average, and above average ranges to increase salience of status. Using Turkitron questionnaire link randomization, participants were assigned to one of two versions of the questionnaire that at the end revealed either a high score (18 out of 20, in the superior range) or a low score (7 out of 20, in the poor range). This participant result determined which partner result would display during the group task — the partner always had the opposite score, creating either a low-self or high-self status order.

The pretest also functioned to screen out participants likely to experience usability issues (e.g., display and connectivity). In hindsight, the pretest instrument would have been revised to allow for more response time (the version used required judgments to be made within five seconds — if not, the instrument advanced to the next question), and for the images to be smaller and more comfortably displayed on many types of devices. However, the limited five-second window may have helped to reduce suspicion by not allowing participants too much time to inspect the figures and potentially determine that there were no correct answers. By missing one or more CS pretest questions, participants

were less likely to believe their scores, especially the high ones (at least one pretest participant commented on this). For this reason, sampling for Study 2 and Study 3 gave preference to participants who I screened as answering all CS pretest questions. Only a few men collected later than the rest of the sample to even the condition counts were in this group for Study 2. By comparison, the Study 3 sample included both women who missed a question and those who did not. Analyses for both Study 2 and Study 3 evaluated this missed pretest question indicator as a potential control variable.

Group Task Introduction

The group study interface was designed within Qualtrics to look like it used a special plugin to allow for the group connection. The instructions briefly explained this fictitious mechanism as within the UMDSURVEY platform (the unchangeable URL for Qualtrics surveys through the University of Maryland). Formatting adjustments such as font and color changes (the background largely masked the Qualtrics branding at the bottom of the screen), and a footer message about the fictitious plugin software version and redistribution warning text also served to increase believability.

The group study content was adapted from the Troyer (2002) software for the standard experimental setting for status characteristics and expectation states research. Following initial consent to share demographic and pretest score information with others in the group, the instrument confirmed the participant score from the pretest to reinforce the status manipulation. The system then began a fictitious partner matching process, timed to take about five minutes. In Study 2, the participant always appeared to be matched with one other participant, who was the task partner for the study.

Status Manipulation

The fictitious contrast sensitivity ability pretested and discussed in the instructions was intended to appear directly related to ability to perform on the partner contrast sensitivity task (the group task), making it a salient specific status characteristic. Participants were told that pay for the study (awarded a amount of a bonus beyond base pay) depended on performance on the task, so this was their incentive to do as well as possible. Following expectation states (EST) and status characteristics (SCT) thesoretical program (e.g., Berger et al. 1977), I expect low-status participants to defer to the CS judgments of high-status partners more so than high-status participants defer to the judgments of low-status partners.

As mentioned above, the information-sharing consent page confirming the participant's pretest score served to reinforce the participant status manipulation. The main partner status manipulation came from a page of information shared about the partner, as a brief profile including demographic and pretest score information. All partners were presented as 27-year-olds who are United States citizens and matched on the participant's gender, because including only test score information might have aroused suspicion. Partners also had what appeared to be a participant code number to further increase believability. In the high-self/low-partner status condition, participants received a score of 18 out of 20 (above average), and 7 out of 20 for the partner (below average). In the low-self/high-partner status condition, the scores were reversed, with participants receiving of 7 out of 20 points, and 18 out of 20 for the partner. These scores established a status hierarchy for performance expectations. To further reinforce this

status order, a table including the individual pretest scores was displayed much like at the end of the pretest, and along with this both the participant and partner's pretest scores were displayed below.

Threat Manipulation

Participants then received a threat manipulation similar to the pretests and Study 1. The situation was presented as directly relevant to the group task — the performance pay structure. In the control condition, the payment system was defined as based on absolute score ranges, and it was specified that the other groups participating in the study did not affect the participant's group's ability to earn a high payment. In the threat condition, the payment system was defined as based on performing better than other groups in the study (percentiles), and it was specified that the other groups threatened the participant's group's ability to earn a high payment. The payment definition tables are presented as follows (along with more detailed explanation):[13]

[13] Though the right parenthesis is missing for the "above average" row in Figure 1B, this is not expected to have affected reception of the manipulation in any meaningful way.

Figure 1A: Study 2 Payment Table: Control Condition

PAYMENT FOR TEAM CRITICAL CHOICE SCORES

Required Team Score		Total payment ($5 + MTurk bonus amount) per participant	
Superior	37-40	$7.00	($5+$2)
Above Average	33-36	$6.50	($5+$1.50)
Average	27-32	$6.00	($5+$1)
Below Average	22-26	$5.50	($5+$0.50)
Poor	0-21	$5.00	($5+$0)

Figure 1B: Study 2 Payment Table: Threat Condition

PAYMENT FOR TEAM CRITICAL CHOICE RANKINGS

Required Team Rank		Total payment ($5 + MTurk bonus amount) per participant	
Superior	Better than 85+% of all groups in this study	$7.00	($5+$2)
Above Average	Better than 60-84% of all groups in this study	$6.50	($5+$1.50
Average	Better than 40-59% of all groups in this study	$6.00	($5+$1)
Below Average	Better than 15-39% of all groups in this study	$5.50	($5+$0.50)
Poor	Better than 14% or less of all groups in this study	$5.00	($5+$0)

The threat manipulation was further reinforced with guided-thinking questions similar to the pretests and Study 1. The control condition situation and guided-thinking questions (each requiring a written response of at least 100 characters) were as follows:

Control condition text:

This week, a number of groups will complete this study. However, the other groups' performance scores will not affect your group's payments. The number of points your group earns is what determines your payment. When a group in this study scores a high number of points, it does not affect the ability of other groups to earn a high payment. In other words, the payments are non-zero-sum.

What do you think about being a member of your task group in this situation?

What is it like for you personally to be a member of your task group in this situation?

How do you feel about being a member of your task group in this situation?

The threat condition situation and questions were as follows:

Threat condition text:

This week, a number of groups will complete this study. The other groups' performance scores threaten your group's ability to earn a high payment because the ranking of your group's score relative to the other groups is what determines your payment. When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment. In other words, the payments are zero-sum, and high payments are scarce. This is why the other groups threaten your group.

What do you think about being a member of your task group in this threatening situation?

What is it like for you personally to be a member of your task group in this threatening situation?

How do you feel about being a member of your task group in this threatening situation?

Due to time and resource limitations, and because Study 1 did not present strong support for the predictions, Study 2 (and also Study 3) did not include a distracting task as terror management research does, and as Study 1 did. Study 2 transitioned immediately from the threat manipulation to final instructions for the group task.

Group Task Continued and Conclusion

The partners appeared to connect over the network and begin the partner contrast sensitivity task, which was similar to the pretest. They appeared to share their initial responses with each other, and to make a private final judgment. Participants were incentivized to do well on the task because their pay appeared to depend on the group score. A success or failure task in which actors are motivated to do their best is part of the scope conditions of status characteristics and expectation states research (e.g., Berger et al. 1977). The partner task included 20 total rounds, 16 of which were pre-programmed to disagree with the participant, which served to measure extent of deference to the partner.

Participants were probed for suspicion about the study with a series of questions. Data were excluded from analyses when participants expressed that suspicion most likely affected their behavior in concrete ways, when asked, or that they did not act as though information about the study was true. Data were also excluded if participants failed to acknowledge information consistent with their status manipulation (e.g., a low-status participant reporting scoring higher than their partner). As discussed in more detail below, the threat manipulation was treated more leniently. Participants were debriefed with general information about the study's purpose, learned that they would actually

receive the maximum possible payment amount, and were asked not to share details about their participants or the payments with others.

Study 2 Data

My final data include 208 cases, with 52 in each experimental condition, defined by self and partner status (self-low/partner-high versus self-high/partner-low) and threat versus no threat. Group study data were merged with screener responses and any flags noted from the screener and pretest stages. Within each condition, 26 are women and 26 are men. Because the unbalanced combined condition counts include as many as 62 cases and the gender groups within these include as many as 31 cases, the condition and gender counts were intentionally balanced. The condition and gender counts were evened by randomly dropping cases within each of the eight condition and gender groups. Preliminary analyses revealed potential differences in results between men and women, so some analyses include only men or women.

As discussed above, in selecting participants from the screener and pretest results, I gave preference to those most likely to be naïve about fictitious group studies (i.e., they did not strongly express suspicion about group studies not being real in screener), those who passed attention checks, and those who successfully answered all pretest questions (e.g., no major technical issues or missed questions). Because participants for both Study 2 and Study 3 were recruited similarly and placed into the same pool, these selection procedures were stricter for Study 2, for which most data collection took place before Study 3.

Outcome measures include the behavioral deference and status evaluations described above, as well as manipulation checks, and the demographic information collected in the screener (e.g., race/ethnicity and social class).

Data Acceptance and Quality

I excluded data from the final sample if I determined they were likely to be of poor quality, or the participant clearly indicated that suspicion about the study affected their behavior. Only one case was excluded (and pay denied) because the participant responded inappropriately to written questions. Four submissions were complete or nearly complete, but the participant did not submit for payment on MTurk or follow up later, so data for these cases were not used. There were 279 total cases collected and paid for. Of these cases, 229 were kept by the strictest standards to be included in the final data set, for an overall acceptance rate of 82.08%. However, due to the condition balancing discussed above, the analyses below use a balanced version of these data that includes 208 cases.[14]

Data acceptance rates by gender are 84.44% for the women only, and 79.86% for the men only. The difference between the women's and men's overall acceptance rates does not differ statistically ($z = 0.998$, $p = 0.319$, two-tailed). In the full sample, rates of accepting collected cases does not differ statistically across the conditions for the full sample or for the women only (chi square = 3.050, $p = 0.384$; $F = 4.785$, $p = 0.188$), but they approach statistical significance for the men only ($F = 6.942$, $p = 0.074$). These rates range from 76.71% to 87.32% for the full sample, 73.68% to 90.32% for the women, and

[14] Cases were also considered by more lenient standards, and this more lenient data set includes 264 cases, for a 94.62% acceptance rate. While these data are not analyzed in the present report, they may be of interest for future supplemental analyses.

66.67% to 87.14% for the men. Within the women and men groups, some condition comparisons are statistically significant or approaching significance. For the women only the difference between conditions 2 versus 4 approaches statistical significance, such that cases in condition 4 were less likely to be accepted than condition 2 (chi square = 2.87, p = 0.090). For the men only, comparisons between conditions 2 versus 4 and the combined status conditions are statistically significant, such that those in the high-status conditions were more likely to be kept (chi square = 4.47, p = 0.034, two-tailed; z = -2.119, p = 0.034, two-tailed), and the comparison between conditions 2 versus 3 also approached statistical significance in the same direction (chi square = 3.77, p = 0.052).

Assessment of the Study 2 Sample

Control variables (e.g., demographics) were used for control analyses (see Analyses section). See Appendix 2 for a list of control and outcome measures included in the Study 2 analyses. I found some potentially problematic differences in characteristics across the conditions. See description of analyses and tables (full-sample, women only, and men only) below.

Table 6A: Study 2 Demographic and Data Quality Variables: Full Sample

Study 2 Demographics: Full sample	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.019	52	0.038	52	0.000	52	0.096	52
American Indian/Alaskan Native indicator	0.000	52	0.000	52	0.038	52	0.000	52
Black/African American indicator	0.058	52	0.077	52	0.019	52	0.058	52
East Asian indicator	0.000	52	0.019	52	0.038	52	0.000	52
White/Caucasian indicator	0.962	52	0.885	52	0.981	52	0.923	52
Other race/ethnicity indicator	0.000	52	0.019	52	0.000	52	0.019	52
Racial/ethnic minority indicator	0.077	52	0.135	52	0.096	52	0.154	52
How often use MTurk to make basic ends meet	4.519	1.674 52	4.269	1.548 52	4.269	1.535 52	4.269	1.300 52
Highest education in household	3.346	1.999 52	3.788	2.154 52	3.865	2.179 52	3.673	2.027 52
Social class rating	3.000	0.970 52	2.885	1.149 52	3.327	0.964 52	2.923	1.135 52
Age in years	36.673	9.158 52	36.788	11.907 52	37.904	10.507 52	37.538	11.105 52
Indicates worked w/ other MTurkers - yes	0.596	52	0.615	52	0.692	52	0.558	52
Indicates worked w/ other MTurkers - yes or not sure	0.692	52	0.692	52	0.750	52	0.712	52
Indicates worked w/ other MTurkers - not sure	0.096	52	0.077	52	0.058	52	0.154	52
Self-reported completion time est. in minutes (recoded)	44.608	9.313 51	48.712	22.200 52	48.904	12.845 52	48.308	9.930 52
Flag for issues noted during study	0.077	52	0.058	52	0.096	0.298 52	0.173	0.382 52
Flag for comment indicating potential issue at end of group study	0.115	52	0.077	52	0.115	52	0.173	52
Flag - potential doubt/further scrutiny about keeping data	0.019	52	0.000	52	0.115	52	0.096	52

Study 2 Demographics: Full sample	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Flag for missed questions/technical trouble during pretest	0.000	52	0.077	52	0.077	52	0.000	52
Number of attention-check questions correct	3.000	0.000 52	2.981	0.139 52	3.000	0.000 52	3.000	0.000 52

Study 2 Demographics: Full sample	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.029	104	0.048	104	0.010	104	0.067	104
American Indian/Alaskan Native indicator	0.000	104	0.019	104	0.019	104	0.000	104
Black/African American indicator	0.067	104	0.038	104	0.038	104	0.067	104
East Asian indicator	0.010	104	0.019	104	0.019	104	0.010	104
White/Caucasian indicator	0.923	104	0.952	104	0.971	104	0.904	104
Other race/ethnicity indicator	0.010	104	0.010	104	0.000	104	0.019	104
Racial/ethnic minority indicator	0.106	104	0.125	104	0.087	104	0.144	104
How often use MTurk to make basic ends meet	4.394	1.610 104	4.269	1.416 104	4.394	1.604 104	4.269	1.423 104
Highest education in household	3.567	2.080 104	3.769	2.096 104	3.606	2.097 104	3.731	2.082 104
Social class rating	2.942	1.060 104	3.125	1.068 104	3.163	0.977 104	2.904	1.137 104
Age in years	36.731	10.570 104	37.721	10.759 104	37.288	9.827 104	37.163	11.463 104
Indicates worked w/ other MTurkers - yes	0.606	104	0.625	104	0.644	104	0.587	104
Indicates worked w/ other MTurkers - yes or not sure	0.692	104	0.731	104	0.721	104	0.702	104
Indicates worked w/ other MTurkers - not sure	0.087	104	0.106	104	0.077	104	0.115	104
Self-reported completion time est. in minutes (recoded)	46.680	17.123 103	48.606	11.428 104	46.777	11.387 103	48.510	17.114 104

Study 2 Demographics: Full sample	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Flag for issues noted during study	0.067	104	0.135	0.343 104	0.087	0.283 104	0.115	104
Flag for comment indicating potential issue at end of group study	0.096	104	0.144	104	0.115	104	0.125	104
Flag - potential doubt/further scrutiny about keeping data	0.010	104	0.106	104	0.067	104	0.048	104
Flag for missed questions/technical trouble during pretest	0.038	104	0.038	104	0.038	104	0.038	104
Number of attention-check questions correct	2.990	0.098 104	3.000	0.000 104	3.000	0.000 104	2.990	0.098 104

In the full sample, potentially problematic variables are Hispanic/Latino ethnicity, American Indian/Alaska Native ethnicity, White/Caucasian ethnicity, social class, indicating "not sure" for previous experience working with other MTurk workers, a flag variable indicating potential doubt or further scrutiny about whether to keep the case in the data, a flag variable indicating that an issue was experienced during the group study, and a flag for one or more missed questions during the pretest. For the Hispanic/Latino indicator, the difference in proportions across conditions approaches statistical significance (chi square = 7.28, $p = 0.063$), and the comparison between the combined non-threat conditions (1 and 3) and threat condition (2 and 4) is statistically significant ($z = 2.163$, $p = 0.031$, two-tailed). For the White/Caucasian indicator, proportions do not differ statistically across the conditions ($F = 4.841$, $p = 0.184$, but the combined threat condition contrast is statistically significant (non-threat conditions 1 and 3 versus threat conditions 2 and 4, $z = 2.005$, $p = 0.045$, two-tailed) and condition 2 versus condition 3

approaches statistical significance (chi square = 2.97, $p = 0.085$). For social class rating, means do not differ statistically across the conditions ($F = 1.88$, $p = 0.134$), but one contrast does (conditions 2 versus 3, $F = 4.54$, $p = 0.034$), and two contrasts approach statistical significance (the non-threat conditions 1 and 3 versus threat conditions 2 and 4, combined means of 3.163 versus 2.904, $t = 1.767$, $p = 0.079$, two-tailed; conditions 3 versus 4, $F = 3.79$, 0.053). For the flag indicating potential doubt or further scrutiny about whether to keep the case in the data, proportions differ statistically across the conditions (chi square = 9.197, $p = 0.027$, as do the combined status condition comparison (the low-status conditions 1 and 2 versus high-status conditions 3 and 4, $z = -2.974$, $p = 0.003$, two-tailed). Comparisons approaching statistical significance are between conditions 1 versus 3 and conditions 2 versus 3 (both chi square = 2.97 $p = 0.085$). For the flag indicating issues experienced during the group study, proportions do not differ statistically across the conditions (chi square = 4.396, $p = 0.222$, though the comparison between condition 2 versus 4 approached statistical significance (chi square = 3.10, $p = 0.076$). For the flag indicating one or more missed questions during the pretest, proportions differ statistically across the conditions (chi square = 8.320, $p = 0.040$), though none of the specific contrasts do.

Table 6B: Study 2 Demographic and Data Quality Variables: Women Only

Study 2 Demographics: Women only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.000	26	0.038	26	0.000	26	0.000	26
American Indian/Alaskan Native indicator	0.000	26	0.000	26	0.038	26	0.000	26
Black/African American indicator	0.077	26	0.077	26	0.038	26	0.077	26
East Asian indicator	0.000	26	0.000	26	0.038	26	0.000	26
White/Caucasian indicator	0.962	26	0.923	26	0.962	26	0.923	26
Other race/ethnicity indicator	0.000	26	0.000	26	0.000	26	0.000	26
Racial/ethnic minority indicator	0.077	26	0.115	26	0.115	26	0.077	26
How often use MTurk to make basic ends meet	4.077	1.354 26	3.962	1.455 26	4.269	1.638 26	4.269	1.373 26
Highest education in household	3.962	2.068 26	4.269	2.011 26	4.231	2.103 26	3.654	2.171 26
Social class rating	2.885	1.071 26	2.769	1.177 26	3.269	1.041 26	3.038	1.113 26
Age in years	39.000	9.312 26	38.308	12.914 26	35.038	10.490 26	38.308	11.196 26
Indicates worked w/ other MTurkers - yes	0.538	26	0.615	26	0.615	26	0.577	26
Indicates worked w/ other MTurkers - yes or not sure	0.692	26	0.731	26	0.692	26	0.769	26
Indicates worked w/ other MTurkers - not sure	0.154	26	0.115	26	0.077	26	0.192	26
Self-reported completion time est. in minutes (recoded)	45.000	10.029 25	47.538	16.481 26	47.115	8.111 26	51.808	9.883 26
Flag for issues noted during study	0.115	26	0.077	26	0.115	26	0.231	26
Flag for comment indicating potential issue at end of group study	0.115	26	0.077	26	0.154	26	0.192	26
Flag - potential doubt/further scrutiny about keeping data	0.000	26	0.000	26	0.154	26	0.077	26
Flag for missed questions/technical trouble during pretest	0.000	26	0.000	26	0.000	26	0.000	26
Number of attention-check questions correct	3.000	0.000 26	3.000	0.000 26	3.000	0.000 26	3.000	0.000 26

Study 2 Demographics: Women only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	sd, n	mean	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.019	52	0.000	52	0.000	52	0.019	52
American Indian/Alaskan Native indicator	0.000	52	0.019	52	0.019	52	0.000	52
Black/African American indicator	0.077	52	0.058	52	0.058	52	0.077	52
East Asian indicator	0.000	52	0.019	52	0.019	52	0.000	52
White/Caucasian indicator	0.942	52	0.942	52	0.962	52	0.923	52
Other race/ethnicity indicator	0.000	52	0.000	52	0.000	52	0.000	52
Racial/ethnic minority indicator	0.096	52	0.096	52	0.096	52	0.096	52
How often use MTurk to make basic ends meet	4.019	1.393 52	4.269	1.497 52	4.173	1.491 52	4.115	1.409 52
Highest education in household	4.115	2.026 52	3.942	2.137 52	4.096	2.070 52	3.962	2.095 52
Social class rating	2.827	1.115 52	3.154	1.073 52	3.077	1.064 52	2.904	1.142 52
Age in years	38.654	11.153 52	36.673	10.868 52	37.019	10.023 52	38.308	11.967 52
Indicates worked w/ other MTurkers - yes	0.577	52	0.596	52	0.577	52	0.596	52
Indicates worked w/ other MTurkers - yes or not sure	0.712	52	0.731	52	0.692	52	0.750	52
Indicates worked w/ other MTurkers - not sure	0.135	52	0.135	52	0.115	52	0.154	52
Self-reported completion time est. in minutes (recoded)	46.294	13.628 51	49.462	9.260 52	46.078	9.073 51	49.673	13.626 52
Flag for issues noted during study	0.096	52	0.173	52	0.115	52	0.154	52
Flag for comment indicating potential issue at end of group study	0.096	52	0.173	52	0.135	52	0.135	52
Flag - potential doubt/further scrutiny about keeping data	0.000	52	0.115	52	0.077	52	0.038	52
Flag for missed questions/technical trouble during pretest	0.000	52	0.000	52	0.000	52	0.000	52
Number of attention-check questions correct	3.000	0.000 52	3.000	0.000 52	3.000	0.000 52	3.000	0.000 52

For women only, the only potentially problematic variables are recoded completion time estimate and the flag indicating potential doubt or further scrutiny about whether to keep the case in the data. For the completion time estimate, means do not differ statistically across the conditions ($F = 1.56$, $p = 0.205$), though the contrast between conditions 1 versus 4 is statistically significant ($F = 4.40$, $p = 0.039$). For the flag indicating potential doubt or further scrutiny about whether to keep the case in the data, the difference in proportions across conditions approaches statistical significance (chi square = 7.782, $p = 0.051$), and the combined status condition comparison is statistically significant (the low-status conditions 1 and 2 versus high-status conditions 3 and 4, $z = -2.523$, $p = 0.012$, two-tailed).

Table 6C: Study 2 Demographic and Data Quality Variables: Men Only

Study 2 Demographics: Men only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.038	26	0.038	26	0.000	26	0.192	26
American Indian/Alaskan Native indicator	0.000	26	0.000	26	0.038	26	0.000	26
Black/African American indicator	0.038	26	0.077	26	0.000	26	0.038	26
East Asian indicator	0.000	26	0.038	26	0.038	26	0.000	26
White/Caucasian indicator	0.962	26	0.846	26	1.000	26	0.923	26
Other race/ethnicity indicator	0.000	26	0.038	26	0.000	26	0.038	26
Racial/ethnic minority indicator	0.077	26	0.154	26	0.077	26	0.231	26
How often use MTurk to	4.962	1.865	4.577	1.604	4.269	1.458	4.269	1.251

Study 2 Demographics: Men only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
make basic ends meet		26		26		26		26
Highest education in household	2.731	1.756 26	3.308	2.223 26	3.500	2.232 26	3.692	1.914 26
Social class rating	3.115	0.864 26	3.000	1.131 26	3.385	0.898 26	2.808	1.167 26
Age in years	34.346	8.551 26	35.269	10.846 26	40.769	9.905 26	36.769	11.180 26
Indicates worked w/ other MTurkers - yes	0.654	26	0.615	26	0.769	26	0.538	26
Indicates worked w/ other MTurkers - yes or not sure	0.692	26	0.654	26	0.808	26	0.654	26
Indicates worked w/ other MTurkers - not sure	0.038	26	0.038	26	0.038	26	0.115	26
Self-reported completion time est. in minutes (recoded)	44.231	8.751 26	49.885	27.035 26	50.692	16.252 26	44.808	8.832 26
Flag for issues noted during study	0.038	26	0.038	26	0.077	26	0.115	26
Flag for comment indicating potential issue at end of group study	0.115	26	0.077	26	0.077	26	0.154	26
Flag - potential doubt/further scrutiny about keeping data	0.038	26	0.000	26	0.077	26	0.115	26
Flag for missed questions/technical trouble during pretest	0.000	26	0.154	26	0.154	26	0.000	26
Number of attention-check questions correct	3.000	0.000 26	2.962	0.196 26	3.000	0.000 26	3.000	0.000 26

Study 2 Demographics: Men only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	sd, n	mean	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.038	52	0.096	52	0.019	52	0.115	52
American Indian/Alaskan Native indicator	0.000	52	0.019	52	0.019	52	0.000	52
Black/African American indicator	0.058	52	0.019	52	0.019	52	0.058	52
East Asian indicator	0.019		0.019		0.019		0.019	

Study 2 Demographics: Men only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	sd, n	mean	mean	sd, n	mean	sd, n
		52		52		52		52
White/Caucasian indicator	0.904	52	0.962	52	0.981	52	0.885	52
Other race/ethnicity indicator	0.019	52	0.019	52	0.000	52	0.038	52
Racial/ethnic minority indicator	0.115	52	0.154	52	0.077	52	0.192	52
How often use MTurk to make basic ends meet	4.769	1.733 52	4.269	1.345 52	4.615	1.694 52	4.423	1.433 52
Highest education in household	3.019	2.005 52	3.596	2.060 52	3.115	2.026 52	3.500	2.063 52
Social class rating	3.058	0.998 52	3.096	1.071 52	3.250	0.883 52	2.904	1.142 52
Age in years	34.808	9.681 52	38.769	10.651 52	37.558	9.718 52	36.019	10.932 52
Indicates worked w/ other MTurkers - yes	0.635	52	0.654	52	0.712	52	0.577	52
Indicates worked w/ other MTurkers - yes or not sure	0.673	52	0.731	52	0.750	52	0.654	52
Indicates worked w/ other MTurkers - not sure	0.038	52	0.077	52	0.038	52	0.077	52
Self-reported completion time est. in minutes (recoded)	47.058	20.099 52	47.750	13.287 52	47.462	13.329 52	47.346	20.077 52
Flag for issues noted during study	0.038	52	0.096	52	0.058	52	0.077	52
Flag for comment indicating potential issue at end of group study	0.096	52	0.115	52	0.096	52	0.115	52
Flag - potential doubt/further scrutiny about keeping data	0.019	52	0.096	52	0.058	52	0.058	52
Flag for missed questions/technical trouble during pretest	0.077	52	0.077	52	0.077	52	0.077	52
Number of attention-check questions correct	2.981	0.139 52	3.000	0.000 52	3.000	0.000 52	2.981	0.139 52

For men only, these potentially problematic variables are Hispanic/Latino ethnicity, White/Caucasian ethnicity, racial/ethnic minority indicated, frequency of using MTurk to make basic ends meet, social class, indicating "yes" for previous experience working with other MTurk workers, a flag variable indicating potential doubt or further

scrutiny about whether to keep the case in the data, and a flag for one or more missed questions during the pretest. For the Hispanic/Latino indicator, the difference in proportions across conditions is statistically significant (chi square = 9.037, $p = 0.029$), and the combined threat condition comparison is statistically significant (the non-threat conditions 1 and 3 versus threat conditions 2 and 4, $z = -1.957$, $p = 0.050$, two-tailed). For the White/Caucasian ethnicity indicator, proportions do not differ statistically across conditions (chi square = 5.361, $p = 0.147$), though the combined threat condition comparison approaches statistical significance ($z = 1.957$, $p = 0.050$, two-tailed). For racial/ethnic minority indicated, proportions do not differ statistically across the conditions (chi square = 3.632, $p = 0.304$), though the combined status condition comparison approaches statistical significance (the low-status conditions 1 and 2 versus high-status conditions 3 and 4, $z = -1.724$, $p = 0.085$). For rated frequency of using MTurk to make basic ends meet, means do not differ statistically across the conditions ($F = 1.08$, $p = 0.363$), though the comparison between conditions 1 versus 4 approaches statistical significance ($F = 2.88$, $p = 0.093$). For the rating of social class, means do not differ statistically across the conditions ($F = 1.44$, $p = 0.235$), though the comparison of conditions 3 versus 4 is statistically significant ($F = 4.13$, $p = 0.045$), and the comparison between non-threat conditions 1 and 3 versus threat conditions 2 and 4 approaches statistical significance (combined means 3.250 versus 2.904, $t = 1.729$, $p = 0.087$). For the indicator for responding "yes" for previous experience working with other MTurk workers, proportions do not differ statistically across the conditions (chi square = 3.146, $p = 0.370$), though the comparison between conditions 3 versus 4 approaches statistical significance (chi square = 2.97, $p = 0.085$). For the flag variable indicating potential

doubt or further scrutiny about whether to keep the case in the data, proportions do not differ statistically across the conditions (chi square = 3.537, $p = 0.316$), though the comparison between the combined status conditions (1 and 2 versus 3 and 4) approaches statistical significance ($z = -1.682$, $p = 0.093$, two-tailed). For the flag indicating one or more missed questions during the pretest, proportions differ statistically across the conditions (chi square = 8.667, $p = 0.034$). As discussed above, the only participants flagged for this are a few men whose data was collected later than the rest to reach sufficient condition counts. Mean age in years does not differ statistically across the conditions, but the comparison between conditions 1 versus 3 is statistically significant ($F = 5.18$, $p = 0.025$), and the comparisons between conditions 2 versus 3 ($F = 3.80$, $p = 0.054$) and the combined low-status versus combined high-status conditions ($t = -1.985$, $p = 0.050$, two-tailed) approaches statistical significance

Other variables that were evaluated but not statistically significant or approaching significance in any of the full sample or single-gender comparisons are racial/ethnic group indicators for Black or African American (chi square = 1.824, $p = 0.610$), East Asian (chi square = 3.720, $p = 0.293$), and other (chi square = 2.019, $p = 0.568$), education level ($F = 0.35$, $p = 0.788$), indicator for having responded either "yes" or "not sure" for previous experience working with other MTurk workers (chi square = 0.562, $p = 0.905$), and flag for comments potentially relating to an issue ($F = 2.319$, $p = 0.509$). No Study 2 participants in the final balanced sample identify as Native Hawaiian or Pacific Islander, South American Indigenous or Native, South Asian, Southeast Asian, or West Asian/Middle Eastern. Also, none of the Study 2 participants are flagged as having

administrative issues (e.g., taking the screener more than once) or indicating suspicion about group studies during the screener.

For the American Indian/Alaska Native indicator, proportions do not differ statistically across the conditions in the full sample (chi square = 6.058, $p = 0.109$, and though the difference of proportion logistic regression analyses do not reveal any statistical differences, initial contrasts using differences of means and linear regression did (conditions 1 versus 3, conditions 3 versus 4, and conditions 2 versus 3, all $F = 4.08$, $p = 0.045$). The same is true for the "not sure" indicator for previous experience working on a task with other MTurkers. Proportions do not differ statistically across the conditions (chi square = 3.098, $p = 0.377$), the difference of proportion and logistic regression analyses do not reveal any problematic statistical differences, though the initial post-estimation contrast from a linear regression found a difference approaching statistical significance between conditions 3 and 4 ($F = 2.75$, $p = 0.099$). These initial results are why these last two indicator variables were included as full sample control variables.

Outcome Measures

The behavioral measure of deference is whether the participant switches to the partner's answer when their answers disagree. This was programmed to happen several times. Switching the answer more often indicates higher partner status. The participant's response for each round is coded as an indicator variable for whether they stayed with their original response, and the mean across the 16 programmed-partner-switch rounds is the participant-stay-score (a mean between 0 and 1). Higher mean scores indicate less deference, and regarding the partner as lower in status.

Participants answered several questions about the their own and the partner's status, including ratings of competence, intelligence, value of contributions, influence (situational and general impression), and respect (situational and general impression). These outcomes were combined into an index (Chronbach's $\alpha = 0.957$). Questions from the 16-item SDO_7 social dominance orientation scale (Ho, Sidanius, Kteily, Sheehy-Skeffington, Pratto, Henkel, Foels, and Stewart 2015) measure preference for inequalities in groups, a social orientation I propose is relevant. Depending on the reference group, we can consider these inequalities within or among groups. The scale includes four dimensions (pro- and con-trait dominance and antiegalitarianism, respectively). An example question (pro-trait dominance) is extent of agreement with "Some groups of people are simply inferior to other groups." Questions also asked about cohesion (feeling as part of the group) and wanting to work with members of the group again. These items were combined into a single scale with very high reliability (Chronbach's $\alpha = 0.965$). Items designed to measure cohesion were also asked, including the extent to which the participant felt it was important to earn as much as possible, whether they tried their best at the task, extent they felt like part of the group, interest in a fictitious future related study, and interest in being matched with the partner from Study 2 again.

Participants then answered several manipulation-check questions, including those about personal and group-level feelings of threat (these question lists were validated during pretesting and Study 1), and these questions were combined into scales, feeling personally threatened (Chronbach's $\alpha = 0.945$) and feeling threatened on behalf of one's group, excluding the anxious for the group item (Chronbach's $\alpha = 0.939$). Due to a typographical error, the question intended to be about feeling anxious for the task group

asked about feeling anxious for one's country. This question is not included in the feeling group threatened scale, but it is addressed separately in the results. They also answered questions about their understanding of the status and threat manipulations.

Study 2 Analyses

The comparisons of demographics and outcome measures across conditions used tests of differences between conditions and regression analyses as described in the Analyses Overview section in Chapter 2. For continuous outcome variables, these tests accommodated means (e.g., ttest and linear regression), and for indicator outcome variables, these tests accommodated proportions (e.g., prtest in *Stata* and logistic regression). When the comparisons between conditions include control variables (control models specified below), the coefficient of the experimental condition (status or threat manipulation) within a regression model or a post-estimation test of differences of marginal means represents this statistical comparison. If the main analyses are initially regression models, control variables were simply added for the control model analyses.

To test the assumption that people defer more to high-status partners than low-status partners (and occupying the complementary status position), I compared the behavioral deference and status rating scores across the status conditions within each respective threat condition, and also pooled the results to test both low-status partner conditions (non-threat and threat) against both high-status partner conditions. If the differences of means are statistically significant such that those in the high-status partner conditions exhibit more deference and rate their partners as higher in status than those in the low-status positions, these results would support the assumption.

To test Prediction 3, that threats increase status-consistent behaviors and evaluations, I tested for differences in means between the non-threat threat condition within the respective status conditions. Status-consistent responses are more deference among participants with high-status partners, and higher evaluations of the partners' status, and the opposite for participants with low-status partners. Statistically significant threat comparisons in the predicted directions would support Prediction 3. Differences in the threat coefficients by status were also tested using the *suest* procedure in *Stata* (help *suest*), to assess whether the threat effect statistically differs between the participants with high- compared to low-status partners. The test statistic is chi-square, which is one-tailed. Because the test is directional, the statistical significance threshold was adjusted in the direction predicted, with $p < 0.10$ being the threshold for statistical significance, and $p < 0.20$ being the threshold for approaching statistical significance. Statistically significant differences of coefficients in the direction predicted would support Prediction 3.

To test Prediction 4, that threats increase preferences for status orders, I tested for differences in means between the non-threat and threat conditions. Statistically significant threat comparisons such that preferences for status orders are higher in threat conditions would support Prediction 4.

Study 2 Control Models

Because the findings in the initial assessment of the sample suggest unevenness across conditions in potentially problematic ways, I evaluated the outcomes controlling for these variables, and compared these results with the main analyses. I included the following variables in the control models:

Full sample controls:

- Hispanic/Latino indicator
- American Indian/Alaska Native indicator
- White/Caucasian indicator
- Social class rating
- Previous experience with MTurk group, "not sure" indicated
- Flag for further evaluation or doubt whether to keep case in data
- Flag for having issues during the group study
- Flag for having missed answering at least one question during the pretest

Women-only controls:

- Completion time estimate (recoded)
- Flag for further evaluation or doubt whether to keep case in data

Men-only controls:

- Hispanic/Latino indicator
- White/Caucasian indicator
- Racial/ethnic minority indicator
- Frequency of using MTurk to make basic ends meet
- Social class rating
- Previous experience with MTurk group, "yes" indicated
- Flag for further evaluation or doubt whether to keep case in data
- Flag for having missed answering at least one question during the pretest
- Age in years

As in Study 1, in the event the statistical software excluded any of these variables due to colinearity, results from the remaining model are presented. Also, as discussed above, the American Indian/Alaska Native indicator and the previous experience with MTurk group "not sure" indicator were included as control variables based on initial analyses that found potential statistical issues, though the variables were not ultimately determined to be potentially problematic. However, including these variables is not expected to notably change or undermine the validity of results, so they were included in the present analyses.

Chapter 6: Study 2 Results and Discussion

This chapter presents and discusses the results from Study 2, on status orders in groups.

The Study 2 results provide only minimal statistical support for the general prediction. Most of this support is from manipulation-check questions. Taking the results together, they do not clearly support Prediction 3 (increase in adhering to status orders under threat), and they do not support Prediction 4 (increase in preference for status orders under threat, or for relevant cohesion outcomes). I consider the possibility that the results observed reflect self-serving motivations to lessen anxiety about how the threat will affect the participant personally through their group's performance, instead of ingroup prosociality worldview motives as originally proposed.

The control models for Study 2 are as follows. See Chapter 5 for specific information on variables for the control models.

Full sample controls:
- Hispanic/Latino indicator
- American Indian/Alaska Native indicator
- White/Caucasian indicator
- Social class rating
- Previous experience with MTurk group, "not sure" indicated
- Flag for further evaluation or doubt whether to keep case in data
- Flag for having issues during the group study
- Flag for having missed answering at least one question during the pretest

Women-only controls:
- Completion time estimate (recoded)
- Flag for further evaluation or doubt whether to keep case in data

Men-only controls:
- Hispanic/Latino indicator
- White/Caucasian indicator
- Racial/ethnic minority indicator
- Frequency of using MTurk to make basic ends meet
- Social class rating
- Previous experience with MTurk group, "yes" indicated

- Flag for further evaluation or doubt whether to keep case in data
- Flag for having missed answering at least one question during the pretest
- Age in years

Initial Assumption: Greater deference to higher-status individuals

I first assess support for the initial assumption that individuals defer more to high-status than low-status person in groups. See tables below for means by condition. The results consistently support this for the proportion of stay responses during the group task, which indicate more deference to the partner in the low-status self/high-status partner condition than the high-status self/low-status partner condition. In the full sample, there are statistically significant differences between the status conditions (1 and 2 combined versus 3 and 4 combined (t = -17.546, p<0.001), and the status comparisons within the non-threat and threat conditions, respectively (1 versus 3, F = 179.77, p <0.001; 2 versus 4, F = 130.28, p <0.001). Statistical support does not differ by gender or control analyses.

Results consistently support the initial assumption for the partner status ratings as well, with higher scores indicating evaluation of the partner as higher in status. In the full sample, there are statistically significant differences between the combined status conditions (1 and 3 combined versus 2 and 4 combined, t = 16.025, p<0.001), and the status comparisons within the non-threat and threat conditions, respectively (F = 149.73, p <0.001; F = 108.14, p <0.001). Again, statistical support does not differ by gender or control analyses.

Results also consistently support initial the initial assumption for proportion indicating preference to be matched with the partner again in a fictitious future study. In the full sample, there are statistically significant differences between the combined status

conditions (z = 7.113, p<0.001), and the status comparisons within the non-threat and threat conditions, respectively (both chi square = 5.029, p <0.001). Again, statistical support does not differ by gender or control analyses.[15]

Taken together, these results support the initial assumption of greater deference to higher-status individuals, and indicate that the status manipulation was effective.

Prediction 3: Increased Adherence to Status Orders under Threat

Prediction 3 states that when threatened, the difference in status outcomes between low-status task partners and high-status task partners will be greater than when not under threat. This is such that threat increases deference to high-status partners and evaluations of them as higher in status, and decreases deference to low-status partners and evaluations of them as higher in status. See tables below for more details about these outcomes. The difference of coefficients tables do not include statistical significance notation because none of these results are statistically significant or approaching statistical significance.

To test whether the response pattern is such that threatened low-status participants are especially positively responsive on the outcomes (i.e., regarding their high-status partner as having higher status) and threatened high-status participants were especially negatively responsive on their outcomes (i.e., regarding their low-status partner as having lower status), I test whether the coefficients differ statistically across two regression models using the *suest* command in *Stata*. These results are interpretable as whether the

[15] Results including control variables for men alone not available due to convergence issues with logistic regression models.

status outcomes are amplified due to threat (i.e., larger status coefficients in the threat than non-threat models).

The following tables show means across the experimental conditions.

Table 7A: Study 2 Prediction 3 Outcomes: Full Sample

Study 2 Prediction 3 Outcomes: Full sample	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	0.240	0.208 52	0.270	0.267 52	0.798	0.160 52	0.745	0.200 52
Partner status evaluations (scale)	42.154	5.192 52	41.115	6.611 52	25.327	7.707 52	26.745	8.183 51
Want to be matched with partner again	0.942	52	0.942	52	0.500	52	0.500	52

Study 2 Prediction 3 Outcomes: Full sample	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	**0.255*****	0.238 104	**0.772*****	0.182 104	0.519	0.335 104	0.508	0.335 104
Partner status evaluations (scale)	**41.635*****	5.938 104	**26.029*****	7.939 103	33.740	10.688 104	34.000	10.335 103
Want to be matched with partner again	**0.942*****	104	**0.500*****	104	0.721	104	0.721	104

Table 7B: Study 2 Prediction 3 Outcomes: Women Only

Study 2 Prediction 3 Outcomes: Women only	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	0.262	0.211 26	0.269	0.296 26	0.810	0.136 26	0.752	0.184 26
Partner status evaluations (scale)	42.769	4.877 26	42.192	5.817 26	26.346	6.858 26	28.360	7.847 25
Want to be matched with partner again	0.962	 26	0.923	 26	0.654	 26	0.577	 26

Study 2 Prediction 3 Outcomes: Women only	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	**0.266*****	0.255 52	**0.781*****	0.163 52	0.536	0.328 52	0.511	0.345 52
Partner status evaluations (scale)	**42.481*****	5.323 52	**27.333*****	7.356 51	34.558	10.172 52	35.412	9.759 51
Want to be matched with partner again	**0.942*****	 52	**0.615*****	 52	0.808	 52	0.750	 52

Table 7C: Study 2 Prediction 3 Outcomes: Men Only

Study 2 Prediction 3 Outcomes: Men only	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	0.219	0.206 26	0.272	0.240 26	0.786	0.182 26	0.738	0.219 26
Partner status evaluations (scale)	41.538	5.515 26	40.038	7.275 26	24.308	8.484 26	25.192	8.348 26
Want to be matched with partner again	0.923	26	0.962	26	0.346	26	0.423	26

Study 2 Prediction 3 Outcomes: Men only	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Mean self (stay) score during task	**0.245*****	0.223 52	**0.762*****	0.201 52	0.502	0.345 52	0.505	0.327 52
Partner status evaluations (scale)	**40.788*****	6.436 52	**24.750*****	8.345 52	32.923	11.219 52	32.615	10.783 52
Want to be matched with partner again	**0.942*****	52	**0.385*****	52	0.635	52	0.692	52

The following tables show differences in status coefficients by threat.

Table 8A: Study 2 Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Full Sample

Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Full sample	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators), model n	threat status coef.	threat status R-squared (pseudo for indicators), model n	suest chi-square	***p* (two-tailed)**
Mean self (stay) score during task	-0.083	0.558	0.698 104	0.475	0.508 104	2.020	0.156
Partner status evaluations (scale)	2.457	-16.827	0.626 104	-14.370	0.488 103	1.610	0.205
Want to be matched with partner again	0.000	-2.793	0.228 104	-2.793	0.228 104	0.000	1.000

Table 8B: Study 2 Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Women Only

Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Women only	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators)	threat status coef.	threat status R-squared (pseudo for indicators)	suest chi-square	***p* (two-tailed)**
Mean self (stay) score during task	-0.065	0.548	0.712 52	0.483	0.500 52	0.610	0.434
Partner status	2.591	-16.423	0.665	-13.832	0.512	1.070	0.302

Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Women only	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators)	threat status coef.	threat status R-squared (pseudo for indicators)	suest chi-square	***p* (two-tailed)**
evaluations (scale)			52		51		
Want to be matched with partner again	0.408	-2.583	0.175 52	-2.175	0.153 52	0.090	0.769

Table 8C: Study 2 Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Men Only

Differences in Status Coefficients by Threat for Prediction 3 Outcomes: Men only	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators)	threat status coef.	threat status R-squared (pseudo for indicators)	suest chi-square	***p* (two-tailed)**
Mean self (stay) score during task	-0.101	0.567	0.689 52	0.466	0.517 52	1.510	1.510
Partner status evaluations (scale)	2.385	-17.231	0.601 52	-14.846	0.483 52	0.680	0.411
Want to be matched with partner again	-0.408	-3.121	0.302 52	-3.529	0.316 52	0.090	0.769

Stay-switch score: For the proportion of stay responses during the group task, for which lower scores indicate more deference to the partner, the overall differences across

conditions are statistically significant (F =103.40, p <0.001). The threat effects are not statistically significant, though in the opposite direction predicted, such that threat decreases deference among low-status participants and increases deference among high-status participants (comparing by threat within the status conditions, conditions 1 versus 2, F = 0.52, p = 0.471; conditions 3 versus 4, F = 1.62, p = 0.205). The difference in status coefficients result is not statistically significant and in the opposite direction predicted (chi-square = 2.02, p = 0.156). See initial assumption results above for more details on the status effects.

Gender and Controls: For women only when including control variables, the difference in coefficient result remains not statistically significant but changes to the direction predicted (chi square = 1.70, p = 0.192). Among men, including control variables, the difference in status coefficients by threat approaches statistical significance in the opposite direction predicted (chi square = 2.77, p = 0.096).

These stay-switch score results do not support Prediction 3.

Partner status rating scale: For evaluations of the partner's status, the statistical conclusions are the same as those for the stay-switch score above. The overall difference across conditions is statistically significant (F = 85.98, p <0.001). For the threat conditions within the status conditions, results again not statistically significant, though the pattern is again in the opposite direction predicted, such that threat decreases low-status participants' evaluations of their high-status partners, but threat increases high-status participants' evaluations of their low-status partners (conditions 1 versus 2, F = 0.52, p = 0.473; conditions 3 versus 4, F = 0.18, p = 0.672). The difference of status coefficients within the non-threat and threat conditions, respectively, is again not

statistically significant and in the opposite direction predicted (chi square = 0.28, p = 0.594).

These subjective status evaluation results do not support Prediction 3.

Preference for same partner again (status): Proportion indicating preference to be matched with the partner again in a fictitious future study is assessed as both a status outcome and a cohesion outcome (see also Prediction 4 below). Here it is assessed as a status outcome. Because I examine it in two different ways, these tests are two-tailed. The proportions differ statistically across conditions (chi square = 50.589, p <0.001). The estimates are the same for each threat condition within the status conditions, and there is no difference in the status coefficients by threat (both chi square = 0.00, p = 1.000).

Gender and Controls: For the women only, neither result is statistically significant, though the low-status threat comparison is in the opposite direction predicted (z = 0.595, p = 0.552), and the high-status threat comparison is in the direction predicted (z = 0.570, p = 0.569). The difference in status coefficients by threat is not statistically significant, though in the direction predicted (chi square = 0.09, p = 0.769). For the men only, neither result is statistically significant, though the low-status threat comparison is in the direction predicted (z = -0.595, p = 0.552), and the high-status threat comparison is in the opposite direction predicted (z = -0.570, p = 0.569). Also, while the difference in coefficient result remains not statistically significant, for men it is in the direction predicted (chi square = 0.09, p = 0.769).[16]

These results for the proportion wanting to be matched with the same partner again do not support Prediction 3.

[16] As previously noted, results including control variables for men alone are not available due to convergence issues with logistic regression models.

Taken together, these results do not support Prediction 3.

Prediction 4: Increased Preference for Status Orders under Threat

Prediction 4 states that threatened individuals prefer status orders more so than non-threatened individuals. I measured this using the social dominance orientation scale (SDO_7, Ho et al. 2015) as well as some cohesion outcomes (e.g., feeling part of the group). I examine wanting to be matched with the partner again as a cohesion outcome; above I examined it as a status outcome.

Table 9A: Study 2 Prediction 4 Outcomes: Full Sample

Study 2 Prediction 4 Outcomes: Full sample	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	35.255	22.073 51	37.843	21.033 51	35.981	23.644 52	32.314	21.286 51
Important to earn as many points possible	6.673	0.901 52	6.712	0.637 52	**6.577***	0.825 52	**6.154***	1.211 52
Tried best at task	**6.923†**	0.269 52	**6.788†**	0.572 52	6.923	0.436 52	6.904	0.298 52
Felt like part of the group	5.577	1.601 52	5.692	1.351 52	5.038	1.878 52	4.596	1.774 52
Want to be matched with partner again	0.942	52	0.942	52	0.500	52	0.500	52

Study 2 Prediction 4 Outcomes: Full sample	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	36.549	21.492 102	34.165	22.473 103	35.621	22.770 103	35.078	21.237 102
Important to earn as many points possible	**6.692***	0.777 104	**6.365***	1.053 104	6.625	0.861 104	6.433	1.003 104
Tried best at task	6.856	0.450 104	6.913	0.372 104	6.923	0.360 104	6.846	0.457 104
Felt like part of the group	**5.635*****	1.475 104	**4.817*****	1.832 104	5.308	1.758 104	5.144	1.663 104
Want to be matched with partner again	**0.942*****	104	**0.500*****	104	0.721	104	0.721	104

Table 9B: Study 2 Prediction 4 Outcomes: Women Only

Study 2 Prediction 4 Outcomes: Women only	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	29.560	18.903 25	32.731	18.688 26	31.615	19.898 26	31.000	22.993 25
Important to earn as many points possible	6.654	1.056 26	6.692	0.679 26	**6.577****	0.902 26	**5.769****	1.423 26
Tried best at task	6.962	0.196 26	6.846	0.543 26	7.000	0.000 26	6.923	0.272 26
Felt like part of	5.577	1.701	6.000	1.200	4.654	1.853	4.577	1.770

Study 2 Prediction 4 Outcomes: Women only	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
the group		26		26		26		26
Want to be matched with partner again	0.962	26	0.923	26	0.654	26	0.577	26

Study 2 Prediction 4 Outcomes: Women only	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	31.176	18.674 51	31.314	21.256 51	30.608	19.250 51	31.882	20.716 51
Important to earn as many points possible	**6.673***	0.879 52	**6.173***	1.248 52	**6.615†**	0.973 52	**6.231†**	1.198 52
Tried best at task	6.904	0.409 52	6.962	0.194 52	6.981	0.139 52	6.885	0.427 52
Felt like part of the group	**5.788*****	1.473 52	**4.615*****	1.795 52	5.115	1.822 52	5.288	1.661 52
Want to be matched with partner again	**0.942*****	52	**0.615*****	52	0.808	52		0.437 52

Table 9C: Study 2 Prediction 4 Outcomes: Men Only

Study 2 Prediction 4 Outcomes: Men only	**CONDITION 1 (Low-status, no threat)**		**CONDITION 2 (Low-status, threat)**		**CONDITION 3 (High-status, no threat)**		**CONDITION 4 (High-status, threat)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	40.731	23.829 26	43.160	22.362 25	40.346	26.549 26	33.577	19.882 26
Important to earn as many points possible	6.692	0.736 26	6.731	0.604 26	6.577	0.758 26	6.538	0.811 26
Tried best at task	6.885	0.326 26	6.731	0.604 26	6.846	0.613 26	6.885	0.326 26
Felt like part of the group	5.577	1.528 26	5.385	1.444 26	**5.423†**	1.858 26	**4.615†**	1.813 26
Want to be matched with partner again	0.923	26	0.962	26	0.346	26	0.423	26

Study 2 Prediction 4 Outcomes: Men only	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Social dominance orientation scale	41.922	22.922 51	36.962	23.473 52	40.538	24.978 52	38.275	21.473 51
Extent important to earn as many points possible	6.712	0.667 52	6.558	0.777 52	6.635	0.742 52	6.635	0.715 52
Extent tried best at task	6.808	0.487 52	6.865	0.486 52	6.865	0.486 52	6.808	0.487 52
Extent felt like part of the group	5.481	1.475 52	5.019	1.863 52	5.500	1.686 52	5.000	1.669 52
Want to be matched with partner again	0.942	52	0.385	52	0.635	52	0.692	52

Social Dominance Orientation Scale: For social dominance orientation, in the full sample means do not differ significantly across the conditions ($F = 0.55$, $p = 0.646$). Comparing by threat within the status conditions, results are not statistically significant, though in the direction predicted for the low-status conditions ($F = 0.35$, $p = 0.554$), and opposite of the direction predicted for the high-status conditions ($F = 0.71$, $p = 0.400$). Comparing the non-threat conditions combined (1 and 3) to the threat conditions combined (2 and 4), the difference is not statistically significant, though in the opposite direction predicted ($t = 0.177$, $p = 0.860$, two-tailed).

Gender and Controls: The results for women only are also not statistically significant, but unlike the full sample and men only results, the combined threat condition means are in the direction predicted ($t = -0.322$, $p = 0.748$, two-tailed). In the overall results including control variables, results are also not statistically significant, though the combined threat condition means are also in the direction predicted ($t = 0.34$, $p = 0.735$, two-tailed).

Cohesion Outcomes: I assess group cohesion-related outcomes as part of the Prediction 4 analyses. Similar to how Prediction 4 predicts an increase in preference for status orders under threat, the general prediction presented in Chapter 1 predicts increase an in ingroup prosociality under threat, which these cohesion outcomes reflect.

Important to earn profit points: For the rating of how important it was to earn as many profit points as possible, means across the conditions differ statistically in the full sample ($F = 4.06$, $p = 0.008$). Comparing by threat within the status conditions, the result for the low-status conditions is not statistically significant, though in the direction predicted ($F = 0.05$, $p = 0.831$). The result for the high-status conditions is opposite of

the direction predicted and statistically significant ($F = 5.53$, $p = 0.020$). Comparing the non-threat conditions combined to the threat conditions combined, the difference is not statistically significant, though in the opposite direction predicted ($t = 1.484$, $p = 0.139$, two-tailed).

Of potential interest, the combined status comparison is statistically significant such that high-status participants rate themselves lower on this measure ($t = 2.549$, $p = 0.012$). The status comparison for the threat conditions is also statistically significant ($F = 9.61$, $p = 0.002$). The difference in status coefficients by threat condition approaches statistical significance, such that the threat conditions experience a greater decrease in this rating with increasing status than the non-threat conditions do (chi square = 3.34, $p = 0.068$).

Gender and Controls: For men only, means do not differ statistically across the conditions ($F = 0.41$, $p = 0.748$). Also, their combined threat condition comparison values do not differ, and the threat comparison within high-status conditions is not statistically significant ($F = 0.04$, $p = 0.850$). For women only, the combined threat condition comparison approaches statistical significance in the opposite direction predicted ($F = 1.800$, $p = 0.075$, two-tailed). For both men and women, including control variables the low-status threat comparisons remain not statistically significant, but they change to the opposite direction predicted ($F = 0.17$, $p = 0.678$ and $F = 0.11$, $p = 0.746$, respectively). For women only, the combined threat comparison result including these controls is statistically significant ($t = -2.00$, $p = 0.049$).

Of potential interest, the coefficient comparison result is statistically significant for women (chi square = 4.34, $p = 0.037$), but it is no longer statistically significant when

including control variables (chi square = 2.44, $p = 0.118$). For men, the coefficient comparison, combined status comparison, and threat condition status comparison results are not statistically significant (chi square = 0.07, $p = 0.786$; t = 1.083, $p = 0.281$, two-tailed; and $F = 0.90$, $p = 0.345$).

Tried best at task: For the rating of extent the participant tried their best during the task, means across the conditions do not differ statistically in the full sample ($F = 1.29$, $p = 0.280$). Comparing by threat within the status conditions, the result for the low-status conditions approaches statistical significance in the opposite of the direction predicted, ($F = 2.78$, $p = 0.097$). The result for the high-status conditions is not statistically significant, though in the direction predicted ($F = 0.06$, $p = 0.812$). Comparing the non-threat conditions combined to the threat conditions combined, the result is also not statistically significant, though opposite of the direction predicted ($t = 1.347$, $p = 0.179$, two-tailed).

Gender and Controls: For the women only, the low-status threat comparison is not statistically significant, though still in the opposite direction predicted ($F = 1.70$, $p = 0.196$).

Of potential interest, for men only and including control variables, the difference in status coefficients between threat and non-threat models approaches statistical significance, such that the increase in this rating with status is greater for threatened than non-threatened participants (chi-square = 2.83, $p = 0.093$). However, status comparisons within the non-threat and the threat conditions are both not statistically significant ($F = 0.01$, $p = 0.914$; and $F = 2.19$, $p = 0.142$, respectively).

Feel part of the group: For the rating of whether the participant felt like they were part of their task group, means across the conditions differ statistically in the full sample

($F = 4.84$, $p = 0.003$). None of the threat comparisons are statistically significant, though the low-status comparison is in the direction predicted ($F = 0.13$, $p = 0.724$), and the high-status and combined comparisons are in the opposite direction predicted ($F = 1.84$, $p = 0.177$; and $t = 0.689$, $p = 0.492$, two-tailed, respectively).

Of potential interest, the combined status condition comparison is statistically significant such that high-status participants feel less like part of the group ($t = 3.544$, $p = 0.001$, two-tailed), and this is also the case for the status comparison within the threat conditions ($F = 11.30$, $p = 0.001$).

Gender and Controls: For women only, the combined threat condition comparison remains not statistically significant, though is in the direction predicted ($t = -0.506$, $p = 0.307$). For men only the means do not differ statistically across the conditions ($F = 1.73$, $p = 0.165$), and all threat comparisons are in the opposite direction predicted. The low-status threat comparison is not statistically significant, though in the direction predicted ($F = 0.17$, $p = 0.679$). For men and when including control variables, the high-status threat comparison is statistically significant in the opposite direction predicted ($F = 4.03$, $p = 0.048$).

Of potential interest, for women only, the non-threat condition status comparison is statistically significant such that high-status participants report feeling more like part of the group ($F = 4.06$, $p = 0.047$). However, none of the status comparisons for men only are statistically significant.

Preference for same partner again (cohesion): As mentioned above, all participants in the final sample indicated that they would be interested in a fictitious future study. With the initial assumption results above I addressed the proportion of

participants that indicated "yes" that they would want to be matched with the same partner again as a status evaluation outcome, and now I turn to assessing it as a cohesion outcome. Because I examine it in two different ways, these tests are two-tailed. As addressed above, proportions for the full sample differ statistically across the conditions (chi square = 50.589, p <0.001). The threat condition values within each status condition are the same, as are the combined threat condition values.

Gender and Controls: Results for women alone, though not statistically significant, are such that the low-status and combined threat condition comparisons are in the opposite direction predicted (z = 0.595, p = 0.552; z = 0.709, p = 0.478), and the high-status threat comparison is in the direction predicted (z = 0.570, p = 0.569). Results for men alone, though also not statistically significant, are in the opposite direction, such that the low-status and combined threat condition comparisons are in the direction predicted (z = -0.595, p = 0.552 and z = -0.623, p = 0.534), and the high-status threat comparison is in the opposite direction predicted (z = 0.570, p = 0.569).[17]

Study 2 Manipulation Checks

Several measures were designed to assess the effectiveness of the status and threat manipulations. These results suggest that both manipulations were reasonably effective within the final sample. Consistent with case selection criteria for the final sample, this was more so the case for the status manipulations. Because some of these variables differ so little in affirmative responses, difference of status coefficients by threat results are not

[17] Again, results including control variables for men alone not available due to convergence issues with logistic regression models.

available for some models to missing estimates. Difference of status coefficients by threat results are only presented for manipulation check variables if they are statistically significant or approaching significance.

Some single-gender analyses are presented where they differ by gender, and I address some full-sample analyses including control variables where they differ from the main analyses. None of the single-gender manipulation-check analyses include control variables. See Appendix 2 for manipulation-check tables by gender.

Table 10: Study 2 Manipulation and Suspicion Checks: Full Sample

Study 2 Manipulation and Suspicion Checks: Full sample	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Feel personally threatened (scale)	24.176	12.907	26.962	15.053	29.115	18.828	25.320	13.619
		51		52		52		50
Feel group threatened (scale)	15.216	9.060	21.462	10.764	18.882	12.198	19.077	11.504
		51		52		51		52
Feel anxious for country (Q)	3.712	2.061	3.442	2.118	4.346	1.929	4.385	1.972
		51		52		52		52
Extent difficult to earn points	5.038	1.468	5.096	1.257	5.000	1.343	4.750	1.412
		52		52		52		52
Self-reported self CS score	7.365	1.344	7.019	0.896	17.558	1.487	17.942	0.235
		52		52		52		52
Self-reported self CS score (recoded)	7.365	1.344	7.019	0.896	17.712	1.289	17.942	0.235
		52		52		52		52
Self CS score compared to national avg.	1.577	0.750	2.038	1.120	5.981	1.038	6.231	0.831
		52		52		52		52
Self CS score subjective	1.942	0.998	2.442	1.243	5.673	1.115	5.962	0.969
		52		52		52		52
Partner CS score reported	17.885	0.471	17.923	0.269	7.154	0.777	7.096	0.409
		52		52		52		52
Partner CS score compared to national avg.	6.519	0.610	6.423	0.572	2.212	0.957	2.173	1.061
		52		52		52		52
Partner CS score subjective	6.635	0.627	6.481	0.671	2.538	1.244	2.519	1.213
		52		52		52		52

Study 2 Manipulation and Suspicion Checks: Full sample	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Correct - pay structure Q	1.000	52	0.885	52	0.981	52	0.865	52
Correct/not sure - pay structure Q	1.000	52	0.885	52	0.981	52	0.904	52
Correct - other groups threatening Q	1.000	52	1.000	51	0.981	52	0.962	52
Correct/not sure - other groups threatening Q	1.000	52	1.000	51	0.981	52	0.962	52
Situation personally threatening (Q)	1.615	52	3.481	52	1.808	52	3.250	52
Situation threatening to group (Q)	1.712	52	4.115	52	2.000	52	4.192	52
Indicated threat-condition pay structure	0.000	52	0.885	52	0.019	52	0.865	52
Indicated other groups threaten	0.000	52	1.000	51	0.019	52	0.962	52
Any type of suspicion - yes	0.327	52	0.231	52	0.423	52	0.288	52
Any type of suspicion - yes/not sure	0.442	52	0.385	52	0.500	52	0.404	52
Any type of suspicion affect behavior - yes	0.087	23	0.000	20	0.077	26	0.095	21
Any type of suspicion affect behavior - yes/not sure	0.174	23	0.050	20	0.231	26	0.143	21
Acted real despite any type of suspicion - yes	1.000	23	1.000	20	1.000	26	1.000	21
Acted real despite any type of suspicion - yes/not sure	1.000	23	1.000	20	1.000	26	1.000	21
Suspicious about partner - yes	0.423	52	0.462	52	0.481	26	0.442	52
Suspicious about partner - yes/not sure	0.519	52	0.519	52	0.538	52	0.615	52
Suspicion about partner affect behavior - yes	0.000	23	0.000	20	0.038	26	0.000	21
Suspicion about partner affect behavior - yes/not sure	0.087	23	0.050	20	0.269	26	0.095	21
Acted real despite suspicion about partner - yes	1.000	23	1.000	20	1.000	26	0.952	21
Acted real despite suspicion about partner - yes or not sure	1.000	23	1.000	20	1.000	26	1.000	21
Suspicious about partner info - yes	0.288	52	0.231	52	0.385	52	0.327	52
Suspicious about partner info - yes/not sure	0.346	52	0.365	52	0.442	52	0.462	52
Suspicion about partner info affect behavior - yes	0.056	18	0.000	19	0.043	23	0.000	24
Suspicion about partner info affect	0.111	18	0.105	19	0.217	23	0.042	24

Study 2 Manipulation and Suspicion Checks: Full sample	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
behavior - yes/not sure								
Acted real despite suspicion about partner info - yes	1.000	18	1.000	19	0.909	22	0.958	24
Acted real despite suspicion about partner info - yes/not sure	1.000	18	1.000	19	1.000	22	1.000	24
Final suspicion Q - any suspicion affected behavior during study - yes	0.000	52	0.000	52	0.038	52	0.019	52
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.019	52	0.019	52	0.115	52	0.058	52
Number of whether suspicious Qs indicated yes to	1.038	1.171	0.923	1.135	1.327	1.382	1.077	1.281
		52		52		52		52
Number of whether suspicious Qs indicated yes/not sure to	1.327	1.309	1.288	1.362	1.596	1.498	1.538	1.275
		52		52		52		52

Study 2 Manipulation and Suspicion Checks: Full sample	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Feel personally threatened (scale)	25.583	14.033	27.255	16.511	26.670	16.281	26.157	14.321
		103		102		103		102
Feel group threatened (scale)	18.369	10.393	18.981	11.795	17.049	10.849	20.269	11.151
		103		103		102		104
Feel anxious for country (Q)	3.577	2.084	4.365	1.941	4.029	2.012	3.913	2.091
		104		104		104		104
Extent difficult to earn points	5.067	1.360	4.875	1.377	5.019	1.400	4.923	1.342
		104		104		104		104
Self-reported self CS score	7.192	1.150	17.750	1.077	12.462	5.312	12.481	5.527
		104		104		104		104
Self-reported self CS score (recoded)	7.192	1.150	17.827	0.929	12.538	5.361	12.481	5.527
		104		104		104		104
Self CS score compared to national avg.	1.808	0.976	6.106	0.944	3.779	2.389	4.135	2.324
		104		104		104		104
Self CS score subjective	2.192	1.150	5.817	1.050	3.808	2.150	4.202	2.087
		104		104		104		104
Partner CS score	17.904	0.382	7.125	0.618	12.519	5.429	12.510	5.451

Study 2 Manipulation and Suspicion Checks: Full sample	**Combined low-status self conditions (1 and 2)**		**Combined high-status self conditions (3 and 4)**		**Combined non-threat conditions (1 and 3)**		**Combined threat conditions (2 and 4)**	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
reported		104		104		104		104
Partner CS score compared to national avg.	6.471	0.590	2.192	1.006	4.365	2.307	4.298	2.298
		104		104		104		104
Partner CS score subjective	6.558	0.651	2.529	1.222	4.587	2.280	4.500	2.216
		104		104		104		104
Correct - pay structure Q	0.942		0.923		0.990		0.875	
		104		104		104		104
Correct/not sure - pay structure Q	0.942		0.942		0.990		0.894	
		104		104		104		104
Correct - other groups threatening Q	1.000		0.971		0.990		0.981	
		103		104		104		103
Correct/not sure - other groups threatening Q	1.000		0.971		0.990		0.981	
		103		104		104		103
Situation personally threatening (Q)	2.548	1.822	2.529	1.790	1.712	1.212	3.365	1.916
		104		104		104		104
Situation threatening to group (Q)	2.913	2.010	3.096	2.041	1.856	1.318	4.154	1.955
		104		104		104		104
Indicated threat-condition pay structure	0.442		0.442		0.010		0.875	
		104		104		104		104
Indicated other groups threaten	0.495		0.490		0.010		0.981	
		103		104		104		103
Any type of suspicion - yes	0.279		0.356		0.375		0.260	
		104		104		104		104
Any type of suspicion - yes/not sure	0.413		0.452		0.471		0.394	
		104		104		104		104
Any type of suspicion affect behavior - yes	0.047		0.085		0.082		0.049	
		43		47		49		41
Any type of suspicion affect behavior - yes/not sure	0.116		0.191		0.204		0.098	
		43		47		49		41
Acted real despite any type of suspicion - yes	1.000		1.000		1.000		1.000	
		43		47		49		41
Acted real despite any type of suspicion - yes/not sure	1.000		1.000		1.000		1.000	
		43		47		49		41
Suspicious about partner - yes	0.442		0.462		0.452		0.452	
		104		104		104		104
Suspicious about partner - yes/not sure	0.519		0.577		0.529		0.567	
		104		104		104		104
Suspicion about partner affect behavior - yes	0.000		0.021		0.020		0.000	
		43		47		49		41
Suspicion about partner affect behavior - yes/not sure	0.070		0.191		0.184		0.073	
		43		47		49		41
Acted real despite suspicion about partner - yes	1.000		0.979		1.000		0.976	
		43		47		49		41
Acted real despite suspicion about partner - yes or not sure	1.000		1.000		1.000		1.000	
		43		47		49		41
Suspicious about partner info - yes	0.260		0.356		0.337		0.279	
		104		104		104		104
Suspicious about	0.356		0.452		0.394		0.413	

Study 2 Manipulation and Suspicion Checks: Full sample	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
partner info - yes/not sure		104		104		104		104
Suspicion about partner info affect behavior - yes	0.027		0.021		0.049		0.000	
		37		47		41		43
Suspicion about partner info affect behavior - yes/not sure	0.108		0.128		0.171		0.070	
		37		47		41		43
Acted real despite suspicion about partner info - yes	1.000		0.935		0.950		0.977	
		37		46		40		43
Acted real despite suspicion about partner info - yes/not sure	1.000		1.000		1.000		1.000	
		37		46		40		43
Final suspicion Q - any suspicion affected behavior during study - yes	0.000		0.029		0.019		0.010	
		104		104		104		104
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.019		0.087		0.067		0.038	
		104		104		104		104
Number of whether suspicious Qs indicated yes to	0.981	1.149	1.202	1.332	1.183	1.283	1.000	1.207
		104		104		104		104
Number of whether suspicious Qs indicated yes/not sure to	1.308	1.330	1.567	1.385	1.462	1.407	1.413	1.319
		104		104		104		104

Status Manipulation Checks

The results presented above testing the initial assumption of greater deference to high-status individuals in part serve as status manipulation checks. The variables addressed below are designed to measure the extent to which participants acknowledge information consistent with their status condition. I also address some of these results that may be of potential theoretical interest.

Self-reported self contrast sensitivity pretest score: Participants in the final sample successfully reported self contrast sensitivity pretest scores consistent with their manipulations. The means differed statistically across the conditions (F = 1,586.75, p <0.001). Comparing the low-status conditions combined (1 and 2) to the high-status conditions combined (3 and 4), the difference is statistically significant in the direction expected (t = -68.34, p <0.001). Comparing by status within the threat conditions, the results for both the non-threat and threat conditions are statistically significant in the direction expected (F = 2,215.17, p <0.001; and F = 2,544.67, p <0.001).

Of potential interest, in the full sample, patterns for threat manipulation results within each status condition have result patterns consistent with Prediction 3, statistically significant such that high-status participants report higher scores when threatened (F = 3.15, p = 0.077), and approaching statistical significance such that low-status participants report lower scores when threatened (F = 2.56, p = 0.112). The difference in status coefficients by threat condition is statistically significant and consistent with Prediction 3, such that there is a greater difference in the direction predicted between the threat conditions than the non-threat conditions (chi square = 5.78, p = 0.016).

There is a recoded variable that includes a small number of revised responses that participants identified as incorrect. The above conclusions hold for the recoded version of this variable, except for the low-status threat comparison changes from approaching statistical significance to statistically significant (F = 2.88, p = 0.046), and the high-status threat comparison is no longer statistically significant (F = 1.28, p = 0.259).

Gender and Controls: Of potential interest, for women in the recoded version of the variable, the low-status threat comparison approaches statistical significance (F =

2.12, $p = 0.149$). For men only, none of the threat comparisons are statistically significant, and the difference of coefficients estimate is not available due to zero coefficients. In the recoded version of the variable, and including control variables in the full sample, the difference of coefficients only approaches statistical significance (chi square = 3.81, $p = 0.051$).

Rating of self contrast sensitivity ability against national standard: Participants in the final sample also successfully evaluate their own contrast sensitivity ability compared to the national average consistent with their manipulations. The means differ significantly across the conditions ($F = 359.95$, $p < 0.001$). Comparing the combined low-status and high-status conditions, results are again in the direction expected and statistically significant ($t = -32.273$, $p < 0.001$). Comparing by status within the threat conditions, the results for both the non-threat and threat conditions were in the direction expected and statistically significant ($F = 562.64$, $p < 0.001$; and $F = 509.88$, $p < 0.001$).

Of potential interest, evaluating this outcome in terms of Prediction 3, in the full sample, the threat manipulation within the low-status conditions is statistically significant in the opposite direction predicted ($F = 6.18$, $p = 0.014$), and it approaches statistical significance in the direction predicted in the high-status conditions ($F = 1.81$, $p = 0.180$).

Gender and Controls: Of potential interest, for women only the low-status threat comparison is not statistically significant, though in the opposite direction predicted ($F = 2.60$, $p = 0.110$), and for men only, this comparison approaches statistical significance ($F = 3.90$, $p = 0.051$). Also, for men only the high-status threat comparison does not approach statistical significance ($F = 0.09$, $p = 0.762$).

Subjective rating of self contrast sensitivity ability: Participants in the final sample also successfully subjectively evaluate their own contrast sensitivity ability consistent with their manipulations. The means differ statistically across the conditions ($F = 195.23$, $p < 0.001$). Comparing the combined low-status and high-status conditions, results are again in the direction predicted and statistically significant ($t = -23.744$, $p < 0.001$). Comparing by status within the threat conditions, the results for both the non-threat and threat conditions are in the direction predicted and statistically significant ($F = 306.30$, $p < 0.001$; $F = 275.55$, $p < 0.001$).

Of potential interest, evaluating this outcome in terms of Prediction 3, in the full sample, the effect of the threat manipulation within the low-status conditions is statistically significant in the opposite direction predicted ($F = 5.50$, $p = 0.020$), and this approaches statistical significance in the direction predicted for the high-status comparison ($F = 1.83$, $p = 0.178$).

Gender and Controls: Of potential interest, for women only, the high-status threat comparison does not approach statistical significance, and for men only, the low-status threat comparison is not statistically significant. In the full sample including control variables, the overall threat condition comparison approaches statistical significance such that threat increases this rating ($t = 1.66$, $p = 0.099$).

Participant-reported partner contrast sensitivity pretest score: Participants also reported their partners' scores. The means differ significantly across the conditions in the full sample ($F = 7{,}567.60$ $p < 0.001$). Comparing the combined low-status and high-status conditions, results are statistically significant in the direction expected ($t = 151.24$, $p < 0.001$). Comparing by status within the threat conditions, the results for both the non-

threat and threat conditions are statistically significant in the direction expected (F = 11,250.13, p <0.001; and F = 11,452.65, p <0.001).

Of potential interest, evaluating this outcome in terms of Prediction 3, in the full sample, threat comparisons within the low-status and high-status conditions are not statistically significant, though in the direction expected (F = 0.35, p = 0.554; and F = 0.06, p = 0.813).

Gender and Controls: Of potential interest, for men only, the means within the high-status conditions are not statistically significant, though in the opposite direction expected (F = 0.49, p = 0.486).

Rating of partner contrast sensitivity ability against national standard: Participants rated partner contrast sensitivity ability levels compared to the national average consistent with their manipulations. The means differ significantly across the conditions in the full sample (F = 317.44, p <0.001). Comparing the combined low-status and high-status conditions, results are statistically significant in the direction expected (t = 37.42, p <0.001). Comparing by status within the threat conditions, the results for both the non-threat and threat conditions are statistically significant in the direction expected (F = 704.08, p <0.001; and F = 685.35, p <0.001).

Of potential interest, in the full sample, the threat manipulation within the low-status conditions the result is not statistically significant, though opposite of the direction expected (F = 0.35, p = 0.554). The high-status condition result is also not statistically significant, though in the direction expected (F = 0.06, p = 0.813).

Gender and Controls: Of potential interest, for women only, the means within the low-status conditions do not differ.

Subjective rating of partner contrast sensitivity ability: Participants in the final sample also successfully subjectively evaluated their partners' contrast sensitivity ability consistent with their manipulations. The means differ statistically across the conditions in the full sample ($F = 844.67$, $p < 0.001$). Comparing the combined low-status and high-status conditions, results are statistically significant in the direction expected ($t = 29.67$, $p < 0.001$). Comparing by status within the threat conditions, the results for both the non-threat and threat conditions are statistically significant in the direction expected ($F = 451.87$, $p < 0.001$; and $F = 422.66$, $p < 0.001$).

Of potential interest, in the full sample, the threat manipulation within the low-status conditions the result is not statistically significant, though opposite of the direction expected ($F = 0.64$, $p = 0426$). The high-status condition result is also not statistically significant, though in the direction expected ($F = 0.01$, $p = 0.921$).

Gender and Controls: Among the women only, the high-status condition result is not statistically significant, though opposite of the direction predicted, but ($F = 1.53$, $p = 0.219$).

Threat Manipulation Checks

Feel personally threatened scale: Participants answered questions about how threatened they felt personally, and these were combined into a scale. The means did not differ statistically across the conditions in the full sample ($F = 1.01$, $p < 0.389$). Comparing the combined non-threat (1 and 3) and threat conditions (2 and 4), results are not statistically significant, though opposite of the direction predicted ($t = 0.240$, $p = 0.811$, two-tailed). Comparing by threat within the status conditions, the results for the low-status conditions are not statistically significant, though in the direction predicted (F

= 0.85, p = 0.357). The results for the high-status conditions are also not statistically significant, though in the opposite direction predicted (F = 1.57, p = 0.212).

Gender and Controls: For the women only, the threat comparison within the low-status conditions is not statistically significant, though in the opposite direction predicted (F = 0.36, p = 0.549). For men only, differences in means across conditions approach statistical significance (F = 2.20, p = 0.093). The low-status threat comparison is statistically significant in the direction predicted (F = 4.48, p = 0.037). Of potential interest, the status coefficients across the threat models differ statistically (chi square = 6.39, p = 0.012), such that there is a statistically significant positive status effect for the non-threatened participants (F = 4.12, p = 0.045), and though not statistically significant, the direction suggests a decrease for threatened participants (F = 2.23, p = 0.138).

Feel group threatened scale: Participants answered questions about how threatened they felt in terms of their task group in the study, and these were combined into a scale.[18] The difference in the means across the conditions in the full sample is statistically significant (F = 2.85, p = 0.039), and results for this outcome support the predictions more so than those for feeling personally threatened. Comparing the combined non-threat and threat conditions, results are statistically significant in the direction predicted (t = -2.100, p = 0.017). Comparing by threat within the status conditions, the results for the low-status conditions are statistically significant in the direction predicted (F = 8.38, p = 0.004), but the results for the high-status conditions are not statistically significant and in the opposite direction predicted (F = 0.01, p = 0.928).

[18] As noted in Chapter 5, a typographical error in one of the questions, asking how anxious the participant feels for his or her country instead of the task group as intended, resulted in this question being excluded from the scale. A factor analysis demonstrated that this item did not fit well with the others.

Of potential interest, the difference in status coefficients across the threat models is statistically significant (chi square = 4.00, $p = 0.046$), such that there is a positive status effect for the non-threatened participants that approaches statistical significance ($F = 4.12$, $p = 0.045$), and though not statistically significant, the direction of results for the threatened participants suggests a decrease ($F = 2.23$, $p = 0.138$).

Gender and Controls: For women only, means did not differ statistically across the conditions ($F = 0.30$, $p = 0.825$), and while all threat comparisons are in the direction predicted, none are statistically significant. This is the case for the combined ($t = -0.935$, $p = 0.163$), low-status ($F = 0.60$, $p = 0.439$), and high-status comparisons ($F = 0.28$, $p = 0.595$). Statistical conclusions are the same for men as for the full sample, except, of potential interest, the non-threat condition status comparison is statistically significant ($F = 7.32$, $p = 0.008$). Statistical conclusions are the same for the full-sample analyses including control variables, except of potential interest, the difference in status coefficients is no longer statistically significant (chi square = 2.54, $p = 0.111$), and the non-threat status comparison no longer approaches statistical significance ($F = 2.86$, $p = 0.104$).

How difficult to earn profit points: Participants rated the extent to which it was difficult to earn profit points during the task. Participants reporting more difficulty in the threat conditions would be consistent with an effective threat manipulation. Also, participants reporting more difficulty in the low-status conditions would be consistent with an effective status manipulation. In the full sample, the means do not differ statistically across the conditions ($F = 0.64$, $p = 0.588$). Comparing the combined non-threat and threat conditions, results are in the opposite direction predicted though not

statistically significant (t = -0.506, p = 0.614, two-tailed). Neither of the threat comparisons within the status conditions are statistically significant, with the low-status comparison in the direction predicted (F = 0.05, p = 0.831), and the high-status comparison is in the opposite direction predicted (F = 0.86, p = 0.354). None of the status comparisons are statistically significant, though the combined, non-threat, and threat condition comparisons are in the direction predicted (t = 1.013, p = 0.156; F = 0.02, p = 0.887; F = 1.65, 0.100).

Gender and Controls: For women only, the high-status threat comparison is in the direction predicted, though not statistically significant (F = 0.61, p = 0.437). For men only, the low-status threat comparison is in the opposite direction predicted (F = 0.39, p = 0.531), and the high-status threat comparison is in the direction predicted (F = 0.04, p = 0.835). Also for men, the threat condition status comparison approaches statistical significance in the direction predicted (F = 2.50, p = 0.058).

Rating study situation as personally threatening: Participants rated how threatening the group task situation was to them personally. All threat comparisons are in the direction predicted, such that the threat manipulation increased these ratings. The means differ statistically across conditions (F = 18.65, p < 0.001). Comparing the combined non-threat and threat conditions, low-status, and high-status conditions, results are statistically significant in the direction predicted (t = -7.439, p < 0.001; F = 35.01, p < 0.001; and F = 20.93, p < 0.001, respectively).

Rating study situation as threatening to task group: Participants rated how threatening the group task situation was to their task group. As in the personal threat rating, all threat comparisons are statistically significant in direction predicted, such that

the threat manipulation increases these ratings. Means differ statistically across conditions ($F = 44.962$, $p < 0.001$). Comparing the combined non-threat and threat conditions, low-status, and high-status conditions, results are statistically significant in the direction predicted ($t = -9.942$, $p < 0.001$; $F = 53.76$, $p < 0.001$; and $F = 44.72$, $p < 0.001$, respectively).

Rating feeling anxious for country: It is of theoretical interest to assess how participants respond to a reference group other than their task group. For the question about how anxious the participant feels for their country (excluded from the group scale because the country reference group was a typographical error), results suggest that self and partner status predicts this outcome more so than the threat manipulation. Means differ statistically across the conditions ($F = 2.79$, $p = 0.041$). Comparing the combined non-threat and threat conditions, results are opposite of the direction expected, and not statistically significant ($t = 0.406$ $p = 0.686$, two-tailed). Comparing by threat within the status conditions, the results for the low-status conditions are not statistically significant, though opposite of the direction predicted ($F = 0.46$, $p = 0.498$), and the results for the high-status conditions are also not statistically significant, though in the direction predicted ($F = 0.01$, $p = 0.923$).

Of potential interest, and as mentioned above, results suggest status effects, such that self status increases anxiety expressed for one's country. In the full sample, the combined status condition comparison is statistically significant ($t = -2.823$, $p = 0.005$, two-tailed). The threat condition status comparison is statistically significant as well ($F = 5.65$, $p = 0.018$), and the non-threat condition status comparison approaches statistical significance ($F = 2.56$, $p = 0.111$).

Gender and Controls: For women only, the means do not differ statistically across conditions ($F = 1.66$, $p = 0.181$). Including control variables for the full sample, the difference in means across conditions only approaches statistical significance ($F = 2.56$, $p = 0.056$). Of potential interest, the threat condition status comparison approaches statistical significance ($F = 2.86$, $p = 0.094$), and the non-threat condition status comparison is not statistically significant ($F = 2.02$, $p = 0.158$). The same results hold for men only (respectively, $F = 1.20$, $p = 0.314$; $F = 2.81$, $p = 0.097$; and $F = 0.70$, $p = 0.404$).

Threat Comprehension Results

Two questions were designed to assess whether the participant comprehended the threat conditions. First, they were asked to identify the pay structure of the study, as either non-competitive (consistent with the non-threat conditions) or competitive (consistent with the threat conditions). Second, they were asked to confirm whether the other groups in the study threatened their task group's ability to earn a high score. Both questions had two response options consistent with respective threat conditions, and a not sure option. For the correct rates, only correct responses are counted (both incorrect and not sure responses are considered incorrect). Though ideally all participants in the final sample would have fully comprehend the conditions, it makes sense that as several results suggest, correct response rates are lower in the threat conditions. This is because the threat version of the instructions were more complex, and perhaps more difficult to understand.

For the proportion of participants responding affirmatively to the study pay structure being consistent with the threat condition, these proportions differ statistically

across conditions (chi square = 157.949, p <0.001). All threat comparisons are statistically significant in the direction expected, such that participants in the threat conditions are more likely to indicate this response. This is the case for the combined threat condition comparison (z = -12.565, p <0.001), the low-status condition threat comparison (z = -9.082, p <0.001), and the high-status threat condition comparison (z = -8.687, p <0.001).[19]

Condition consistency of study pay structure: In the full sample, correct responses to the question about the study pay structure are less frequent in the threat conditions. The proportions differ statistically across conditions (chi square = 11.334, p = 0.010). Combining the low- and high-status conditions and comparing by threat, these results are statistically significant within both the low- and high-status conditions (z = 3.321, p = 0.001, two-tailed; z = 2.523, p = 0.012; z = 2.208, p = 0.027. Results are similar when considering not sure responses along with the correct ones, though the high-status threat comparison only approaches statistical significance (z = 1.682, p = 0.093).

Gender and Controls: For the women only, the low-status threat comparison is not statistically significant (z = 1.442, p = 0.149, two-tailed). For the men only, proportions do not differ statistically across conditions (chi square = 5.361, p = 0.147). Their combined threat condition comparison only approaches statistical significance (z = 1.957, p = 0.050), and their high-status threat comparison is not statistically significant (z = 0.595, p = 0.552). When including not sure responses as well as correct ones, for women only, the difference in proportions across conditions only approaches statistical significance (chi square = 7.782, p = 0.051). For men only, including the not sure

[19] For the full sample control analyses, the low-status threat comparison result is 0 (omitted).

responses, the difference in proportions across conditions approaches statistical significance (chi square = 6.367, p = .095), and as in their correct proportion, the overall threat comparison only approaches statistical significance (z = 1.682, p = 0.093, two-tailed). When including control variables for the full sample, for the correct indicator, the high-status threat comparison only approaches statistical significance (z = -1.74, p = 0.082, two-tailed).[20] For the indicator including not sure responses, the high-status threat comparison no longer approaches statistical significance (z = -1.25, p = 0.212).[21]

For the proportion of participants indicating "yes" that other groups threaten their group's ability to earn a high profit, these proportions differ statistically across conditions (chi square = 195.382, p <0.001). All threat comparisons are statistically significant in the direction expected, such that participants in the threat conditions are more likely to indicate this response. This is the case for the combined threat condition comparison (z = 13.971, p <0.001), the low-status condition threat comparison (z = 10.149, p <0.001), and the high-status threat condition comparison (z = -9.612, p <0.001).[22]

Condition consistency of other groups threatening in study: Though results for the question about the pay structure are not uniform across conditions, performance on the question about whether the other groups threaten the participant's group's ability to earn a high payment is much more consistent. In the full sample, proportions answering this question correctly do not differ statistically across the conditions (chi square = 3.688, p = 0.297), and none of the threat comparisons are statistically significant. Of potential

[20] The low-status threat comparison result is 0 (omitted), but it remains statistically significant when treating the proportion as a mean (F = 4.94, p = 0.027).
[21] The high-status threat comparison result is 0 (omitted), but it remains statistically significant when treating the proportion as a mean (F = 6.32, p = 0.013).
[22] For the full sample control analyses, the low-status threat comparison estimate is not available.

interest, the combined status condition comparison approaches statistical significance, such that those in low-status conditions are more likely to answer this question correctly ($z = 1.736$, $p = 0.083$). Results are exactly the same when including the not sure responses.

Gender and Controls: Of potential interest, the combined status comparison does not approach statistical significance for women only or men only ($z = 1.414$, $p = 0.157$; $z = 1.005$, $p = 0.315$; both two-tailed). Treating this outcome as a mean, when including control variables for the full sample, the combined status comparison no longer approaches statistical significance.[23]

Suspicion Checks

Several questions toward the end of the study were designed to assess whether participants were suspicious about certain elements of the study, and if so, to what extent they may have affected participants' behavior in problematic ways. On the whole, participants in the final sample did well on these questions, likely because these questions were used to screen for inclusion in the sample. The most stringent criterion was that participants acted as though the circumstances were real. Despite the participants in the final sample having been judged as not problematically suspicious, performance on the suspicion items was not perfect. It makes sense that threatened participants would be the most suspicious, because the situation is more complex than the non-threatening conditions. However, there was not strong evidence of this, or any other problematic differences in suspicion across the conditions. As mentioned above, there are only

[23] When including control variables for the full sample, the combined threat condition comparison result is 0 (omitted).

statistically significant differences across conditions in keeping data rates for women only, such that low-self-status cases were more likely to be kept.

For the probing questions about specific types of suspicion, the proportions presented are conditional on the participant indicating "yes" or "not sure" about having that type of suspicion. This missing data results in some uneven cell sizes. The tables above provide the number of participants included in the calculation of each proportion.

Due to small cell sizes, especially for the conditional outcomes, many analyses including control variables are not available. Instead of detailing each instance, I only address control analyses that provide evidence contradicting the main analyses, and I provide information about treating indicator variables as means when it provides relevant information not otherwise available.

General Suspicion

Indicating this type of suspicion: Participants were first asked if they were ever suspicious about anything in the study not actually being as it was presented. Though the response pattern is such that high-status/non-threat participants were especially likely to indicate "yes", the proportions do not differ statistically across the conditions (chi square = 4.705, $p = 0.195$. Perhaps notably, the combined threat condition comparison approaches statistical significance, such that the non-threat condition has more participants indicating "yes" to this suspicion ($z = 1.788$, $p = 0.074$, two-tailed). When considering the proportion of "yes" as well as "not sure" responses to this question, neither the differences across conditions nor any of the specific contrasts are statistically significant.

Gender and Controls: For "yes" responses among women only, the difference between the combined non-threat and threat conditions and the threat comparison within high-status conditions approaches statistical significance, such that threatened participants are more likely to say "yes" to this suspicion ($z = 1.896$, $p = 0.058$, two-tailed; $F = 1.749$, $p = 0.080$; both two-tailed). No results are statistically significant among the women including "not sure" responses, results for the men only, or full sample results including control variables.

Indicating whether suspicion affected behavior: Among those participants who indicated "yes" or "not sure" about being suspicious about anything in the study not actually being as it was presented, they were asked if the suspicion affected their behavior during the study. For those indicating "yes" to this question in the full sample, proportions do not differ across conditions (chi square = 1.900, $p = 0.593$) nor in any of the specific comparisons. The same is true when including the "not sure" responses.

Gender and Controls: For women only, when including the "not sure" responses, the combined status condition comparison is statistically significant, such that high-status participants are more likely to respond affirmatively ($z = -1.988$, $p = 0.047$, two-tailed). Of potential interest, treating the outcome as a mean, when including control variables for the full sample, for the "yes" responses the difference in status coefficients by threat approaches statistical significance (chi square = 3.05, $p = 0.081$).[24]

Whether acted as though real: Participants were then asked whether they acted as though the circumstances in the study were real. All participants in the full sample (i.e., final and balanced and for both genders) said yes.

[24] The threat condition status comparison and comparison of status coefficients by threat are not available.

Question about any suspicion affecting study behavior: End of suspicion question series. All participants were asked whether any type of suspicion affected their behavior during the study. The proportion of participants indicating "yes" did not differ statistically across the conditions (chi square = 3.720, $p = 0.293$). However, the combined status condition comparison approaches statistical significance, such that high-status participants are more likely to indicate this ($z = -1.745$, $p = 0.081$, two-tailed). When including "not sure" along with "yes" responses, the difference in proportions across the conditions approaches statistical significance (chi square = 6.431, $p = 0.092$), the combined status condition comparison is statistically significant ($z = -2.169$, $p = 0.030$, two-tailed), and the status comparison within the non-threat conditions approaches statistical significance ($z = -1.957$, $p = 0.050$, two-tailed).

Gender and Controls: No women said yes to this question, and none of their comparisons are statistically significant. For men only, for the responses including "yes" and "not sure", the combined threat condition comparison approaches statistical significance, such that threatened participants are less likely to indicate this ($z = 1.682$, $p = 0.093$, two-tailed), and the combined status comparison approaches statistical significance such that high-status participants are more likely to indicate this ($z = -1.682$, $p = 0.093$, two-tailed). When treating the outcome as a mean, in the full sample including controls, for the "yes" responses, the combined status comparison no longer approaches statistical significance.[25] When including both yes and not sure responses, none of the

[25] The logistic regression result is not available.

control results are statistically significant, though the non-threat condition status comparison no longer approaches statistical significance.

Summary Suspicion Scale. A suspicion scale was computed to measure how many of the four suspicion questions participants indicated suspicion about. The first measure is the number of questions they said yes to. Mean scores do not differ statistically across conditions ($F = 0.97$, $p = 0.408$) or for any specific comparisons. The same conclusions hold when computing this scale with both yes and not sure responses ($F = 0.65$, $p = 0.584$).

Specific Types of Suspicion

Below I present results for specific suspicion about the partner and information presented about the partner.

Suspicion about the Partner. Indicating this type of suspicion: Participants were asked whether they were suspicious about the task partner. Proportions indicating yes did not differ statistically across the conditions (chi square = 0.388, $p = 0.943$), and none of the specific comparisons are statistically significant. The same is true for the proportions including "not sure" responses.

Indicating whether suspicion affected behavior: Proportions indicating yes to this type of suspicion affecting their behavior did not differ statistically across the conditions (chi square = 2.489, $p = 0.477$), and none of the specific comparisons are statistically significant. However, when including not sure responses, the combined status condition comparison approaches statistical significance such that high-status participants are more likely to indicate this kind of suspicion ($z = -1.697$, $p = 0.090$, two-tailed).

Gender and Controls: No women indicated yes to this question. For the responses including not sure for the women and men only, the overall status comparison does not approach statistical significance. For women's yes along with not sure responses, the non-threat condition status comparison approaches statistical significance (z = -1.705, p = 0.088, two-tailed). For the responses including not sure for the men only, the combined threat condition comparison approaches statistical significance, such that threatened participants are less likely to indicate this (t = 1.868, p = 0.062, two-tailed).

Whether acted as though real: Participants were then asked whether they acted as though the partner was real. Proportions across conditions do not differ statistically (chi square = 3.323, p = 0.345), and none of the specific comparisons are statistically significant. All participants asked in the final balanced sample indicated either "yes" or "not sure" to this question.

Gender and Controls: Of potential interest, when treating the "yes" outcome as a mean, in the full sample analyses including control variables, the high-status condition threat comparison is statistically significant such that threatened participants are less likely to indicate this (F = 4.51, p = 0.037).[26]

Suspicion about the Partner Information. Indicating this type of suspicion: When asked whether they were suspicious about any information provided about the task partner, the pattern of results suggests that participants in the high-status conditions are more likely to say "yes" that they are suspicious in this way, but neither differences across the conditions (chi square = 3.069, p = 0.381) nor any of the contrasts are

[26] This logistic regression result is not available.

statistically significant. The same statistical conclusions hold when considering both "yes" and "not sure" responses.

Gender and Controls: For men only, for the "yes" response, the threat condition and combined status condition status comparisons approach statistical significance, such that high-status participants are more likely to indicate this (z = -1.698, p = 0.090; z = -1.812, p = 0.070; both two-tailed).

Indicating whether suspicion affected behavior: Proportions indicating "yes" to this type of suspicion affecting their behavior do not differ statistically across the conditions (chi square = 2.212, p = 0.530), and none of the specific comparisons are statistically significant. When including "not sure" along with "yes" responses, the high-status condition threat comparison approaches statistical significance, such that threatened participants are less likely to indicate this (z = 1.805, p = 0.071, two-tailed).

Gender and Controls: For men only, none said "yes," and none of the statistical results are statistically significant. In the full sample including control variables, the high-status threat comparison no longer approaches statistical significance.

Whether acted as though real: Participants were then asked whether they acted as though the partner information was real. Proportions across conditions do not differ statistically (chi square = 3.302, p = 0.347), and none of the specific comparisons are statistically significant. All participants asked in the final balanced sample indicated either "yes" or "not sure" to this question.

Gender and Controls: Treating this outcome as a mean, when including control variables for the full sample, the combined status condition comparison approaches

statistical significance such that high-status participants are less likely to indicate this (t = -1.78, p = 0.079, two-tailed).[27]

Study 2 Discussion

The Study 2 results provide only minimal statistical support for the predictions. With these results taken together, there is little evidence that ingroup prosociality increased under threat in terms of adherence to status, and essentially no evidence for preference for status orders and cohesion. Predictions 3 is only minimally supported, and Prediction 4 is not supported. Most of the support for Prediction 3 is from manipulation check and cohesion questions. While I consider how methodological limitations may explain the lack of statistically noteworthy results in the direction predicted, I also address self-serving motivations as a potential explanation for the observed results, such that threatened participants' responses function to relieve personal anxiety about poor group performance. Some results suggest that people may attempt to change status orders to suit their needs, or that people at least how they think about those status orders.

Theoretical Considerations

It is interesting to note that there is some evidence that threat decreased importance of earning as many points as possible for high-status participants, which is perhaps a status-consistent attitude for high-status individuals. There is also potential evidence that rating of trying their best at the task decreased with threat for low-status

[27] This logistic regression result not available.

participants, which does not seem status-consistent. Though unanticipated, some of the manipulation check results support Prediction 3, but there is also some evidence in the opposite direction. I discuss these results in more detail below.

Ingroup prosociality decreased under threat in a few noteworthy ways. For importance of earning as many points as possible, this was the case for high-status participants in the full sample. This was also the case for women alone, and this high-status comparison likely drove the combined status comparison approach statistical significance, and this result to become statistically significant when including control variables. None of these threat comparisons were statistically significant for men. For the rating of trying best at the group task, for the full sample, the low-status threat comparison approached statistical significance, such that threatened participants gave lower ratings. There is also potential evidence that for high-status men only, threat decreased they extent they reported feeling like part of the group.

Manipulation check results support Prediction 3 for self-reported contrast sensitivity score and for high-status participants, rating of self versus the national average and subjective rating. These results suggest increased adherence to the status order established — the status order became more pronounced for those participants under threat. However, notably, the opposite effect took place for low-status participants for the rating of self versus the national average and subjective rating, such that threatened low-status participants evaluated themselves more highly than non-threatened low-status participants. This perhaps suggests under threat, an attempt to mentally create a reality in which the group as a whole is more competent than it actually is. This makes sense because the low-status participants were presented as the least competent members of the

group. This mental strategy could potentially be interpreted as an instance of ingroup prosociality.

However, it is possible that inflating self ability evaluations under threat is a more practical, self-serving response to the threat as a situation in which it is more difficult than usual to earn profit points. There is evidence that both high- and low-status participants inflate their relative and subjective ability evaluations under threat. This perhaps functions to relieve personal anxiety about poor group performance. If having a higher ability level, and therefore likely performing better on the task, buffers anxiety and promotes higher self-esteem, then this is consistent how these outcomes are treated in terror management theory (TMT, e.g., Greenberg et al. 1997). This does not support the ingroup prosociality worldview explanation proposed in terms of TMT, but it does support a self-preservation explanation in terms of TMT.

Another manipulation check finding suggests potential distancing effects, or mental strategies to avoid cognitive dissonance. For the question about feeling personally threatened, participants in the threat conditions actually reported feeling less personally threatened than those in the non-threat conditions. This pattern in the opposite direction predicted suggests a possible distancing or denial process from the threat (e.g., Dechesne et al. 2000, see also Study 1 discussion in Chapter 4). This is also interesting because though the threat manipulation was designed to be threatening to the group, this apparent denial happens at the personal level. This further suggests self-serving motivations over ingroup prosocial ones. Questions specifically about ingroup importance were not included in Study 2 (though they were in Study 1 and Study 3), but a question about the extent the participant feels like part of the group was included. Low-status men's

responses provide potential evidence consistent with the self-serving explanation. The high-status threat comparison approaches statistical significance in this direction for men only (and it becomes statistically significant when including control variables). This provides some additional support for the self-serving explanation and potential ingroup distancing process.

Finally, because some interesting patterns arose from initial Study 2 analyses suggesting greater deference to low-status group members from high-status group members when the group is threatened, I include additional questions about hypothetical use of power in Study 3. These questions are relevant to findings discussed above, in that on the surface they appear self-serving but also suggest that participants may intentionally behave in ways to reconcile threatening realities with more agreeable ones (e.g., affect control theory). The hypothetical questions are about use of power, are framed from the participant's perspective as if they were in a position with high power. In Study 3, all participants were actually in a low-power position. Use of power behaviors are of interest to see how they align with ingroup prosocial worldviews about the legitimacy of power and maximizing total resources for members of the group. See Chapter 7 for details about these research methods.

Methodological Considerations

Results were not expected to differ between genders, but as discussed above, some of them did. Under threat, women were especially status-consistent in terms of importance of earning points as a cohesion outcome, while there is potential evidence that men were especially status-consistent in terms of feeling like part of the group. While the

same-gender partner procedure matching was intended to eliminate this potential status differential between partners (a diffuse status characteristic, e.g., Berger et al. 1977), responses could have differed simply depending on the partner's gender. In other words, there could have been something about having a man or woman partner that affected responses, regardless of the participant's gender. Those were the only statistical results noted. Of potential interest, many directions of result patterns (addressed above, mostly not statistically significant) also differed between men and women.

It would be of interest to repeat this study with a larger sample for more statistical power, with same-gender samples for greater homogeneity, and with a manipulation of the partner's gender. A gender manipulation would also be of interest in terms of legitimacy in Study 3 (see Chapter 8). However, it is noteworthy that the directions of results did not reflect consistent patterns in support of or against the predictions. Directions varied across the outcomes, directions and significance varied by gender, and this was also the case for the analyses including control variables. This leads me to conclude that the lack of statistically significant results indicates a lack of support for the predictions more so than a lack of statistical power. This being said, evaluating these patterns with larger samples may allow researchers to identify patterns to expect for certain behaviors and orientations in future work, and perhaps to develop a more nuanced explanation of the relationship between threat and status processes. The decreases in ingroup prosociality and potentially increased status-consistent attitudes discussed above may be an interesting starting point.

It is possible that this experiment did not clearly support the predictions because the threat manipulation was relatively weak. As detailed above, support for the

manipulation check questions about feeling threatened was not particularly strong, and differed between men and women. At least one participant mentioned the relatively low dollar amount at stake, implying that a higher dollar amount would have helped them become more emotionally invested. It would be of interest to test this with higher stakes (within reason, of course). Because of the suggestive results from the manipulation checks and cohesion outcomes about mentally constructing more status-consistent realities under threat, this seems to be a viable explanation for the lack of results. The evidence is not strong enough to determine that the theory does not apply for status processes, especially considering the Study 3 results (see Chapter 8). Based on these considerations, I suggest that future work aim to further test the Study 2 predictions.

The exact wording used in the threat compared to the control conditions could have conceivably affected participants' responses. While the control condition refers to other groups scoring a high number of points, the threat condition refers to earning. The exact phrasing, with earns versus scores, is "When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment." While the words are roughly synonyms in this context, it is possible that earning was received more positively than scoring, and therefore this diminished the threat response. While it seems more likely that the threat manipulation was weak for other reasons, it is possible that this inconsistency in wording contributed to the lack of effects observed.

Because this study used deception, and participants acting as though the situation was real is key to data quality, a noteworthy amount of data were rejected. Analyses only include data kept by the strictest standards, and some of these cases were dropped to balance condition counts. In the full, unbalanced data, the overall acceptance rate was

82.08% (229 of 279), and there were no less than 70% accepted within each gender and condition combination, with the exception of men in the low-status threat condition (66.67%). I address differences in these rates across conditions, to assess whether they may have biased results. This being said, I made efforts to be as consistent as possible in these decisions, and based on the present and preliminary analyses, I do not expect that this notably affected the study conclusions.

It is also worth noting that there were a fair number of technical issues with the group task, and this contributed to the relatively high data rejection rate. The most common comment from participants was issues with the images showing up. A few early participants also experienced long wait times for the partner matching stage, before the clarity of these instructions was improved. The technical issues could potentially undermine the validity of the group task and status manipulations. Though the manipulation check results showed that the status manipulation was relatively effective, these technical issues still could have undermined the credibility of the scores presented. Some participants in the Study 2 and 3 pretest pool reported missing pretest questions due to issues with the images showing up. While this is a shortcoming of the data presented, it is of interest to consider methodological as well as theoretical reasons why results were largely not as predicted.

Summary

Study 2 provides only minimal statistical support for Prediction 3, and none for Prediction 4. The lack of statistically noteworthy results as predicted may suggest that the proposed theory about threat increasing ingroup prosociality may not apply for status

processes in groups, at least in terms of behavioral responses and most subjective partner evaluations. However, there are also some serious methodological limitations, and a potential alternative explanation for the results observed. First, this lack of results supporting the theory as predicted is potentially explained by weak reception of the threat manipulation, as well as the sample being split by gender, and several reported technical and graphical issues. Second, there was some evidence for effects in the opposite direction predicted that suggest that a self-serving motivation explanation may be more appropriate than the proposed explanation about ingroup prosociality worldviews. Importantly, both explanations are consistent with terror management theory (TMT). Results from Study 3 provide further insight into the status processes Study 2 attempted to capture (see Chapter 8).

Chapter 7: Study 3 Methods, Data, and Analyses (Status and Promoting the Legitimacy of Power)

In this chapter, I describe the methods, data, and analyses for Study 3, on status and the legitimacy of power in groups.

Under threat, I predict a wider gap in perceptions of legitimacy between low- and high-status actors in power (Prediction 5).

Methods

Like Study 2, the study was presented to participants as "Critical Choice and Group Interaction" to prevent suspicion about the group task and the purpose of the research. Participants were led to believe that they were exchanging points with other participants in a network, and their payment amount depended on their performance (all participants actually received the maximum possible amount). Participation was estimated to take about 50 minutes, and the study paid $7 (presented as a $5 minimum, with up to $2 via MTurk bonus). This study followed a 2x2 design, manipulating threat (threat in instructions versus absence) and status relationship in the group (high-status self with low-status other versus low-status self with high-status other). Participants were randomly assigned to one of the four conditions. All participants were ostensibly in the low-power position. All participants in Study 3 were women from the U.S. By comparison, Study 2 included both women and men from the U.S.

Screening

The screening process for the Study 3 participants was the same as that for Study 2, but only included women (Study 2 included approximately equal numbers of both men and women), and also some participants who expressed some suspicion about group studies on MTurk. There were two reasons for including women only. First, there are more U.S. women than men on MTurk (e.g., Ross et al. 2010), and this reflected in a larger proportion of women in the screener pool than men. Second, and important for dynamics within and participant assumptions about the group, within a four-person network group, men and women paired with same-gender powerful actors would be likely to make different assumptions about the genders of the other network actors. For example, if a woman participant were matched with a fictitious powerful actor partner in Position A, she may assume that the other low-status actors in Positions B and C are likely to be men, assuming approximately a 50/50 chance that a given participant is a man or a woman. Likewise, a man participant with a man partner may assume the other participants are women. For the woman participant, she is likely to think men are endorsing (or not) a high-power woman's power, and for the man participant, he is likely to think women are endorsing (or not) a high-power man's power. As the status characteristics and expectation states literatures have established, gender functions as a diffuse status characteristic (e.g., Robinson and Smith-Lovin 2001). While sharing full information about the other group members may have in part resolved this issue, believability would have been a notable barrier. The narrative that participants only receive information about actors they are directly connected to is plausible. Including

women only in the Study 3 sample was also advantageous because men and women sometimes diverged in their response patterns in the Study 2 results, so assessing a more homogenous group with higher numbers would increase statistical power. However, this comes at the disadvantage of only being able to generalize to women.

The Study 3 sample also includes those who expressed some suspicion about deception in group studies. However, none of the participants who indicated high levels of suspicion were included. Some participants in Study 2 expressed suspicion about the study, despite none of them expressing these suspicions in the screener. While including these participants may have increased the number of cases rejected due to suspicion, it was not expected to significantly undermine the quality of the data. With more time and resources devoted to screening, all participants ideally would have been screened as likely to be naïve about group studies (e.g., Rinderknecht 2015). It would be of interest to compare the data rejection rates due between Studies 2 and 3, and consider how predictive questions asking about suspicion about group studies are of these suspicion issues.

Pretesting

As in Study 2, the pretest functions as the status manipulation. Using Turkitron questionnaire link randomization, participants were assigned to one of two versions of the questionnaire (adapted from Rinderknecht and Doan 2016) that at the end revealed either a high score (18 out of 20, in the superior range) or a low score (7 out of 20, in the poor range). This participant result determined which partner result would display during the

group task — the partner always had the opposite score, creating either a low-self or high-self status order.

The Study 3 sample includes some participants who screened as missing one of the CS pretest questions. By comparison, Study 2 only includes a few men screened as such who participated later. When missing only one question, the manipulation scores of 7 or 18 are still plausible. However, any participant screened as missing two or more questions was eliminated from the participant pool.

Because there were initially more women in the pretested participant pool assigned to the high-status condition than assigned to the low-status condition, I conducted another wave of pretesting and screening to increase the size of the pool. I intentionally assigned the low-status condition more often than before (briefly with a probability of 1, and then with a probability of 0.667). As a result, it is likely that more low-status participants in Study 3 would have expressed suspicion about group studies and/or missed a question on the pretest. I included indicator variables for each of these flags, and I assessed them as potential control variables.

Group Study

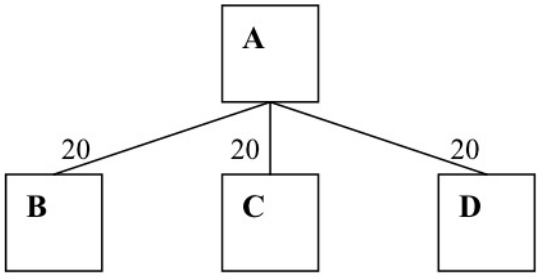
Eligible participants were invited to participate in a group study, much like the Study 2 group study. Some previous nonrespondents from the Study 2 pool were invited to participate in Study 3. Participants read instructions about the fictitious network task, and learned about power in network structures and negotiating resources. They also received information about their pretest performance (self status manipulation), network structure, their position (power manipulation), and information about their immediate

network connection (partner status manipulation). These power and status manipulations are described in more detail below

Low-Power Manipulation (All Conditions)

All participants were led to believe they are randomly assigned to a network structure and a low-power position within this network (B, along with C and D, see figure below) (design of Lucas, Younts, Lovaglia, and Markovsky 2001 as adapted in Lucas et al. manuscript in process).

Figure 2. Study 3 Network Structure



Solid lines connect negotiation dyads. Position A has three potential dyads, while B, C, and D each has only one. In each round, each dyad must decide how to distribute 20 points. If they are unable to reach an agreement, the points disappear. There are only two total agreements allowed each round, meaning at least one of the low-power actors (B, C, or D) is left out. There is a point bonus for all actors when all possible agreements take place, so this is an incentive for the actors to be as agreeable as possible.

The instructions explained in detail why Position A is the most powerful. Position A can largely determine how many points are agreed upon, because A can easily choose to accept a better offer from someone else. It is usually better for B, C, or D to try to get some points rather than risk being left out, and receiving none. Because A largely determines the resource distribution, and whether all possible agreements take place (which benefits the whole group), it is clear that A is in a position of power, and B, C, and D have little power.

One possible limitation to this power manipulation is that low-power actors have less information about the interactions throughout the task than high-power actors do, because participants only see information about those they are exchanging with. Lawler, Thye, and Yoon (2008, as cited in Lucas and Schooler 2012, unpublished), propose that having more information about exchanges in one's network promotes commitment to the group. I believe that the high-power actor's knowledge advantage reasonably comes with the high-power position, and it may serve to make power more salient. To help increase believability, I showed (fictitious) total numbers of points earned by each network member at the end of the series of rounds.

Status Manipulation

As described above, in the pretesting stage, participants learned their own contrast sensitivity ability score out of 20, along with information scoring standards (7 being a poor score, 18 being superior). At the beginning of the group task, when consenting to share their demographic and score information with the fictitious others, their score and range was displayed, ostensibly to confirm it.

Once participants were assigned to a network in the group study portion, they read in the instructions that partners directly connected will learn each other's demographic and score information. Because the participant was always assigned to position B, the participant learned information about the high-power actor in position A. To create a status order as in Study 2, position A is presented as having the opposite level of score the participant does — Position A is high-status with 17 points out of 20 for participants in the low-self-status condition, and Position A is low-status with 7 points out of 20 for participants in the high-self-status condition. As in Study 2, the actor in Position A was presented as a 27-year-old matched on the participant's gender, because including only test results might have aroused suspicion.

Threat Manipulation

Participants then received a threat manipulation similar to Study 1 and Study 2. Like Study 2, the situation was presented as directly relevant to the group task — the threat condition presented a risk of undermining the group's ability to earn a high payment. This is an existential type of risk integrated as part of the group task, based on Barclay and Benard (2013).

In the control condition, there was no mention of any threat to the group. In the threat condition, there was a given percentage chance presented before each round that all group resources (profit points) would be eliminated, and as a result no one would earn anything for that round. The information page displayed only for the threat conditions is as follows:

Before each round of exchange, a risk level from 0-100% will be established. It changes every round. This risk level is the chance that all resources are eliminated for that round — meaning that all participants and the group as a whole will earn zero points for that round. This is a threat to your group. It simulates situations in the social world like destruction of group resources at the hands of hostile out-groups, loss of food due to overuse of natural resources, and failure to respond effectively to natural disasters like hurricanes, floods, or forest fires. You will know that there is a chance of this happening, and what the risk is at the beginning of each round.

The threat manipulation was further reinforced with guided-thinking questions similar to Study 1 and Study 2. The control condition situation and guided-thinking questions (each requiring a written response of at least 100 characters) are as follows:

Control condition text:

Each round, members of your network group are negotiating how to distribute pools of resources. If group members agree, up to two exchanges can take place. The more exchanges that take place, the more points all members of the network group earn.

What do you think about being a member of your task group in this situation?

What is it like for you personally to be a member of your task group in this situation?

How do you feel about being a member of your task group in this situation?

The threat condition situation and questions are as follows:

Threat condition text:

Each round, members of your network group are negotiating how to distribute pools of resources. If group members agree, up to two exchanges can take place. The more exchanges that take place, the more points all members of the network group earn.

However, each round there is a 0-100% chance that all resources from that round will be eliminated. This means that all participants and the group as a whole will earn zero points for that round. ***This is a threat to your group****, and simulates situations like destruction of group resources by hostile out-groups, loss of food due to overuse of natural resources, and failure to respond effectively to natural disasters like hurricanes, floods, or forest fires.*

What do you think about being a member of your task group in this threatening situation?

What is it like for you personally to be a member of your task group in this threatening situation?

How do you feel about being a member of your task group in this threatening situation?

Like Study 2 and for the same reasons, Study 3 did not include a distracting task between the threat and group task — the threat manipulation transitioned immediately to final instructions for the group task.

Procedures Continued

Participants were given a summary of the network task instructions, including condition-relevant reminders (position in network, response type results, and rules reflecting the threat manipulation). They completed five rounds of negotiation exchanges, and are led to anticipate another set of five rounds (though these do not happen). The simulated high-power actor in Position A was programmed to demand progressively more points throughout the task, and not to continue to a second set of negotiations on

one of the rounds. Participants answered a series of questions about the task and impressions of their partner, and were given the opportunity to vote for or against joining a coalition to remove some of A's power for the following rounds. After this, participants were asked manipulation-check questions and debriefed.

Study 3 Data

The final, balanced Study 3 sample includes data from 204 participants. Study 3 includes data from women only (Study 1 and Study 2 were mixed-gender), and they were selected later from the same pool of potential participants as most of the Study 2 participants. As in Study 2, preference was given to those not indicating suspicion about the validity of group studies on MTurk, but the Study 3 sample was more inclusive of these participants because of retention challenges toward the end of this data collection. Participants in the group study were required to complete both the screener and pretest beforehand. As in Study 2, group study data were merged with screener responses and any flags noted from the screener and pretest stages.

The criteria for keeping data in the final sample were also loosened as in Study 2. I determined that it was not reasonable to expect great success with threat manipulation checks, so I was lenient with these. I reassessed these data rejection criteria during the data analysis process. These decisions highlight how the threat instructions were likely more complex for the participants, so it makes sense that they were more difficult to describe accurately. By keeping only the most attentive participants in the threat conditions (the ones who can describe them most accurately) and having more lenient standards for the nonthreat conditions, this could have potentially biased the sample.

However, because these decisions were made consistently across the conditions, this was not expected to severely undermine the quality of the data. I assessed responses to questions about the threat and status manipulations in the manipulation checks section in Chapter 8.

Data Acceptance and Quality

Of all collected cases (excluding those resulting from administrative error, and without any balancing across conditions), the acceptance rate by the strictest standards did not vary statistically across conditions (chi square = 3.420, $p = 0.331$). The overall acceptance rate is 91.91%. The rate for condition 1 is 93.55%, condition 2 is 89.47%, condition 3 is 88.14%, and condition 4 is 96.49%. However, the acceptance rate by looser standards is higher, at 96.60%. This rate accepted some participants who expressed that suspicion affected their behavior in certain ways or they did not act as though real. For the looser acceptance outcome, the difference across conditions approached statistical significance (chi square = 7.271, $p = 0.064$). The looser acceptance rates are as follows: condition 1 is 100%, condition 2 is 96.49%, condition 3 is 91.52%, and condition 4 is 98.25%.

I explain my balancing procedures for the final, balanced sample for Study 3. Between 51 and 58 cases per condition were accepted by the strictest standards. For condition 1 (low-status participant with high-status partner, without threat), the count was 58, for condition 2 (low-status self with threat) it was 51, for condition 3 (high-status self without threat) it was 52, and for condition 4 (high-status self with threat) it was 55. Because there is a noteworthy difference between 51 and 58 cases, I did not assume the

conditions were roughly balanced. Instead, I randomly drop cases from the final sample, such that each condition has 51 total cases, to balance the final sample. This is the same approach used within each gender-experimental condition group in Study 2.

Assessment of the Study 3 Sample

See Appendix 3 for a list of control and outcome measures included in the Study 3 analyses. In the final balanced sample, a few variables were uneven across conditions, which could have been potentially problematic in terms of isolating causality. See the tables and description of analyses below.

Table 11: Study 3 Demographics and Data Quality

Study 3 Demographics and Data Quality	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.078	51	0.059	51	0.039	51	0.059	51
American Indian/Alaskan Native indicator	0.020	51	0.039	51	0.059	51	0.020	51
Black/African American indicator	0.059	51	0.078	51	0.098	51	0.098	51
East Asian indicator	0.020	51	0.000	51	0.000	51	0.059	51
White/Caucasian indicator	0.941	51	0.902	51	0.902	51	0.863	51
Other race/ethnicity indicator	0.000	51	0.020	51	0.000	51	0.020	51
Racial/ethnic minority indicator	0.157	51	0.176	51	0.176	51	0.176	51
How often use MTurk to make basic ends meet	4.863	51	4.961	51	4.706	51	4.549	51
	1.456		1.822		1.487		1.604	

Study 3 Demographics and Data Quality	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Highest education in household	3.725	2.040	3.902	2.394	3.804	2.136	3.392	1.823
		51		51		51		51
Social class rating	3.275	1.078	3.176	0.974	3.157	1.027	3.294	0.986
		51		51		51		51
Age in years	37.647	10.974	40.490	13.949	40.686	11.153	37.235	11.803
		51		51		51		51
Indicates worked w/ other MTurkers - yes	0.275		0.471		0.431		0.529	
		51		51		51		51
Indicates worked w/ other MTurkers - yes/not sure	0.549		0.647		0.569		0.667	
		51		51		51		51
Indicates worked w/ other MTurkers - not sure	0.275		0.176		0.137		0.137	
		51		51		51		51
Self-reported completion time est. in minutes (recoded)	50.660	21.855	47.440	13.539	48.843	11.890	50.140	11.949
		50		50		51		50
Flag for issues noted during study	0.020		0.039		0.020		0.059	
		51		51		51		51
Flag for comment indicating potential issue at end of group study	0.137		0.157		0.235		0.294	
		51		51		51		51
Flag - potential doubt/further scrutiny about keeping data	0.039		0.176		0.059		0.059	
		51		51		51		51
Flag for missed questions/technical trouble during pretest	0.373		0.216		0.392		0.235	
		51		51		51		51
Flag for suspicion about group studies indicated during screener	0.235		0.157		0.020		0.098	
		51		51		51		51
Answered attention check question correctly	0.980		1.000		0.980		1.000	
		51		51		51		51
Tried best during study	1.000		0.980		0.980		1.000	
		51		51		51		51

Study 3 Demographics and Data Quality	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Hispanic/Latino indicator	0.069		0.049		0.059		0.059	
		102		102		102		102
American Indian/Alaskan Native indicator	0.029		0.039		0.039		0.029	
		102		102		102		102
Black/African American indicator	0.069		0.098		0.078		0.088	
		102		102		102		102

Study 3 Demographics and Data Quality	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
	0.010		0.029		0.010		0.029	
East Asian indicator		102		102		102		102
White/Caucasian indicator	0.922		0.882		0.922		0.882	
		102		102		102		102
Other race/ethnicity indicator	0.010		0.010		0.000		0.020	
		102		102		102		102
Racial/ethnic minority indicator	0.167		0.176		0.167		0.176	
		102		102		102		102
How often use MTurk to make basic ends meet	4.912	1.642	4.627	1.541	4.784	1.467	4.755	1.720
		102		102		102		102
Highest education in household	3.814	2.215	3.598	1.986	3.765	2.079	3.647	2.132
		102		102		102		102
	3.225	1.024	3.225	1.004	3.216	1.050	3.235	0.977
Social class rating		102		102		102		102
	39.069	12.569	38.961	11.556	39.167	11.114	38.863	12.960
Age in years		102		102		102		102
Indicates worked w/ other MTurkers - yes	0.373		0.480		0.353		0.500	
		102		102		102		102
Indicates worked w/ other MTurkers - yes/not sure	0.598		0.618		0.559		0.657	
		102		102		102		102
Indicates worked w/ other MTurkers - not sure	0.225		0.137		0.206		0.157	
		102		102		102		102
Self-reported completion time est. in minutes (recoded)	49.050	18.159	49.485	11.877	49.743	17.481	48.790	12.776
		100		101		101		100
Flag for issues noted during study	0.029	0.170	0.039	0.195	0.020	0.139	0.049	0.217
		102		102		102		102
Flag for comment indicating potential issue at end of group study	0.147		0.265		0.186		0.225	
		102		102		102		102
Flag - potential doubt/further scrutiny about keeping data	0.108		0.059		0.049		0.118	
		102		102		102		102
Flag for missed questions/technical trouble during pretest	0.294		0.314		0.382		0.225	
		102		102		102		102
Flag for suspicion about group studies indicated during screener	0.196		0.059		0.127		0.127	
		102		102		102		102
Answered attention check question correctly	0.990		0.990		0.980		1.000	
		102		102		102		102
Tried best during study	0.990		0.990		0.990		0.990	
		102		102		102		102

These analyses identified potentially problematic variables as the indicator for "not sure" having previous experience working in a group on MTurk, a flag variable indicating potential doubt or further scrutiny about whether to keep the case in the data, a flag variable indicating comments about a potential issue at the end of the group study, a flag variable indicating suspicion expressed about group studies during the screener, and a flag variable indicating missed questions or technical trouble during the pretest. Because earlier cases may have been more likely to be flagged for quality review after the group study, later cases may be more likely to have been flagged during the screener or pretest, and some conditions filled faster than others, these last three variables should be interpreted with caution.

For the proportion indicating "yes" to having previous experience working in a group on MTurk, the comparison across all conditions approaches statistical significance (chi square = 7.435, $p = 0.059$). Differences are statistically significant between conditions 1 versus 2, 1 versus 4, and the combined non-threat and threat conditions (1 and 3 versus 2 and 4) (chi square = 4.12, $p = 0.042$; chi square = 6.70, $p = 0.010$; $z = -2.124$, $p = 0.034$, two-tailed). For the proportion indicating "not sure" to having previous experience working in a group on MTurk, proportions across the conditions do not differ statistically (chi square = 4.325, $p = 0.228$), but the differences between conditions 1 versus 3 and 1 versus 4 approach statistical significance (chi square = 2.84, $p = 0.092$ for both comparisons). For the proportion providing comments about a potential issue at the end of the group study, proportions across the conditions do not differ statistically (chi square = 4.917, $p = 0.178$), but the combined status condition comparison is statistically significant ($z = -2.078$, $p = 0.038$, two-tailed), and difference between conditions 1 versus

4 approaches statistical significance (chi square = 3.57, $p = 0.059$). For the proportion flagged for potential doubt or further scrutiny about whether to keep the case in the data, proportions across the conditions differ statistically (chi square = 7.893, $p = 0.048$). The comparison between conditions 1 versus 2 is statistically significant (chi square = 4.20, $p = 0.041$), and the comparisons between conditions 2 versus 4 and 2 versus 3, and the combined non-threat and threat conditions approach statistical significance (chi square = 3.10, $p = 0.078$; chi square = 3.10, $p = 0.078$; $z = -1.773$, $p = 0.076$, two-tailed). For the proportion flagged for expressing suspicion about group studies during the screener, proportions across the conditions differ statistically (chi square = 11.461, $p = 0.009$). Comparisons between conditions 1 versus 3, 2 versus 3, and 1 versus 4, and the comparison between the combined low-status and high-status conditions are statistically significant (chi square = 6.62, $p = 0.010$; chi square = 4.26, $p = 0.039$; chi square = 3.27, $p = 0.070$; $z = 2.939$, $p = 0.003$, two-tailed). For the proportion flagged for missed questions or technical trouble during the pretest, proportions do not differ statistically across the conditions (chi square = 6.025, $p = 0.110$). Comparisons between conditions 1 versus 2, 3 versus 4, and 2 versus 3 approach statistical significance (chi square = 2.97, $p = 0.085$; chi square = 2.87, $p = 0.090$; chi square = 3.67, $p = 0.055$), and the combined status non-threat and threat condition comparison is statistically significant ($z = 2.436$, $p = 0.015$, two-tailed).

Other characteristics examined but not statistically significant across conditions or in any contrasts in the full (balanced) sample are Hispanic/Latino indicator (chi square = 0.708, $p = 0.871$), American Indian/Alaska Native (chi square = 1.627, $p = 0.653$, Black or African American (chi square = 0.706, 0.872, other race/ethnicity (chi square = 2.020,

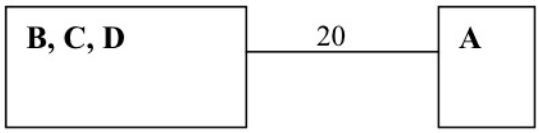
$p = 0.568$), indicator for any racial or ethnic minority indicated (any option other than White or Caucasian) (chi square = 0.104, $p = 0.991$), education level ($F = 0.65$, $p = 0.5829$), frequency of using MTurk to make basic ends meet ($F = 0.56$, $p = 0.641$), social class ($F = 0.23$, $p = 0.873$), completion time estimate (recoded version) ($F = 0.44$, $p = 0.725$), flag for yes or not sure indicated for having previously worked with other MTurkers on a task (chi square = 2.139, $p = 0.544$), and flag for potential participant issue (e.g., having to restart or reporting another problem during the study — with very serious cases being rejected from the final sample) (chi square = 1.627, $p = 0.653$). Age in years age ($F = 1.18$, $p = 0.320$), correct response to the attention check question (chi square = 2.020, $p = 0.568$), and whether the participant reported trying their best during the study (chi square = 2.020, $p = 0.568$) were also considered, and determined not to be problematic. No participants in the full, balanced sample identified as Native Hawaiian or Pacific Islander, South American Indigenous or Native, South Asian, Southeast Asian, or West Asian or Middle Eastern, and none were flagged for identification code match or other administrative issues on the participant's end.

For the East Asian indicator, proportions did not differ statistically across the conditions in the full sample (chi square = 6.120, $p = 0.106$), and though the difference of proportion logistic regression analyses did not reveal any statistical differences, initial contrasts using differences of means and linear regression did (conditions 2 versus 4, and conditions 3 versus 4, both $F = 4.64$, $p = 0.032$). These initial results are why East Asian is included in the full sample control variables.

Outcome Measures

Outcome measures assessed perceptions of legitimacy of the power structure, acting according to this legitimacy structure, and motivations for exercising power. The primary behavioral indicator of perceived legitimacy of power was the proportion of participants voting for or against joining a coalition to remove some of the powerful partner's power. The instructions specified that all three low-power actors (B, C, and D) must vote in favor of the coalition for it to take place. The figure below shows the coalition structure:

Figure 3. Study 3 Coalition Network Structure



This structure would ensure more points on average for the low-power actors (B, C, and D), but it does not allow for the bonus points when all possible exchanges take place. If actor A uses the power competently in the standard structure, everyone, including the low-power actors, would end up with more points. Because of this, the low-power actors should only vote to join the coalition if they do not trust actor A to use it competently. As in Lucas et al. (manuscript in progress), I expect this to reflect perceptions of legitimacy.

A higher proportion of participants with low-status partners voting in favor of joining a coalition than participants with high-status powerful partners would suggest that participants view low-status powerful actors as less legitimate.

Participants voted and confirm their vote after a series of questions about the partner's legitimacy, both before and after the network exchange. Voting both before and after allows distinction between participants' expectations and perceptions of legitimate use of power, and confirming the votes after questions reflecting attitudes about the high-power actor and the situation allows for determination of whether answering these questions affected the participants' voting behaviors.

Perceptions and expectations of legitimacy were measured with ratings of how fairly, legitimately, competently and according to the rules the participant expected the powerful actor to use their power before the task, and how the partner used their power after the task. As in Study 2, questions also asked about cohesion (feeling as part of the group) and wanting to work with the partner again. Several of these measures were combined into scales. The pre-group task perception of partner legitimacy scale (Chronbach's $\alpha = 0.919$ includes the following partner expectation items: partner motivated to benefit group during task, network positions structured how they should be, partner should be in high-status position, partner use power in ways to benefit group, partner use power appropriately, partner use power fairly, partner use power selfishly (reverse-coded), partner use power competently, partner use power according to informal rules and norms, partner use powers in way should use it, partner is competent, trust partner, rating of partner's contrast sensitivity ability, and wanting to work with the partner again. These corresponding measures are also computed for the post-group task partner legitimacy scale (Chronbach's $\alpha = 0.937$). Three individual legitimacy items did not consistently improve reliability of the legitimacy scale, so they were analyzed

separately. These are (both pre- and post-group task): partner motivated to benefit self during task, extent think partner use power, and partner use power to benefit self.

Another behavioral indicator of acceptance of power measured was quantity (total or average) of points the participant offered to the partner during the negotiations. Offering more points to the high-power partner (while demanding fewer for oneself) would reflect deference to the partner's power. I predict that participants will act according to the legitimacy structure, such that low-status participants will accept fewer points than high-status participants, and this difference will be greater under threat (Prediction 5). This was considered alongside the measures of points offered. Participants were asked about perceptions of A's motives for using power, particularly selfishness versus ingroup prosociality. High-status participants with low-status Partner A attributing more selfishness to A than low-status participants with high-status Partner A would also support Prediction 5. Support for these predictions would suggest greater adherence to legitimacy of power as a worldview when under threat.

As in Study 1 and Study 2, scales are computed from questions also address feeling personally threatened (Chronbach's $\alpha = 0.948$) and feeling threatened in terms of the group (Chronach's $\alpha = 0.950$).

Because some interesting patterns arose from initial Study 2 analyses suggesting greater deference to low-status group members from high-status group members when the group is threatened, I included additional questions about hypothetical use of power. Among these are rating of extent to which the participant would use power, using it prosocially, using it selfishly, and a hypothetical point offer to the partner as if the power positions were reversed. This may perhaps reflect greater motivation to cooperate with

one's group when under threat. Responses to questions about cohesion (i.e., feeling part of one's group) may also provide insight.

Study 3 Analyses

As in Study 2, the comparisons of demographics and outcome measures across conditions used tests of differences between conditions and regression analyses as described in the Analyses Overview section in Chapter 2. For continuous outcome variables, these tests accommodated means (e.g., t-test and linear regression), and for indicator outcome variables, these tests accommodated proportions (e.g., *prtest* in *Stata* and logistic regression). When the comparisons between conditions included control variables (control models specified below), the coefficient of the experimental condition (status or threat manipulation) within a regression model or a post-estimation test of differences of marginal means represented this statistical comparison. If the main analyses were initially regression models, control variables were simply added for the control model analyses.

To test my initial assumption that people treat high-status partners as more legitimate than low-status partners (and occupying the complementary status position), I compared the behavioral (e.g., voting) and legitimacy rating scores across the status conditions within each respective threat condition, and also pooled the results to test both low-status partner conditions (non-threat and threat) against both high-status partner conditions. If the differences of means are statistically significant such that those in the high-status partner conditions behave as though their partner is more legitimate and rate

their partners as higher in legitimacy than those in the low-status positions, these results would support this initial assumption.

To test Prediction 5, that threats increase status-consistent legitimacy behaviors and evaluations, I tested for differences in means between the non-threat and threat conditions within the respective status conditions. Status-consistent responses are treating with more legitimacy and ratings of higher legitimacy among participants with high-status partners, and the opposite for participants with low-status partners. Statistically significant threat comparisons in the predicted directions would support Prediction 5. Differences in the threat coefficients by status were also tested using the *suest* procedure in *Stata* (help *suest*), to assess whether the threat effect statistically differs between the participants with high- compared to low-status partners. The test statistic is chi-square, which is a one-tailed test. Because the test is directional, the statistical significance threshold is adjusted in the direction predicted, with $p < 0.10$ being the threshold for statistical significance, and $p < 0.20$ being the threshold for approaching statistical significance. Statistically significant differences of coefficients in the direction predicted would support Prediction 5.

Study 3 Control Models

Based on the above results assessing the Study 3 sample, the following variables were included in control analyses, which were compared with the main results:

- East Asian indicator
- Previous MTurk group participation “yes” indicator
- Previous MTurk group participation “not sure” indicator
- Flag for comment indicating potential issue at end of group study

- Flag for potential doubt or further scrutiny about whether to keep the case in the data
- Flag for expressing suspicion about group studies during the screener
- Flag for missed questions or technical trouble during the pretest

As in Study 1 and Study 2, in the event the statistical software excluded any of these variables due to colinearity, results from the remaining model were presented. As discussed above, East Asian was included based on differences between conditions found in initial analyses. Including this variable was not expected to decrease the validity of results, so it remained in the control models.

Chapter 8: Study 3 Results and Discussion

This chapter presents and discusses the results from Study 3, on the legitimacy of power structures in groups. All participants were led to believe they were in a position of low power, while their partner is in a position of high power.

Results provide a great deal support for Prediction 5, that threat increases the promotion of power legitimately held (by high-status actors), and that high-status participants with powerful low-status partners especially respond. There is also some support for more general ingroup prosociality and cohesion effects under threat. Further, there is some potential evidence that low-status participants with powerful high-status partners are opposed to their partner's power before the group task, but after they were more so in favor of it. The results suggest that high-status participants are especially invested in promoting the legitimacy of power, and they perhaps felt indignant about the low-status partner's powerful position and selfish behavior. By comparison, the pattern in results for low-status participants suggests that their responses were more so practical in terms of the network task than internalizing a worldview about the legitimacy of power by status. I consider an alternative explanation to the ingroup prosociality worldview about the legitimacy of power, such that participants act in self-interested ways to maximize their own profit points.

Variables included in the control models are as follows:

- East Asian indicator
- Previous MTurk group participation "yes" indicator
- Previous MTurk group participation "not sure" indicator
- Flag for comment indicating potential issue at end of group study
- Flag for potential doubt or further scrutiny about whether to keep the case in the data
- Flag for expressing suspicion about group studies during the screener

- Flag for missed questions or technical trouble during the pretest

Initial Assumption: Status increases Legitimacy

I first test my initial assumption that high status increases treatment of powerful actors as legitimate, and low status decreases treatment of powerful actors as legitimate. The results somewhat support this assumption (especially for subjective legitimacy evaluations), and they are detailed below. Unless otherwise specified, conclusions did not change when including control variables in these analyses. See tables below for means across conditions and condition combinations.

Legitimacy Evaluation Scale: For the scale summarizing partner legitimacy evaluations before the group task, low-status participants evaluated their high-status partners as more legitimate than high-status participants evaluated their low-status partners (combined means $t = 8.169$, $p < 0.001$, two-tailed; non-threat means $F = 34.00$, $p < 0.001$; threat means ($F = 32.17$, $p < 0.001$). For the scale summarizing partner legitimacy evaluations after the group task, the results also statistically support the assumption (combined means $t = 5.280$, $p < 0.001$, two-tailed; non-threat means $F = 8.62$, $p = 0.004$; threat means $F = 20.97$, $p < 0.001$). For the change in these legitimacy ratings from before to after the task the non-threat condition status comparison approaches statistical significance ($F = 2.81$, $p = 0.095$).

Vote for a coalition before the group task: Participants received four total opportunities to vote in favor of or against a coalition against the powerful actor — twice before the group task, and twice after (and ostensibly before another series of rounds). Participants were asked to submit a vote before answering a series of questions about

their perceptions of legitimacy, and again after (in case answering those questions affects thinking about the powerful actor and in turn voting).

For the first vote before the group task, there were no statistically significant differences by status condition (combined proportions $z = 0.000$, $p = 1.000$; non-threat proportions $z = 0.204$, $p = 0.839$; threat proportions $z = -0.198$, $p = 0.843$). The non-threat condition status comparison was in the opposite direction expected, while the threat condition status comparison was in the direction expected. Including control variables, the overall status comparison remains not statistically significant, though is in the opposite direction expected ($z = -0.46$, $p = 0.643$, two-tailed). Statistical conclusions are the same for the second vote before the group task, but the combined status means changes to the direction expected, and the threat means are the same (combined proportions $z = -0.421$, $p = 0.674$; non-threat proportions $z = 0.606$, $p = 0.545$; threat proportions $z = 0.000$, $p = 1.000$). Including control variables, the overall status comparison remains not statistically significant, though is in the opposite direction expected ($z = -0.17$, $p = 0.868$, two-tailed). Of potential interest, for the non-threat condition status comparison, the difference approaches statistical significance such that high-status participants are more likely to change in this way ($z = -1.758$, $p = 0.079$).[28] Otherwise, proportions changing votes before the task do not differ by status, and neither do rates for changing from no to yes or from yes to no.

For an indicator of whether the participant ever voted in favor of a coalition before the group task, the status comparisons are not statistically significant, but the comparison within the non-threat conditions is in the opposite direction expected ($z = -$

[28] Control model results not available.

0.402, $p = 0.687$, two-tailed), and both the threat condition and overall status comparisons are in the direction expected ($z = 0.201, 0.421$; $z = -0.140$, $p = 0.445$). Including control variables, status comparisons remain not statistically significant, but the combined status condition comparison is in the opposite direction expected and approaches statistical significance ($z = -0.45$, $p = 0.654$), and the non-threat condition status comparison changes to the direction expected ($z = -0.66$, $p = 0.510$).

Vote for a coalition after the group task: For the first vote after the group task, the status comparison is statistically significant in the direction predicted for the threatened participants ($z = -1.805$, $p = 0.018$). Results are not statistically significant, though in the direction predicted for the combined status condition proportions ($z = -0.563$, $p = 0.287$), and in the opposite direction predicted for the non-threatened participants ($z = 0.991$, $p = 0.322$, two-tailed). Including control variables, the threat condition status comparison approaches statistical significance ($z = 1.39$, $p = 0.082$). Statistical conclusions are the same for the second vote after the group task (combined proportions $z = -0.704$, $p = 0.12$; non-threat condition proportions $z = 0.991$, $p = 0.322$ two-tailed; threat condition proportions $z = -2.012$, $p = 0.022$; threat condition proportions when including controls $z = 1.63$, $p = 0.052$). Potentially of interest, rates of changing votes after the task do not differ by status, and neither do rates for changing from no to yes or from yes to no.

For an indicator of whether the participant ever voted in favor of a coalition before the group task, both the threat condition and combined status comparisons are in the direction expected, and the threat condition comparison is statistically significant ($z = -1.818$, $p = 0.035$), while the combined comparison is not ($z = -0.706$, $p = 0.480$). The

non-threat condition status comparison is not statistically significant, though in the opposite direction expected ($z = 0.794$, $p = 0.428$, two-tailed).

These results somewhat support my initial assumption.

Changes in votes pre- to post- group task: There are no statistical differences by status for changes to the first vote pre-group task to the first vote post-group task combined proportions $z = -1.159$, $p = 0.247$; non-threat proportions $z = -1.217$, $p = 0.224$; threat proportions $z = -0.414$, $p = 0.679$; all two-tailed). For changing from no to yes, results approach statistical significance in the direction expected for the non-threat status comparison ($z = -1.485$, $p = 0.069$). The combined status comparison is not statistically significant but also in the direction expected ($z = -0.407$, $p = 0.342$), and the threat condition status comparison is also not statistically significant, though in the opposite direction expected ($z = 0.839$, $p = 0.302$, two-tailed). Including control variables, the threat condition status comparison no longer approaches statistical significance in the direction expected ($z = 1.17$, $p = 0.121$). For changing from yes to no, results are not statistically significant, though in the direction expected for all status comparisons (combined proportions $z = 1.010$, $p = 0.156$; non-threat proportions $z = 1.005$, $p = 0.157$; threat proportions $z = 0.586$, $p = 0279$).[29]

For whether participants changed from the second vote pre-group task to the second vote post-group task, there are no statistical differences by status (non-threat comparison $z = -0.829$, $p = 0.406$; threat comparison $z = -0.427$, $p = 0.670$; combined status comparison $z = 0.594$, $p = 0.553$; all two-tailed). Status comparisons are in the direction expected except for the proportion switching from no to yes for the threatened

[29] Control model result for non-threat status comparison is 0 (omitted).

participants. The comparison for switching from no to yes for non-threatened participants is statistically significant in the direction expected (non-threat proportions z = -1.844, p = 0.065). The rest of these results are not statistically significant for changing the second vote pre- to post-task. The combined status comparison is in the direction expected (z = -0.420, p = 0.337), and the threat condition status comparison is in the opposite direction expected (z = 1.151, p = 0.250). All comparisons for changing the second vote from yes to no are in the direction expected but not statistically significant (combined proportions z = 1.010, p = 0.156; non-threat proportions z = 1.005, p = 0.157; threat proportions z = 0.586, p = 0.279). Including control variables, for changing the second vote from no to yes, the non-threat condition status comparison, is no longer statistically significant (z = 1.27, p = 0.203).

For an indicator of whether the participant ever voted in favor of a coalition (either before or after the group task), the non-threat condition, threat condition, and combined status comparisons are all in the direction expected, but none are statistically significant (non-threat conditions z = -0.209, p = 0.417; threat conditions z = -1.122, p = 0.131; combined status comparison z = -0.913, p = 0361).

These results somewhat support the initial assumption.

Hypothetical Point Offers to Partner: One of the questions designed to measure perceptions of the partner's legitimacy asked the participant to submit a fictitious point offer to the partner, similar to what is done during the group task. The participant must allocate 20 points between themselves and the partner. For this outcome before the group task, results are in the opposite direction predicted, such that low-status participants with high-status partners offer fewer points than do high-status participants with low-status

partners. The result for the combined means is statistically significant (t = -2.272, p = 0.024, two-tailed), the result for the non-threat means is not statistically significant (F = 2.35, p = 0.127), and the result for the threat means approaches statistical significance (F = 2.78, p = 0.097). Including control variables, the threat condition status comparison no longer approaches statistical significance in the opposite direction predicted (F = 2.49, p = 0.116). For this outcome after the group task, none of the results are statistically significant, though they remain in the opposite direction expected for both the combined means and non-threat means (combined means t = -0.278, p = 0.391; non-threat means F = 0.54, p = 0.463), but they are in the direction expected for the threat means (F = 0.12, p = 0.732). Of potential interest, when comparing this outcome before and after the group task, the differences are in the direction expected, such that high-status participants with low-status partners decrease their offers more so than low-status participants with high-status partners. The comparisons are statistically significant for the combined means and threat means (combined means t = 2.018, p = 0.023; threat means F = 3.41, p = 0.066), but not the non-threat means (F = 1.01, p = 0.316). A similar question following this one both before and after the group task asks participants to submit a hypothetical offer as if the power roles were reversed (i.e., the participants now has power over A). See the Prediction 5 analyses for further results for this outcome.

Only the pre-to-post change part of these results somewhat supports the initial assumption. Otherwise, these results do not support the initial assumption, and even provide some evidence in the opposite direction.

Mean points offered to the partner during the task: Status results for the mean number of points offered to the partner during the group task are in the direction expected

for the combined and threat condition means, such that low-status participants with high-status partners offer their partners more points than high-status participants with low-status partners. This is statistically significant for the threatened participants ($F = 5.78$, $p = 0.017$) but not for the combined means ($t = 1.025$, $p = 0.153$). The status result for the non-threat conditions is not statistically significant, though in the opposite direction expected ($F = 0.88$, $p = 0.350$).

These results somewhat support the initial assumption.

Proportion of partner offers participant accepts: Status results for the proportion of partner offers the participant accepts are in the same direction and of the same statistical significance as those for the mean points offered. The proportion of offers accepted is greater for low-status participants with high-status partners than high-status participants with low-status participants for the threat condition results. This is statistically significant for the threat condition results ($F = 4.25$, $p = 0.041$), and not statistically significant but in the same direction for the combined results ($t = 0.884$, $p = 0.189$). The status result for the non-threat conditions is not statistically significant , though in the opposite direction predicted ($F = 0.64$, $p = 0.423$).

Proportion who want to be matched with partner again: Because I assess this measure as both a status and cohesion outcome, these statistical tests are two-tailed. Status comparisons for the proportion of participants indicating they would want to be matched with the same partner again (Partner A) are in the direction expected. The combined and threat condition status comparisons are statistically significant ($z = 2.041$, $p = 0.041$; $z = 2.287$, $p = 0.022$), and the non-threat condition comparison is not ($z = 0.606$, $p = 0.545$). Including control variables, the combined status comparison is no

longer statistically significant (z = -1.60, p = 0.109), and the threat condition status comparison only approaches statistical significance (z = 1.78, p = 0.075).

These results somewhat support the initial assumption.

I now assess some legitimacy-related outcomes that were not included in the overall legitimacy perception scale for internal validity reasons.

Partner being motivated to benefit self: expectation and perception: For the participant's expectation of the partner's self motivation before the group task, these status results are not statistically significant, but in the opposite direction expected, such that low-status participants with high-status partners expect these partners to be more self-motivated (therefore less legitimate) than high-status participants with low-status partners (combined means t = 0.440, p = 0.660, two-tailed; non-threat condition means F = 2.20, p = 0.140; threat condition means F = 0.74, p = 0.392). For this rating after the group task, these results are again not statistically significant and in the opposite direction expected (combined means t = 0.968, p = 0.334, two-tailed; non-threat condition means F = 1.49, p = 0.223; threat condition means F = 0.02, p = 0.889). Of potential interest, changes in these ratings pre- to post-group task are not statistically significant but in the opposite direction expected for the combined and threat condition comparison, such that the decrease in points, indicating less perceived legitimacy, is greater in the high-status condition, but are in the direction expected for the non-threat condition comparison, such that the decrease in points is lower in the high-status condition (combined mean changes t = 0.258, p = 0.797, two-tailed; non-threat condition mean changes F = 0.37, p = 0.542; threat condition mean changes F = 0.95, p = 0.330).

Partner using power: expectation and perception (reverse-coded): For the pre-group-task expectation of the partner to use power for the threat conditions, results are not statistically significant, though in the direction expected ($F = 0.98$, $p = 0.323$). This is such that low-status participants with high-status partners expect them to use the most power. The result for the non-threat and comparisons is statistically significant in the opposite direction expected, ($F = 4.74$, $p = 0.031$), and the combined comparison is not statistically significant though in the same direction ($t = 0.834$, $p = 0.406$, two-tailed). For this measure after the group task (perception of using power), these results are not statistically significant, though in the same directions as before the group task (threat condition $F = 0.08$, $p = 0.772$; non-threat condition means $F = 0.13$, $p = 0.715$; combined means $t = 0.055$, $p = 0.956$, two-tailed). Of potential interest, changes in these ratings from before to after the group task for the non-threat condition comparison approach statistical significance in the direction expected (less of a decrease in points for high-status participants with low-status partners) ($F = 2.45$, $p = 0.119$), and are not statistically significant but in the same direction for the combined comparison ($t = -0.677$, $p = 0.250$). The results for threat condition mean comparisons are not statistically significant though in the opposite direction expected ($F = 0.36$, $p = 0.552$.

Partner using power in ways that benefit self personally: expectation and perception (reverse-coded): I expect that high-status partners will be less associated with using power in selfish ways than low-status partners. A limitation of these measures that rate use of power in a certain way is that they could potentially be confounded with using power in itself, which I expect more of for high-status persons than low-status persons (see literature review information in Chapter 1). As in the previous two legitimacy

outcomes, this measure is also reverse-coded (such that higher scores reflect less of this use of power, and more legitimacy). Using power to benefit oneself is expected to be a less legitimate use of power than using it to benefit the group. For the rating of this expectation before the group task, results are in the opposite direction expected, with the combined and non-threat comparison statistically significant ($t = 2.439$, $p = 0.008$, two-tailed; $F = 8.37$, $p = 0.004$), and the threat condition comparison not statistically significant ($F = 0.33$, $p = 0.564$). For the rating of how the partner used power in this way during the group task, none of the comparisons are statistically significant, though they are in the opposite direction expected (combined means $t = 0.795$, $p = 0.428$, two-tailed; non-threat condition means $F = 0.29$, $p = 0.590$; threat condition means $F = 0.33$, $p = 0.566$). Of potential interest, for the change in these ratings from before to after the group task, the status comparisons for these mean changes are in the opposite direction expected, such that the point decrease is smaller for high-status participants with low-status partners, indicating more legitimacy. The difference approaches statistical significance for the combined threat condition status comparison ($t = -1.664$, $p = 0.098$, two-tailed), is statistically significant in this direction for the non-threat condition status comparison ($F = 5.23$, $p = 0.023$), and is not statistically significant for the threat condition status comparison ($F = 0.01$, $p = 0.939$). When including control variables, the combined comparison no longer approaches statistical significance ($t = 1.31$, $p = 0.192$, two-tailed), and the non-threat condition comparison approaches statistical significance ($F = 3.75$, $p = 0.054$).

Prediction 5: Increased Promotion of Legitimate Power under Threat

Prediction 5 states that threat increases treatment of high-status powerful actors as legitimate, and decreases treatment of low-status powerful actors as legitimate, and in this, the difference in how legitimate individuals treat powerful low-status actors compared to powerful high-status actors will be greater under threat than when not under threat.

Unless otherwise specified, including control variables in these analyses does not change the conclusions.

Table 12: Study 3 Outcomes

Study 3 Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
First pre-coalition vote	0.392	51	0.510	51	**0.373†**	51	**0.529†**	51
Think Partner A motivated to benefit self during network task - pre-	2.216	1.205 51	1.980	1.273 51	1.843	1.255 51	2.196	1.342 51
Extent think Partner A will use their power - pre- (R)	**2.255***	1.129 51	**1.902***	0.964 51	**1.824†**	0.865 51	**2.098†**	1.025 51
Extent think Partner A will use their power in ways that benefit himself or herself - pre- (R)	2.392	1.234 51	2.353	1.246 51	**1.706***	1.006 51	**2.216***	1.286 51
Hypothetical offer to Partner A - pre-	12.510	2.996 51	12.765	3.296 51	13.412	2.685 51	13.745	2.869 51
Legitimacy evaluation scale - pre-	63.571	13.542 49	62.667	13.261 51	48.020	13.303 50	47.765	12.973 51
Final pre-coalition vote	**0.373†**	51	**0.549†**	51	0.431	51	0.549	51
Changed pre-vote	0.020†	51	0.118†	51	0.059	51	0.059	51
Changed pre-vote from no to yes	**0.000***	51	**0.078***	51	0.059	51	0.039	51

Study 3 Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Changed pre-vote from yes to no	0.020	51	0.039	51	0.000	51	0.020	51
Mean points offered during the task	10.627	1.598 51	10.931	1.556 51	**10.938****	1.707 51	**10.135****	1.818 51
Proportion of Partner A offers accepted	**0.685***	0.311 51	**0.794***	0.236 51	0.730	0.298 51	0.678	0.287 51
First post-coalition vote	0.569	51	0.490	51	**0.471***	51	**0.667***	51
Think Partner A motivated to benefit self during network task - post- (R)	1.760	0.960 50	1.686	0.969 51	1.529	0.833 51	1.660	1.022 50
Change in think Partner A motivated to benefit self during network task - pre- to post-	-0.480	0.931 50	-0.294	1.501 51	-0.314	1.407 51	-0.560	1.541 50
Extent think Partner A used their power - post- (R)	1.800	0.990 50	1.804	0.960 51	1.725	0.940 51	1.863	1.184 51
Change in extent think Partner A will use/used their power - pre- to post-	**-0.460†**	1.313 50	**-0.098†**	1.136 51	-0.098	1.063 51	-0.235	1.124 51
Extent think Partner A used their power in ways that benefit himself or herself - post- (R)	**1.660†**	0.939 50	**1.941†**	1.256 51	1.549	0.730 51	1.824	1.126 51
Extent think Partner A will use/used their power in ways that benefit himself or herself - pre- to post-	**-0.740†**	1.242 50	**-0.412†**	1.757 51	-0.157	0.987 51	-0.392	0.981 51
Hypothetical offer to Partner A - post-	11.784	1.858 51	11.784	2.129 51	12.078	1.937 51	11.647	2.143 51
Change in hypothetical offer to Partner A - pre- to post-	-0.725	2.757 51	-0.980	3.911 51	-1.333	2.447 51	-2.098	2.907 51
Legitimacy evaluation scale - post-	58.042	16.561 48	57.000	19.034 50	**48.157***	17.948 51	**41.745***	12.775 51
Change in legitimacy evaluation scale - pre- to post-	-5.196	12.578 46	-5.760	17.576 50	**0.280***	19.692 50	**-6.020***	12.666 51
Final post-coalition vote	0.569	51	0.490	51	**0.471***	51	**0.686***	51
Changed post-	0.000		0.039		0.039		0.020	

Study 3 Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
vote		51		51		51		51
Changed post-vote from no to yes	0.000	51	0.020	51	0.020	51	0.020	51
Changed post-vote from yes to no	0.020	51	0.039	51	0.000	51	0.020	51
Changed first pre- to first post-vote	0.333	51	0.333	51	0.451	51	0.373	51
Changed first pre- to first post-vote from no to yes	0.078	51	0.176	51	0.176	51	0.118	51
Changed first pre- to first post-vote from yes to no	0.020	51	0.039	51	0.000	51	0.020	51
Changed second pre- to second post- vote	0.314	51	0.294	51	0.392	51	0.333	51
Changed second pre- to second post- vote from no to yes	**0.059†**	51	**0.176†**	51	0.176	51	0.098	51
Changed second pre- to second post- vote from yes to no	0.020	51	0.039	51	0.000	51	0.020	51
Ever voted in favor of the coalition pre-	**0.392***	51	**0.588***	51	**0.431†**	51	**0.569†**	51
Ever voted in favor of the coalition post-	0.569	51	0.510	51	**0.490***	51	**0.686***	51
Ever voted in favor of the coalition	0.647	51	0.686	51	**0.667†**	51	**0.784†**	51
Want partner again	0.627	51	0.627	51	0.569	51	0.400	50

Study 3 Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
First pre-coalition vote	0.451	102	0.451	102	**0.382***	102	**0.520***	102
Think Partner A motivated to benefit self during network	2.098	1.239 102	2.020	1.305 102	2.029	1.238 102	2.088	1.306 102

Study 3 Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
task - pre- (R)								
Extent think Partner A will use their power - pre- (R)	2.078	1.059 102	1.961	0.954 102	2.039	1.024 102	2.000	0.995 102
Extent think Partner A will use their power in ways that benefit himself or herself - pre- (R)	**2.373****	1.234 102	**1.961****	1.177 102	2.049	1.172 102	2.284	1.262 102
Hypothetical offer to Partner A - pre-	**12.637***	3.136 102	**13.578***	2.770 102	12.961	2.866 102	13.255	3.114 102
Legitimacy evaluation scale - pre-	**62.110***	13.339 100	**47.891***	13.072 101	55.717	15.472 99	55.216	15.048 102
Final pre-coalition vote	0.461	102	0.490	102	**0.402***	102	**0.549***	102
Changed pre-vote	0.069	102	0.059	102	0.039	102	0.088	102
Changed pre-vote from no to yes	0.039	102	0.049	102	0.029	102	0.059	102
Changed pre-vote from yes to no	0.029	102	0.010	102	0.010		0.029	102
Mean points offered during the task	10.779	1.576 102	10.536	1.800 102	10.783	1.653 102	10.533	1.730 102
Proportion of Partner A offers accepted	0.739	0.280 102	0.704	0.292 102	0.708	0.304 102	0.736	0.268 102
First post-coalition vote	0.529	102	0.569	102	0.520	102	0.578	102
Think Partner A motivated to benefit self during network task - post- (R)	1.723	0.960 101	1.594	0.929 101	1.644	0.901 101	1.673	0.991 101
Change in think Partner A motivated to benefit self during network task - pre- to post- (R)	-0.386	1.249 101	-0.436	1.473 101	-0.396	1.192 101	-0.426	1.519 101
Extent think Partner A used their power - post- (R)	1.802	0.970 101	1.794	1.066 102	1.762	0.961 101	1.833	1.072 102
Change in extent think Partner A will use/used their power - pre- to post-	-0.277	1.234 101	-0.167	1.091 102	-0.277	1.201 101	-0.167	1.126 102
Extent think Partner A used their power in ways that	1.802	1.114 101	1.686	0.954 102	**1.604†**	0.838 101	**1.882†**	1.188 102

Study 3 Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
benefit himself or herself - post-(R)								
Extent think Partner A will use/used their power in ways that benefit himself or herself - pre- to post-	**-0.574†**	1.525 101	**-0.275†**	0.987 102	-0.446	1.153 101	-0.402	1.416 102
Hypothetical offer to Partner A - post-	11.784	1.988 102	11.863	2.044 102	11.931	1.895 102	11.716	2.127 102
Change in hypothetical offer to Partner A - pre- to post-	**-0.853***	3.370 102	**-1.716***	2.701 102	-1.029	2.612 102	-1.539	3.475 102
Legitimacy evaluation scale - post-	**57.510*****	17.781 98	**44.951*****	15.832 102	52.949	17.904 99	49.297	17.829 101
Change in legitimacy evaluation scale - pre- to post-	-5.490	15.309 96	-2.901	16.740 101	-2.344	16.808 96	-5.891	15.218 101
Final post-coalition vote	0.529	102	0.578	102	0.520	102	0.588	102
Changed post-vote	0.020	102	0.029	102	0.020	102	0.029	102
Changed post-vote from no to yes	0.010	102	0.020	102	0.010	102	0.020	102
Changed post-vote from yes to no	0.029	102	0.010	102	0.010	102	0.029	102
Changed first pre- to first post- vote	0.333	102	0.412	102	0.392	102	0.353	102
Changed first pre- to first post- vote from no to yes	0.127	102	0.147	102	0.127	102	0.147	102
Changed first pre- to first post- vote from yes to no	0.029	102	0.010	102	0.010	102	0.029	102
Changed second pre- to second post- vote	0.304	102	0.363	102	0.353	102	0.314	102
Changed second pre- to second post- vote from no to yes	0.118	102	0.137	102	0.118	102	0.137	102
Changed second pre- to second post- vote from yes to no	0.029	102	0.010	102	0.010	102	0.029	102
Ever voted in favor of the coalition pre-	0.490	102	0.500	102	**0.412****	102	**0.578****	102
Ever voted in favor of the	0.539	102	0.588	102	0.529	102	0.598	102

Study 3 Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
coalition post-								
Ever voted in favor of the coalition	0.667	102	0.725	102	0.657	102	0.735	102
Want partner again	**0.627***	102	**0.485***	101	0.598	102	0.515	101

Table 13: Study 3 Differences in Status Coefficients by Threat

Study 3 Outcomes - Comparison of status coefficients by threat	**stat. sig.**	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators), model n	threat status coef.	threat status R-squared (pseudo for indicators), model n	suest chi-square	*p*
First pre- coalition vote		0.162	-0.083	0.000 102	0.079	0.000 102	0.080	0.777
Think Partner A motivated to benefit self during network task - pre- (R)	**†**	**0.588**	-0.373	0.023 102	0.216	0.007 102	2.780	**0.096**
Extent think Partner A will use their power - pre- (R)	*	**0.627**	-0.431	0.045 102	0.196	0.010 102	5.090	**0.024**
Extent think Partner A will use their power in ways that benefit himself or herself - pre- (R)	**†**	**0.549**	-0.686	0.087 102	-0.137	0.003 102	2.720	**0.099**
Hypothetical offer to Partner A - pre-		0.078	0.902	0.025 102	0.980	0.025 102	0.010	0.924
Legitimacy evaluation scale - pre-		0.649	-15.551	0.255 99	-14.902	0.248 102	0.030	0.861
Final pre- coalition vote		-0.245	0.245	0.003 102	0.000	0.000 102	0.190	0.667

Study 3 Outcomes - Comparison of status coefficients by threat	**stat. sig.**	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators), model n	threat status coef.	threat status R-squared (pseudo for indicators), model n	suest chi-square	*p*
Changed pre- vote		-1.897	1.139	0.032 102	-0.758	0.018 102	1.870	0.172
Changed pre- vote from no to yes		-0.735	0.000	0.000 102	-0.735	0.016 102	0.680	0.410
Changed pre- vote from yes to no		-0.713	0.000	0.000 102	-0.713	0.013 102	0.330	0.567
Mean points offered during the task	**	**-1.106**	0.310	0.009 102	-0.796	0.054 102	5.660	**0.017**
Proportion of Partner A offers accepted	*	**-0.161**	0.045	0.006 102	-0.116	0.047 102	4.160	**0.041**
First post- coalition vote	*	**1.126**	-0.394	0.007 102	0.732	0.024 102	3.880	**0.049**
Think Partner A motivated to benefit self during network task - post- (R)		0.204	-0.231	0.017 101	-0.026	0.000 101	0.590	0.441
Change in think Partner A motivated to benefit self during network task - pre- to post-		-0.432	0.166	0.005 101	-0.266	0.008 101	1.280	0.257
Extent think Partner A used their power - post- (R)		0.133	-0.075	0.002 101	0.059	0.001 102	0.220	0.640
Change in extent think Partner A will use/used their power - pre- to post-	†	**-0.499**	0.362	0.023 101	-0.137	0.004 102	2.370	**0.124**
Extent think Partner A used their power in ways that benefit himself or herself - post- (R)		-0.007	-0.111	0.004 101	-0.118	0.003 102	0.000	0.982
Extent think Partner A will use/used their power in ways that benefit himself or herself - pre- to post-	†	**-0.564**	0.583	0.065 101	0.020	0.000 102	2.490	**0.115**
Hypothetical offer to Partner A - post-		-0.431	0.294	0.006 102	-0.137	0.001 102	0.590	0.443
Change in hypothetical offer to Partner A - pre- to post-		-0.510	-0.608	0.014 102	-1.118	0.026 102	0.360	0.548
Legitimacy evaluation scale - post-		-5.370	-9.885	0.077 99	-15.255	0.185 101	1.300	0.254
Change in legitimacy evaluation scale - pre- to post-		-5.735	5.476	0.027 96	-0.260	0.000 101	1.630	0.202
Final post- coalition vote	*	**1.216**	-0.394	0.007 102	0.822	0.030 102	4.480	**0.034**
Changed post- vote		-0.713	0.000	0.000 102	-0.713	0.013 102	0.330	0.567
Changed post- vote from no to yes		0.000	0.000	0.000 102	0.000	0.000 102	0.000	1.000

Study 3 Outcomes - Comparison of status coefficients by threat	**stat. sig.**	**difference in coefficients**	non-threat status coef.	non-threat status R-squared (pseudo for indicators), model n	threat status coef.	threat status R-squared (pseudo for indicators), model n	suest chi-square	*p*
Changed post- vote from yes to no		-0.713	0.000	0.000 102	-0.713	0.013 102	0.330	0.567
Changed first pre- to first post- vote		-0.325	0.496	0.011 102	0.172	0.001 102	0.310	0.578
Changed first pre- to first post- vote from no to yes		-1.398	0.923	0.029 102	-0.474	0.008 102	2.660	0.103
Changed first pre- to first post- vote from yes to no		-0.713	0.000	0.000 102	-0.713	0.013 102	0.330	0.567
Changed second pre- to second post- vote		-0.080	0.496	0.038 102	0.416	0.028 102	0.010	0.904
Changed second pre- to second post- vote from no to yes	*	**-1.911**	1.232	0.048 102	-0.679	0.016 102	4.300	**0.038**
Changed second pre- to second post- vote from yes to no		-0.713	0.000	0.000 102	-0.713	0.013 102	0.330	0.567
Ever voted in favor of the coalition pre-		-0.242	0.162	0.001 102	-0.080	0.000 102	0.180	0.671
Ever voted in favor of the coalition post-	*	**1.059**	-0.315	0.005 102	0.744	0.024 102	3.400	**0.065**
Ever voted in favor of the coalition		0.421	0.087	0.000 102	0.508	0.011 102	0.460	0.496
Want partner again		-0.682	-0.245	0.003 102.000	-0.927	0.038 101	1.400	0.237

Vote for a coalition before the group task: As explained above, participants received four total opportunities to vote in favor of or against a coalition against the powerful actor — twice before the group task, and twice after (and ostensibly before another series of rounds). Before and after the task, participants voted once before a series of questions about perceptions of legitimacy, and once after, in case answering those types of questions affected their thoughts or behaviors.

For the first vote before the group task, proportions do not vary statistically overall across the conditions (chi square = 3.960, $p = 0.266$). The threat effect approaches

statistical significance in the direction predicted for the high-status participants (voting on low-status partners), such that these participants are more likely to vote in favor of a coalition when under threat (z = -1.592, p = 0.056). The difference in proportions for low-status participants is not statistically significant, though in the opposite direction predicted (voting on high-status partners) (z = -1.194, p = 0.233, two-tailed). The difference in coefficients between the status models by threat (using suest) is not statistically significant, though in the direction predicted (chi square = 0.08, p = 0.777). Of potential interest, the difference between the combined threat condition means is statistically significant, such that threatened participants were more likely to vote in favor of the coalition (z = -1.970, p = 0.049, two-tailed).

For the second vote before the group task, the proportions also do not vary statistically across the conditions (chi square = 4.776, p = 0.189). The low-status participant threat comparison approaches statistical significance and remains in the opposite direction predicted (z = -1.788, p = 0.074, two-tailed). The high-status participant threat comparison remains not statistically significant and in the direction predicted (z = -1.188, p = 0.117). The difference in coefficients between the threat models by status is not statistically significant and in the opposite direction predicted (chi square = 0.19, p = 0.667). Of potential interest, the difference between the combined threat condition means remains statistically significant, such that threatened participants are more likely to vote in favor of the coalition (z = -2.103, p = 0.036, two-tailed). Including control variables, the low-status threat comparison no longer approaches statistical significance in the opposite direction predicted (z = 1.46, p = 0.143, two-

tailed). Of potential interest, when including control variables, the combined threat comparison only approaches statistical significance ($z = 1.68$, $p = 0.092$, two-tailed).

The proportion of changes between the first and second votes before the group task does not differ statistically across the conditions (chi square = 4.190, $p = 0.242$). However, the threat comparison between the low-status conditions approaches statistical significance, such that those in the threat condition changed votes more often ($z = -1.958$, $p = 0.050$, two-tailed). Proportions for the high-status conditions are the same ($z = 0.000$, $p = 1.000$, two-tailed). The difference in coefficients between the status models by threat is not statistically significant (chi square = 1.87, $p = 0.171$). Including control variables, the low-status threat comparison no longer approaches statistical significance ($z = 1.59$, $p = 0.112$, two-tailed).[30]

For the proportion changing this vote from no to yes, proportions do not differ statistically across the conditions (chi square = 4.068, $p = 0.254$). However, the threat comparison between the low-status conditions is statistically significant in the opposite direction expected, such that those in the threat condition were more likely to change to a yes vote against the high-status partner ($z = -2.040$, $p = 0.041$, two-tailed). Proportions for the high-status conditions are not statistically significant, though also in the opposite direction predicted ($z = 0.459$, $p = 0.647$). The difference of the status coefficients between models by threat is not statistically significant (chi square = 0.68, $p = 0.410$). Treating the outcome as a mean, including control variables, the low-status threat comparison is not statistically significant in the opposite direction predicted ($F = 1.64$, p

[30] This high-status threat comparison estimate is not available.

= 0.202).[31] For the proportion changing this vote from yes to no, proportions do not differ statistically across conditions (chi square = 2.040, $p = 0.564$) or by any of the threat comparisons, though they were in the direction predicted (low-status conditions, $z = -0.586$, $p = 0.558$; high-status conditions $z = -1.005$, $p = 0.315$). The difference in coefficients between the status models by threat does not differ statistically (chi square = 0.33, $p = 0.567$). Including control variables does not change these conclusions.[32]

For an indicator for whether the participant ever voted in favor of a coalition before the group task, proportions do not differ statistically across the conditions (chi square = 5.863, $p = 0.118$). Proportions for the threat comparison within the low-status conditions are statistically significant in the opposite direction predicted ($z = -1.981$, $p = 0.048$, two-tailed). This comparison for the high-status conditions approaches statistical significance in the direction predicted ($z = -1.386$, 0.083). The difference in coefficients between the status models by threat is in the opposite direction predicted and not statistically significant (chi square = 0.18, $p = 0.671$). Of potential interest, the difference between the combined threat condition means is statistically significant, such that those in the threat conditions are more likely to have voted in favor before the task ($z = -2.381$, $p = 0.017$). Including control variables, the low-status threat comparison is no longer statistically significant in the opposite direction predicted ($z = 1.62$, $p = 0.106$, two-tailed). Of potential interest, including control variables, the combined threat condition comparison only approaches statistical significance ($z = 1.92$, $p = 0.055$, two-tailed).

These results somewhat support Prediction 5 for high-status participants voting against their low-status partners. However, patterns in changes in pre-task votes tend to

[31] Logistic regression estimate not available.
[32] The logistic regression estimate is not available for the high-status threat comparison.

be in the opposite direction predicted. Also notably, overall, threatened participants are more likely to vote in favor of the coalition.

Vote for a coalition after the group task: For the first vote after the group task, proportions do not differ statistically across the conditions (chi square = 4.910, p = 0.179). Threat results for both low-status and high-status participants are in the direction predicted. The high-status result is statistically significant (z = -1.999, p = 0.023), while the low-status result is not (z = 0.794, p = 0.428, two-tailed). The difference of the status coefficients between models by threat is statistically significant in the direction predicted, such that participant status decreases this proportion for non-threatened participants and increases it for threatened participants (chi square = 3.88, p = 0.049). Only the status comparison within the threat conditions is statistically significant (see the initial assumption results above).

For the second vote after the group task, the statistical conclusions are the same as the first post-task vote. Proportions do not differ statistically across the conditions (chi square = 5.932, p = 0.115). The threat comparison for high-status participants is statistically significant in the direction predicted (z = -2.206, p = 0.014), and the low-status result is not statistically significant though in the same direction (z = 0.794, p = 0.214). Also as in the first post-task vote, the difference of the status coefficients between models by threat is statistically significant in the direction predicted, such that participant status decreases this proportion for non-threatened participants and increases it for threatened participants (chi square = 4.48, p = 0.034). Only the overall status comparison for the combined threat conditions is statistically significant (see the initial assumption results above).

As in the pre-task votes, the proportion of changes between the first and second votes after the group task do not differ statistically across the conditions (chi square = 2.255, $p = 0.521$), or for any of the specific comparisons (low-status conditions $z = -1.428$, $p = 0.153$); high-status conditions $F = 0.586$, $p = 0.558$).[33] The difference in coefficients between the status models by threat is not statistically significant (chi square = 0.33, $p = 0.567$). For the proportion changing this vote from no to yes, proportions do not differ statistically across the conditions (chi square = 1.015, $p = 0.798$) or by any of the specific comparisons. The threat comparison within the low-status conditions is in the opposite direction predicted ($z = 1.005$, $p = 0.315$, two-tailed), and proportions for both the threat and non-threat high-status conditions are the same ($z = 0.000$, $p = 1.000$, two-tailed). The difference in coefficients between the status models by threat is not statistically significant (chi square = 0.00, $p = 1.000$).[34] Including control variables, the high-status threat comparison is not statistically significant, though in the direction predicted ($z = 0.67$, $p = 0.251$).[35] For the proportion changing this vote from yes to no, proportions do not differ statistically across conditions ($z = 2.040$, $p = 0.564$), or by any of the specific comparisons. The threat comparison for low-status participants is not statistically significant, though in the direction expected ($z = -0.586$, $p = 0.279$). The threat comparison for high-status participants is also not statistically significant, though opposite of the direction expected ($z = -1.005$, $p = 0.315$). The coefficients between the

[33] The logistic regression control model is not available for the low-status threat comparison.
[34] Treating the outcome as a mean, the result is nonzero (chi square = 0.34, $p = 0.561$).
[35] The low-status threat comparison logistic regression result is not available, and the difference of status coefficients by threat result yields missing values.

threat models by status do not differ statistically (chi square = 0.33, $p = 0.567$). These conclusions do not change when including control variables.[36]

For an indicator for whether the participant ever voted in favor of a coalition after the group task, the difference in proportions do not differ statistically across the conditions ($z = 4.843$, $p = 0.184$). Both the low-status and high-status threat comparisons are in the direction predicted, and the high-status comparison is statistically significant ($z = -2.012$, $p = 0.022$), while the low-status comparison is not ($z = 0.596$, $p = 0.276$). The difference of the status coefficients between models by threat is statistically significant in the direction predicted, such that participant status decreases this proportion for non-threatened participants and increases it for threatened participants (chi square = 3.40, $p = 0.065$). Only the status comparison within the threat conditions is statistically significant (see the initial assumption results above).

These results largely support Prediction 5.

Changes in votes pre- to post- group task: As in the pre- and post-task votes, the proportion of changes between the first vote before and after the task does not differ statistically across the conditions (chi square = 2.013, $p = 0.570$). The high-status condition threat comparison is not statistically significant ($z = 0.579$, $p = 0.562$), and the proportions for low-status participants are the same ($z = 0.000$, $p = 1.000$). The difference in coefficients between the status models by threat is not statistically significant (chi square = 0.31, $p = 0.578$). As in the proportion changing at all, results for specific no to yes and yes to no changes also do not differ across conditions, nor were any of the specific comparisons statistically significant. For the proportion of no to yes changes

[36] The high-status threat comparison using logistic regression is not available.

between the first vote before and after the task, these do not differ statistically across the conditions (chi square = 2.981, $p = 0.395$), and none of the threat comparisons were statistically significant. For the low-status conditions, the difference is in the opposite direction predicted ($z = -1.485$, $p = 0.138$, two-tailed). For the high-status conditions, the difference is in the direction predicted (chi square = 0.839, $p = 0.201$). The difference in coefficients between the status models by threat is in the opposite direction predicted and not statistically significant (chi square = 2.66, $p = 0.103$. For the proportion of yes to no changes between the first vote before and after the task, these also do not differ statistically across the conditions (chi square = 2.040, $p = 0.564$), and none of the threat comparisons are statistically significant. For the low-status conditions, the threat comparison is in the direction expected ($F = -0.586$, $p = 0.279$). For the high-status conditions, the difference is opposite of the direction expected ($z = -1.005$, $p = 0.315$, two-tailed). The coefficients between the status models by threat do not differ statistically (chi square = 0.33, $p = 0.567$).

As in the pre- and post-task votes, and the pre-to-post comparison for the first vote, the proportion of changes between the second vote before and after the task did not differ statistically across the conditions (chi square = 0.07, $p = 0.786$) nor in any of the threat comparisons (low-status comparison $z = 0.215$, $p = 0.830$; high-status comparison $z = 0.618$, $p = 0.537$; combined threat comparison $z = 0.594$, $p = 0.553$; all two-tailed). For the proportion of no to yes changes between the second vote before and after the task, these do not differ statistically across the conditions (chi square = 4.761, $p = 0.190$). For the low-status conditions, the difference approaches statistical significance in the opposite direction expected ($z = -1.844$, $p = 0.065$, two-tailed). For the high-status

conditions, the difference is not statistically significant, though also opposite of the direction expected ($z = 1.151$, $p = 0.250$, two-tailed). The difference of the status coefficients between models by threat is statistically significant in the opposite direction expected, such that participant status increases this proportion for non-threatened participants and decreases it for threatened participants (chi square = 4.30, $p = 0.038$). Only the status comparison for the non-threat conditions is statistically significant (see the initial assumption results above). Including control variables, the low-status comparison no longer approaches statistical significance in the opposite direction expected ($z = 1.21$, $p = 0.225$), and the difference of the status coefficients by threat is no longer statistically significant in the opposite direction predicted (chi square = 7.64, $p = 0.363$). For the proportion of yes to no changes between the second vote before and after the task, these also do not differ statistically across the conditions (chi square = 0.33, $p = 0.567$, and none of the threat comparisons are statistically significant. For the low-status conditions, the difference is in the direction expected ($z = -0.586$, $p = 0.279$) and for the high-status conditions, the difference is opposite of the direction expected ($z = -1.005$, $p = 0.315$, two-tailed). The coefficients between the status models by threat do not differ statistically (chi square = 0.33, $p = 0.567$).

For an indicator for whether the participant ever voted in favor of a coalition either before or after the group task, the difference in proportions does not differ statistically across the conditions (chi square = 2.688, $p = 0.442$). Proportions for the threat comparison for the low-status conditions are in the opposite direction predicted though not statistically significant ($z = -0.420$, $p = 0.674$, two-tailed). This comparison for the high-status conditions approaches statistical significance in the direction predicted

(F = -1.331, p = 0.092). The difference in coefficients between the status models by threat is in the direction predicted but not statistically significant (chi square = 0.46, p = 0.496).

These results provide some support for Prediction 5.

Legitimacy Evaluation Scale: For the scale summarizing partner legitimacy evaluations before the group task, the means differ statistically across the conditions (F = 22.08, $p < 0.001$). Comparing the condition means by threat, results are not statistically significant, with the comparison for high-status participants (with low-status partner) in the direction predicted (F = 0.12, p = 0.734), and the low-status participant comparison in the opposite direction predicted (F = 0.32, p = 0.572). The difference in coefficients between the status models by threat is not statistically significant though in the opposite direction predicted (chi square = 0.03, p = 0.861).

For this scale with corresponding evaluations after the group task, means again differ statistically across the conditions (F = 10.66, $p < 0.001$). The threat comparison for high-status participants is statistically significant in the direction predicted (F = 3.74, p = 0.055). The threat comparison for low-status participants is not statistically significant, though in the opposite direction predicted (F = 0.090, p = 0.758). The difference in coefficients between the status models by threat is not statistically significant, though in the direction predicted (chi square = 1.30, p = 0.254).

Results for the change in this evaluation from before the group task to after the group task follow the same pattern as those for the post-task measure, though the overall difference in means changes across conditions is not statistically significant (F = 1.75, p = 0.159). The threat comparison for the high-status participants is statistically significant

in the direction predicted ($F = 3.92$, $p = 0.049$). The threat comparison for the low-status participants is not statistically significant, though in the opposite direction predicted ($F = 0.03$, $p = 0.863$). The difference in coefficients between the status models by threat is not statistically significant, though in the direction predicted (chi square = 1.63, $p = 0.202$).

These results somewhat support Prediction 5, especially for evaluations of low-status partners (by high-status participants) after the group task.

Hypothetical Point Offers to Partner: As explained above, one of the questions designed to measure perceptions of the partner's legitimacy asked the participant to submit a fictitious point offer to the partner, similar to what was done during the group task. The participant must allocate 20 points between themselves and the partner. For this outcome before the group task, the means across conditions do not differ statistically ($F = 1.88$, $p = 0.135$), and none of the threat comparisons are statistically significant. The comparison for low-status participants is in the direction predicted (making offers to high-status partners, $F = 0.19$, $p = 0.665$) and the comparison for high-status participants is in the opposite direction predicted (making offers to low-status partners, $F = 0.32$, $p = 0.572$). The difference in coefficients between the status models by threat is not statistically significant, though in the opposite direction predicted (chi square = 0.01, $p = 0.924$).

For this outcome after the group task, means again do not differ statistically across the conditions ($F = 0.41$, $p = 0.744$), and none of the threat comparisons are statistically significant. Means for the low-status conditions are the same ($F = 0.00$, $p = 1.000$), and means for the high-status conditions are in the direction predicted ($F = 0.41$, $p = 0.744$). The difference in coefficients between the status models by threat is not

statistically significant, though in the direction predicted (chi square = 0.59, $p = 0.443$). Including control variables, the low-status threat comparison is not statistically significant, though in the direction predicted ($F = 0.00$, $p = 0.946$), and the high-status threat comparison approaches statistical significance in the direction predicted ($F = 1.96$, $p = 0.163$).

For the change before to after the group task for this outcome, the means again did not vary statistically across the conditions ($F = 1.95$, $p = 0.123$), and none of the threat comparisons were statistically significant. The low-status comparison is in the opposite direction predicted ($F = 0.18$, $p = 0.674$) and the high-status comparison is in the direction predicted ($F = 1.60$, $p = 0.208$). The difference in coefficients between the status models by threat is in the direction predicted but not statistically significant (chi square = 0.36, $p = 0.548$). Including control variables, the overall differences in the mean changes across conditions approaches statistical significance ($F = 2.35$, $p = 0.074$), and the high-status threat comparison is statistically significant ($F = 3.05$, $p = 0.083$).

These results do not provide any statistical support for Prediction 5, though some results were in the direction predicted.

Mean points offered to the partner during the task: For the mean number of points participants offered to the partner during the group task, the difference in these means across the conditions approaches statistical significance ($F = 2.60$, $p = 0.054$). For both the low- and high-status participants, the threat comparison for the high-status participants is statistically significant in the direction predicted ($F = 5.88$, $p = 0.016$) but not the low-status participants ($F = 0.84$, $p = 0.361$). The difference of the status coefficients between models by threat is statistically significant in the direction predicted,

such that participant status increases (while partner status decreases) this mean for non-threatened participants and decreases it for threatened participants (chi square = 5.66, p = 0.017). Only the status comparison for the threat conditions is statistically significant (see the initial assumption results above).

These results support Prediction 5.

Proportion of partner offers participant accepts: For the proportion of partner offers the participant accepts, the proportions do not differ statistically across the conditions (F = 1.79, p = 0.150). As in the mean points offered during the task, threat comparisons within the status conditions are in the direction predicted. The threat comparison for the low-status conditions is statistically significant (F = 3.70, p = 0.056), while the high-status comparison is not (F = 0.88, p = 0.349). The difference of the status coefficients between models by threat is statistically significant in the direction predicted, such that participant status increases (while partner status decreases) this proportion for non-threatened participants and decreases it for threatened participants (chi square = 4.16, p = 0.041). However, only the status comparison for the threat conditions is statistically significant (see the initial assumption results above). Including control variables, the overall differences in this proportion across the conditions approaches statistical significance (F = 2.21, p = 0.089).

These results support Prediction 5.

Wanting to be matched with the same partner again: As in Study 2, I consider wanting to be matched with the same partner again as both a partner status evaluation and a group cohesion outcome. Here I consider it as a status outcome. Because I consider both treatments, I use statistical test criteria consistent with two-tailed tests. For this

outcome, results suggest better reception of a high-status partner than a low-status partner in the position of power, rather than feeling more cohesive with any partner following threat (as initially predicted). The differences in proportions across the conditions approach statistical significance (chi square = 7.073, $p = 0.070$). The low-status proportions are the same ($z = 0.000$, $p = 1.00$, two-tailed), and the high-status threat comparison approaches statistical significance such that threat decreases this outcome ($z = 1.695$, $p = 0.090$, two-tailed). The status coefficients by threat do not differ statistically (chi square = 1.51, $p = 0.220$), though the pattern is in the opposite direction predicted. As noted above, the status comparison is statistically significant, but not the non-threat condition comparison. When including control variables, the high-status threat comparison no longer approaches statistical significance ($z = 0.98$, $p = 0.326$). Treating the outcome as a mean, when including control variables, the differences in proportions across conditions no longer approach statistical significance ($F = 1.35$, 0.259).

I now assess some legitimacy-related outcomes that were not included in the overall legitimacy perception scale for internal validity reasons.

Partner being motivated to benefit self: expectation and perception: For the pre-group task evaluation of to what extent the participant thinks the partner is motivated to benefit themselves, means do not differ statistically across the conditions ($F = 1.01$, $p = 0.388$). Threat comparisons for both the low- and high-status participants are opposite of the direction predicted. The high-status threat comparison approaches statistical significance in the opposite direction predicted ($F = 1.97$, $p = 0.162$), and the low-status threat comparison is not statistically significant ($F = 0.88$, $p = 0.351$). The difference of the status coefficients between models by threat approaches statistical significance in the

opposite direction predicted (chi square = 2.78, $p = 0.096$), such that both status comparisons are in the opposite direction predicted. However, neither status comparison within either of the threat conditions is statistically significant (see initial assumption results above). Including control variables, the difference of the status coefficients between models by threat no longer approaches statistical significance in the opposite direction predicted (chi square = 2.44, $p = 0.118$).

For the post-group task evaluation of to what extent the participant thinks the partner was motivated to benefit themselves, the means again do not vary statistically across the conditions ($F = 0.52$, $p = 0.669$). Threat comparisons for both low- and high-status participants are not statistically significant, though in the opposite direction predicted ($F = 0.15$, $p = 0.697$; $F = 0.48$, $p = 0.490$). The combined non-threat and threat condition means are the same ($F = 0.00$, $p = 1.000$). The difference in coefficients between the status models by threat is not statistically significant, though also in the opposite direction predicted (chi square = 0.59, $p = 0.441$). Including control variables, the combined threat condition comparison is not statistically significant, but in the direction such that threatened participants rate the partner as more ingroup prosocial ($t = 0.01$, $p = 0.993$, two-tailed).

For the change in this evaluation from before to after the group task, means again do not statistically differ across the conditions ($F = 0.45$, $p = 0.717$). For both the low- and high-status participants, these changes are not statistically significant, though in the direction expected ($F = 0.47$, $p = 0.496$; $F = 0.82$, $p = 0.367$). The difference in coefficients between the status models by threat is also not in statistically significant, though in the direction expected (chi square = 1.28, $p = 0.257$).

These results do not support Prediction 5, and provide some evidence in the opposite direction.

Partner using power: expectation and perception: For the pre-group task evaluation of to what extent the participant expects the partner to use power, means do not differ statistically across the conditions ($F = 1.93$, $p = 0.125$). Threat comparisons for both low- and high-status participants are in the direction predicted. The low-status participant (with high-status partner) threat comparison is statistically significant such that participants expect the partner to use more power when threatened ($F = 3.17$, $p = 0.076$), and high-status participant (with low-status partner) threat comparison approaches statistical significance, such that participants expect the partner to use less power when threatened ($F = 1.92$, $p = 0.167$). The difference of the status coefficients between models by threat is statistically significant in the direction predicted (chi square = 5.09, $p = 0.024$). Only the status comparison for the non-threat conditions is statistically significant, and this is in the opposite direction expected (see initial assumption results above). Including control variables, the overall comparison of means across the conditions approaches statistical significance ($F = 2.23$, $p = 0.086$).

For the post-group task evaluation of to what extent the participant expects the partner to use power, means again do not differ statistically across the conditions ($F = 0.15$, $p = 0.927$), and none of the threat comparisons are statistically significant. The low-status threat comparison is in the opposite direction predicted ($F = 0.00$, $p = 0.985$). The high-status threat comparison is in the direction predicted ($F = 0.46$ $p = 0.499$). The difference in coefficients between the status models by threat is not statistically significant, though in the opposite direction expected (chi square = 0.22, $p = 0.640$).

Including control variables, the low-status threat comparison remains not statistically significant, though changes to the direction predicted ($F = 0.00$, $p = 0.979$).

For the change in this evaluation from before to after the group task, mean changes again do not statistically differ across the conditions ($F = 1.09$, $p = 0.355$). Threat comparisons for both the low- and high-status are in the direction expected. Thee low-status comparison approaches statistical significance ($F = 2.45$, $p = 0.119$), and the high-status comparison is not statistically significant ($F = 0.36$, $p = 0.552$). The difference in coefficients between the status models by threat approaches statistical significance in the direction expected (chi square = 2.37, $p = 0.124$). Only the non-threat condition status comparison approaches statistical significance (see initial assumption results above). Including control variables, the difference in coefficients between the status models by threat is statistically significant in the direction expected (chi square = 4.62, $p = 0.032$).

These results somewhat support Prediction 5 for the pre-task expectations of the partner using power.

Partner using power in ways that benefit self personally: expectation and perception: As explained above, using power to benefit oneself is expected to be a less legitimate use of power than using it to benefit the group. For the rating of this expectation before the group task (reverse-coded), means differ statistically across the conditions ($F = 3.56$, $p = 0.015$). Both the low-status and high-status participant threat comparisons are in the direction predicted. The high-status comparison is statistically significant ($F = 4.62$, $p = 0.033$), while the low-status comparison is not ($F = 0.03$, $p = 0.869$). The difference of the status coefficients between models by threat is statistically

significant in the direction predicted (chi square = 2.72, $p = 0.099$). However, only the status comparison for the non-threat conditions is statistically significant, and this was in the opposite direction expected (see initial assumption results above).

For the rating of this perception after the group task (reverse-coded), means do not differ statistically across the conditions ($F = 1.44$, $p = 0.233$). The threat comparison for the low-status conditions approaches statistical significance in the direction predicted ($F = 1.87$, $p = 0.173$). The threat comparison for the high-status conditions is not statistically significant, though in the opposite direction predicted ($F = 1.80$, $p = 0.181$). The difference in coefficients between the status models by threat is not statistically significant, though in the direction predicted (chi square = 0.00, $p = 0.982$). Of potential interest, the difference in the combined threat condition means approaches statistical significance, such that threatened participants have this perception more so ($F = -1.928$, $p = 0.055$, two-tailed).

For the change in this evaluation from before to after the group task, mean changes again do not statistically differ across the conditions ($F = 1.76$, $p = 0.155$). Both the low-status and high-status participant threat comparisons are not statistically significant, though in the direction predicted ($F = 1.66$, $p = 0.200$; $F = 0.86$, $p = 0.355$). The difference in coefficients between the status models by threat approaches statistical significance in the direction expected (chi square = 2.49, $p = 0.115$).

These results somewhat support Prediction 5.

Taken together, the above results largely support Prediction 5.

Further Analyses

I assess two further categories of analyses. First, I look at general ingroup prosociality and cohesion outcomes as ingroup prosocial orientations. Next, following initial Study 2 analyses (see Chapter 6 discussion), I assess how participants express intent to use power, and how this relates to my theoretical framing of threats to groups, ingroup prosociality, and group processes. As in the main analyses above, these conclusions do not change when including control variables unless otherwise specified.

Table 14: Study 3 General Ingroup Prosociality, Cohesion, and Use of Power Outcomes

Study 3 General Ingroup Prosociality and Cohesion Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Motivated to benefit self during network task (R)	2.902	1.360 51	3.160	1.633 50	**2.500***	1.216 50	**2.980***	1.476 51
Motivated to benefit group during network task - pre-	**5.294†**	1.747 51	**5.745†**	1.181 51	**5.353†**	1.560 51	**5.765†**	1.176 51
Feel like part of network group - pre-	4.620	1.748 50	4.941	1.302 51	4.863	1.625 51	4.980	1.476 51
Network group important - pre-	**4.745***	1.853 51	**5.275***	1.282 51	5.255	1.585 51	5.333	1.306 51
If in Position A, extent would use power - pre-	5.137	1.357 51	5.353	1.440 51	5.137	1.600 51	4.882	1.633 51
If in Position A, extent would use power in ways that benefit group - pre-	**5.667***	1.693 51	**6.255***	1.036 51	6.039	1.311 51	5.902	1.345 51
If in Position A,	**4.725***	1.721	**3.843***	1.891	4.686	1.965	4.275	1.756

Study 3 General Ingroup Prosociality and Cohesion Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
extent would use power in ways that benefit self personally - pre-		51		51		51		51
Difference between hypothetical offers with and without power reversal - pre-	9.451	2.352 51	9.255	2.390 51	9.431	1.993 51	9.922	2.235 51
Hypothetical offer to Partner A, with power roles reversed - pre-	3.059	4.249 51	3.510	4.743 51	3.980	3.450 51	3.824	4.136 51
Motivated to benefit group during network task - post-	2.647	1.146 51	3.059	1.816 51	2.700	1.741 50	3.078	1.753 51
Change in motivated to benefit group during network task - pre- to post-	-0.255	1.111 51	-0.080	1.988 50	0.200	1.309 50	0.098	1.300 51
Motivated to benefit group during network task - post-	5.196	1.876 51	5.529	1.270 51	5.300	1.810 50	5.667	1.558 51
Change in motivated to benefit group during network task - pre- to post-	-0.098	1.221 51	-0.216	1.154 51	-0.020	1.059 50	-0.098	1.171 51
Feel like part of network group - post-	4.373	1.661 51	4.725	1.588 51	4.314	1.772 51	4.392	1.650 51
Network group important - post-	**4.608†**	1.866 51	**5.157†**	1.488 51	4.765	1.784 51	4.863	1.662 51
Change in feel like part of network group - pre- to post-	-0.280	1.230 50	-0.216	1.286 51	-0.549	1.616 51	-0.588	1.512 51
Change in network group important - pre- to post-	-0.137	0.960 51	-0.118	1.194 51	-0.490	0.925 51	-0.471	1.120 51
If in Position A, extent would use power - post-	5.294	1.361 51	5.471	1.501 51	5.294	1.460 51	5.059	1.515 51
Change in if in Position A, extent would use power - pre- to post-	0.157	1.084 51	0.118	1.143 51	0.157	0.903 51	0.176	1.381 51
If in Position A, extent would use power in ways	5.824	1.367 51	6.216	1.119 51	5.961	1.356 51	5.804	1.456 51

Study 3 General Ingroup Prosociality and Cohesion Outcomes	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
that benefit group - post-								
Change in if in Position A, extent would use power in ways that benefit group - pre- to post-	0.157	1.189 51	-0.039	0.599 51	-0.078	1.074 51	-0.098	1.269 51
If in Position A, extent would use power in ways that benefit self personally - post-	**4.980***	1.543 51	**4.333***	1.883 51	4.725	1.960 51	4.333	1.956 51
Change in if in Position A, extent would use power in ways that benefit self personally - pre- to post-	0.255	1.129 51	0.490	1.138 51	0.039	1.356 51	0.059	1.302 51
Hypothetical offer to Partner A, with power roles reversed - post-	9.647	1.764 51	9.373	2.163 51	**10.078***	1.671 51	**9.225***	2.413 51
Change in hypothetical offer to Partner A, with power roles reversed - pre- to post-	0.196	1.625 51	0.118	2.215 51	**0.647****	2.528 51	**-0.696****	2.912 51
Difference between hypothetical offers with and without power reversal - post-	2.137	2.522 51	2.412	3.087 51	2.000	2.720 51	2.422	3.091 51
Change in difference between hypothetical offers with and without power reversal - pre- to post-	-0.922	3.364 51	-1.098	4.977 51	-1.980	3.787 51	-1.402	3.624 51
Important to earn as many points as possible	6.020	1.225 51	5.980	1.349 51	6.039	1.095 51	5.922	1.339 51
Tried best at the task	6.627	0.774 51	6.745	0.913 51	6.784	0.642 51	6.725	0.532 51
Want partner again	0.627	 51	0.627	 51	0.569	 51	0.400	 50

Study 3 General Ingroup Prosociality and Cohesion Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Motivated to benefit self during network task (R)	3.030	1.500 101	2.743	1.369 101	**2.703***	1.300 101	**3.069***	1.551 101
Motivated to benefit group during network task - pre-	5.520	1.501 102	5.559	1.390 102	**5.324***	1.648 102	**5.755***	1.173 102
Feel like part of network group - pre-	4.782	1.540 101	4.922	1.546 102	4.743	1.683 101	4.961	1.385 102
Network group important - pre-	5.010	1.608 102	5.294	1.446 102	**5.000†**	1.735 102	**5.304†**	1.288 102
If in Position A, extent would use power - pre-	5.245	1.396 102	5.010	1.614 102	5.137	1.476 102	5.118	1.550 102
If in Position A, extent would use power in ways that benefit group - pre-	5.961	1.428 102	5.971	1.323 102	5.853	1.518 102	6.078	1.208 102
If in Position A, extent would use power in ways that benefit self personally - pre-	4.284	1.853 102	4.480	1.865 102	**4.706****	1.838 102	**4.059****	1.828 102
Difference between hypothetical offers with and without power reversal - pre-	9.353	2.362 102	9.676	2.121 102	9.441	2.169 102	9.588	2.327 102
Hypothetical offer to Partner A, with power roles reversed - pre-	3.284	4.486 102	3.902	3.790 102	3.520	3.879 102	3.667	4.431 102
Motivated to benefit group during network task - post-	2.853	1.525 102	2.891	1.749 101	**2.673***	1.464 101	**3.069***	1.776 102
Change in motivated to benefit group during network task - pre- to post-	-0.168	1.600 101	0.149	1.299 101	-0.030	1.228 101	0.010	1.670 101
Motivated to benefit group during network task - post-	5.363	1.603 102	5.485	1.689 101	5.248	1.835 101	5.598	1.416 102
Change in motivated to benefit group during network task - pre- to post-	-0.157	1.184 102	-0.059	1.112 101	-0.059	1.139 101	-0.157	1.158 102
Feel like part of	4.549	1.627	4.353	1.704	4.343	1.709	4.559	1.620

Study 3 General Ingroup Prosociality and Cohesion Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
network group - post-		102		102		102		102
Network group important - post-	4.882	1.702 102	4.814	1.716 102	4.686	1.818 102	5.010	1.576 102
Change in feel like part of network group - pre- to post-	-0.248	1.252 101	-0.569	1.558 102	-0.416	1.437 101	-0.402	1.409 102
Change in network group important - pre- to post-	-0.127	1.078 102	-0.480	1.022 102	-0.314	0.954 102	-0.294	1.165 102
If in Position A, extent would use power - post-	5.382	1.428 102	5.176	1.485 102	5.294	1.404 102	5.265	1.515 102
Change in if in Position A, extent would use power - pre- to post-	0.137	1.108 102	0.167	1.161 102	0.157	0.992 102	0.147	1.262 102
If in Position A, extent would use power in ways that benefit group - post-	6.020	1.258 102	5.882	1.402 102	5.892	1.356 102	6.010	1.309 102
Change in if in Position A, extent would use power in ways that benefit group - pre- to post-	0.059	0.942 102	-0.088	1.170 102	0.039	1.134 102	-0.069	0.988 102
If in Position A, extent would use power in ways that benefit self personally - post-	4.657	1.743 102	4.529	1.959 102	**4.853***	1.760 102	**4.333***	1.911 102
Change in if in Position A, extent would use power in ways that benefit self personally - pre- to post-	**0.373†**	1.134 102	**0.049†**	1.323 102	0.147	1.246 102	0.275	1.236 102
Hypothetical offer to Partner A, with power roles reversed - post-	9.510	1.969 102	9.652	2.109 102	**9.863***	1.724 102	**9.299***	2.281 102
Change in hypothetical offer to Partner A, with power roles reversed - pre- to post-	0.157	1.933 102	-0.025	2.796 102	**0.422***	2.127 102	**-0.289***	2.607 102
Difference between hypothetical offers with and without power reversal - post-	2.275	2.808 102	2.211	2.905 102	2.069	2.611 102	2.417	3.073 102
Change in difference	-1.010	4.227 102	-1.691	3.699 102	-1.451	3.603 102	-1.250	4.334 102

Study 3 General Ingroup Prosociality and Cohesion Outcomes	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
between hypothetical offers with and without power reversal - pre- to post-								
Important to earn as many points as possible	6.000	1.282 102	5.980	1.219 102	6.029	1.156 102	5.951	1.338 102
Tried best at the task	6.686	0.844 102	6.755	0.588 102	6.706	0.712 102	6.735	0.744 102
Want partner again	**0.627***	102	**0.485***	101	0.598	102	0.515	101

Evaluating General Ingroup Prosociality and Cohesion Outcomes

These analyses assess the extent to which the Study 3 results align with the overall prediction of this dissertation research, that threat increases ingroup prosociality and feelings of cohesion toward the group. This general prediction is presented in Chapter 1 before the predictions specific to each study.

General Ingroup Prosociality

Participant motivated to benefit self during group task (reverse-coded): For the participant's pre-task rating of how motivated they are to benefit themselves personally during the group task, means do not differ statistically across the conditions ($F = 1.90$, $p = 0.130$). Comparing the non-threat to the threat condition within each status condition, comparisons for both low- and high-status participants (with high- and low-status partners, respectively) are in the direction predicted. The comparison for high-

status participants is statistically significant ($F = 2.85$, $p = 0.093$), while the low-status comparison is not ($F = 0.82$, $p = 0.366$). The overall threat condition comparison (including both low- and high-status for each) is also statistically significant in the direction predicted ($t = -1.819$, $p = 0.035$).

For the participant's post-task rating of how motivated they were to benefit themselves personally during the group task, means again do not differ statistically across the conditions ($F = 1.90$, $p = 0.130$). Both the low-status and high-status threat comparisons are not statistically significant, though they are in the direction predicted ($F = 1.62$, $p = 0.205$; $F = 1.35$, $p = 0.247$). The overall threat condition comparison is statistically significant in the direction predicted ($t = -1.730$, $p = 0.043$).

For the pre-to-post-group task change in participant's rating of motivation to benefit themselves personally during the group task, the mean changes also do not differ statistically across the conditions ($F = 0.95$, $p = 0.417$), and none of the threat comparisons are statistically significant. The threat comparison for the low-status conditions is in the direction expected ($F = 0.36$, $p = 0.549$), and the threat comparison for the high-status conditions is in the direction expected ($F = 0.12$, $p = 0.727$). The overall threat condition comparison is not statistically significant, though in the direction expected ($t = -0.192$, $p = 0.424$).

These results somewhat support the overall prediction.

Participant motivated to benefit group during group task: For the participant's pre-task rating of how motivated they are to benefit their group during the group task, means do not differ statistically across the conditions ($F = 1.55$, $p = 0.204$). Both the low- and high-status threat comparisons approach statistical significance in the

direction predicted ($F = 2.51$, $p = 0.115$; means $F = 2.09$, $p = 0.150$). The overall threat condition comparison is statistically significant in the direction predicted ($t = -2.154$, $p = 0.016$).

For the participant's post-task rating of how motivated they were to benefit their group during the group task, means again do not differ statistically across the conditions ($F = 0.86$, $p = 0.462$). Both the low- and high-status threat comparisons are in the direction predicted but not statistically significant ($F = 1.05$, $p = 0.308$; $F = 1.25$, $p = 0.264$). The overall threat condition comparison approaches statistical significance in the direction predicted ($t = -1.524$, $p = 0.065$).

For the pre-to-post-group task change in participant's rating of motivation to benefit their group during the group task, mean changes do not differ statistically across the conditions ($F = 0.25$, $p = 0.863$). All of the threat comparisons are not statististically significant, though in the opposite direction predicted (low-status mean changes $F = 0.27$, $p = 0.607$); high-status mean changes $F = 0.12$, $p = 0.734$; overall threat condition mean changes $t = 0.605$, $p = 0.546$, two-tailed).

These results somewhat support the overall prediction.

Cohesion

Participant feels like part of the network group: For the pre-group task rating of how much the participant feels like part of the network group, means do not differ statistically across the conditions ($F = 0.55$, $p = 0.649$). The threat comparisons are not statistically significant, though all are in the direction predicted (low-status means $F =$

1.09, $p = 0.298$; high-status means $F = 0.15$, $p = 0.701$; combined threat condition means $t = -1.009$, $p = 0.157$).

For the post-group task rating of how much the participant feels like part of the network group, means again do not differ statistically across the conditions ($F = 0.63$, $p = 0.594$). The threat comparisons are again not statistically significant, though in the direction predicted (low-status means $F = 1.14$, $p = 0.287$; high-status means; $F = 0.06$, $p = 0.813$; combined threat condition means $t = -0.925$, $p = 0.178$).

For the pre-to-post-group task change in rating of how much the participant feels like part of the network group, mean changes do not differ statistically across the conditions ($F = 0.89$, $p = 0.448$). The low-status and combined threat comparisons are not statistically significant, though in the direction expected ($F = 0.05$, $p = 0.820$; $t = -0.070$, $p = 0.472$). The high-status threat comparison is also not statistically significant, though in the opposite direction expected ($F = 0.02$, $p = 0.889$).

These results do not provide statistical support for the overall prediction, though most are in the direction predicted.

Participant evaluates network group as personally important: For the pre-group task rating of how personally important the network group is, means do not differ statistically across the conditions ($F = 1.64$, $p = 0.182$). Both low- and high-status threat comparisons are in the direction predicted. The low-status threat comparison is statistically significant ($F = 3.07$, $p = 0.081$), while the high-status threat comparison is not ($F = 0.07$, $p = 0.795$). The combined threat condition comparison approaches statistical significance in the direction predicted ($t = -1.421$, $p = 0.079$).

For the post-group task rating of how personally important the network group is, means again do not differ statistically across the conditions ($F = 0.94$, $p = 0.424$). The low-status and combined threat comparisons approach statistical significance in the direction predicted ($F = 2.64$, $p = 0.106$; $t = -1.358$, $p = 0.088$), while the high-status comparison is not statistically significant, though in the same direction ($F = 0.08$, $p = 0.772$).

For the pre-to-post-group task change in rating of how personally important the network group is, mean changes do not differ statistically across the conditions ($F = 1.91$, $p = 0.130$). The low-status, high-status, and combined threat comparisons are not statistically significant, though in the direction expected ($F = 0.01$, $p = 0.925$; $F = 0.01$, $p = 0.925$, $t = -0.132$, $p = 0.448$). Of potential interest, the combined status condition comparison (including both non-threat and threat conditions) is statistically significant such that the decrease is greater in the high-status conditions ($t = 2.400$, $p = 0.009$). The non-threat and threat status comparisons both approach statistical significance in this direction (both $F = 2.85$, $p = 0.093$).

These results mostly support the overall prediction.

As in Study 2, I consider wanting to be matched with the same partner again as both a partner status evaluation and a group cohesion outcome. Here I consider it as a cohesion outcome. Because I consider both treatments, I use statistical test criteria consistent with two-tailed tests. For the proportion of participants indicating they would want to be matched with the partner again, results are consistent with better reception of a high-status partner than a low-status partner in the position of power, rather than feeling more cohesive with any partner following threat. The differences in proportions across

the conditions approach statistical significance (chi square = 7.073, $p = 0.070$). The low-status proportions are the same ($z = 0.000$, $p = 1.00$, two-tailed), and the high-status threat comparison approaches statistical significance such that threat decreases this outcome ($z = 1.695$, $p = 0.090$, two-tailed). As noted above, the status comparison is statistically significant in this direction for the threat conditions but not the non-threat conditions. The comparison between the combined threat condition groups is not statistically significant, but in the direction such that threat decreases this outcome ($z = 1.193$, $p = 0.233$, two-tailed). When including control variables, the high-status threat comparison no longer approaches statistical significance ($z = 0.98$, $p = 0.326$, two-tailed). Treating the outcome as a mean, when including control variables, the differences in proportions across conditions no longer approach statistical significance ($F = 1.35$, 0.259).

How the Participant Would Exercise Power

A further series of outcomes are designed to assess the extent to which the participant would exercise power if given the opportunity. These questions were added after evaluating initial Study 2 results, in which threat sometimes appeared to increase evaluations of low-status partners. I expect that participants will report extent of exercising power consistent with their status in the group, that these patterns will become more pronounced under threat, ingroup prosocial use of power will increase under threat, and selfish use of power will decrease under threat. However, as addressed earlier in this chapter, specific uses of power could be confounded with overall use of power. The first three questions ask the participant, as if they were in the powerful position (that Participant A actually occupies), the extent to which they would use the power, and how

selfish and group-oriented they would be. The fourth question asks for a hypothetical point offer, as in the question assessed above, but this one reflects the hypothetical scenario where the participant is in a powerful position. Finally, I assess how the powerful offers differ from the low-power offers addressed above, and how these outcomes compare before and after the group task.

Participant use of power if in powerful position: For the pre-group task hypothetical rating of how much the participant would use their power, means do not differ statistically across the conditions ($F = 0.83$, $p = 0.481$). I first address the expectation that high-status participants use more power. The threat condition and combined status comparisons are not statistically significant, though in the opposite direction expected ($F = 2.47$, $p = 0.118$; $t = 1.114$, $p = 0.267$, two-tailed), and the non-threat status comparison means are the same ($F = 0.000$, $p = 1.000$). Threat does not have the predicted effects on this rating — the low-status and high-status threat comparisons are not statistically significant, though in the opposite direction expected ($F = 0.52$, $p = 0.472$; $F = 0.73$, $p = 0.396$). The combined threat condition comparison is also not statistically significant, though in the direction such that threat decreases this rating ($t = 0.093$, $p = 0.926$, two-tailed). The difference in coefficients between the status models by threat is not statistically significant, though in the opposite direction expected (chi square = 1.25, $p = 0.263$). Including control variables, the combined threat comparison remains not statistically significant, though changes direction ($t = 0.27$, 0.789, two-tailed), and the threat condition status comparison approaches statistical significance in the opposite direction expected ($F = 2.80$, $p = 0.096$).

For the post-group task hypothetical rating of how much the participant would use their power, means again do not differ statistically across the conditions ($F = 0.68$, $p = 0.564$). The status and threat comparisons are in the same direction as in the pre-group task ratings, and remain not statistically significant. The non-threat status comparison means are the same ($F = 0.000$, $p = 1.000$), and the threat status comparison is in the opposite direction expected ($F = 2.03$, $p = 0.156$). The combined threat condition status comparison is in the opposite direction expected ($t = 1.009$, $p = 0.314$, two-tailed). Threat comparisons for the low-status ($F = 0.37$, $p = 0.543$) and high-status conditions ($F = 0.66$, $p = 0.417$) are opposite of the direction expected. The combined threat condition status comparison is not statistically significant, but again in the direction such that this rating decreases with threat ($t = 0.144$, $p = 0.886$, two-tailed).

For the pre-to-post-group task change in hypothetical rating of how much the participant would use their power, mean changes do not differ statistically across the conditions ($F = 0.02$, $p = 0.995$). The threat and combined status comparisons are not statistically significant, though in the direction expected (non-threat status comparison $F = 0.07$, $p = 0.795$; combined threat condition status comparison $t = -0.185$, $p = 0.427$). The non-threat status comparison mean changes are the same ($F = 0.000$, $p = 1.000$. The threat comparison results are not statistically significant, though in the direction expected for both the low-status and high-status comparisons ($F = 0.03$, $p = 0.862$; $F = 0.01$, $p = 0.931$). The combined threat condition comparison is also not statistically significant, but in the direction such that the increase is less in the threat conditions ($t = 0.062$, $p = 0.951$, two-tailed). Including control variables, the combined threat condition comparison changes direction but is not statistically significant ($t = 0.22$, $p = 0.825$, two-tailed).

These results do not statistically support expectations about status-consistent use of power or the overall prediction, though many results are in the direction expected.

Participant use of power in ways that benefit group if in powerful position: For the pre-group task hypothetical rating of how much the participant would use their power in this way, means do not differ statistically across the conditions ($F = 1.66$, $p = 0.177$). The non-threat condition and combined status comparisons are in the direction expected. The non-threat comparison approaches statistical significance ($F = 1.90$, $p = 0.170$) while the combined comparison does not ($t = -0.051$, $p = 0.480$). The threat condition status comparison is not statistically significant, though in the opposite direction expected and ($F = 1.70$, $p = 0.194$). Comparing by threat, the low-status threat comparison is statistically significant ($F = 4.73$, $p = 0.031$), such that threatened participants say they would exercise their power more ingroup prosocially. Though this is inconsistent with the prediction that low-status participants will use less power, it is consistent with more ingroup prosociality. The combined threat condition comparison is not statistically significant, though in the direction suggesting more ingroup prosocial use of power under threat ($t = -1.174$, $p = 0.242$, two-tailed). The high-status threat comparison is not statistically significant, though in the opposite direction expected ($F = 0.26$, $p = 0.613$). Of potential interest, the difference of the status coefficients between models by threat approaches statistical significance in the opposite direction expected, such that this rating increases with participant status for non-threatened participants, and decreases with participant status for threatened participants (chi square = 3.65, $p = 0.056$). Only the non-threatened status difference approaches statistical significance in the direction expected. Including control variables, the difference in means across the

conditions approaches statistical significance ($F = 2.56$, $p = 0.056$), the threat condition status comparison is statistically significant in the direction expected ($F = 3.22$, $p = 0.075$), and the difference in status coefficients by threat is statistically significant (chi square = 4.62, $p = 0.032$).

For the post-group task hypothetical rating of how much the participant would use their power prosocially, means do not differ statistically across the conditions ($F = 1.04$, $p = 0.377$). The non-threat condition status comparison is not statistically significant, though in the direction expected but ($F = 0.27$, $p = 0.603$), and the threat condition and combined status comparisons are also not statistically significant, though in the opposite direction expected ($F = 2.44$, $p = 0.120$; $t = 0.736$, $p = 0.463$, two-tailed). The low-status threat comparison is no longer statistically significant, though in the same direction as the pre-task rating ($F = 2.22$, $p = 0.138$). The high-status threat comparison is in the opposite direction expected and ($F = 0.35$, $p = 0.552$). The combined threat condition comparison is not statistically significant, though in the direction expected ($t = -0.630$, $p = 0.265$). Including control variables, the low-status threat comparison is statistically significant in the direction expected ($F = 2.78$, $p = 0.097$).

For the pre-to-post-group task change in hypothetical rating of how much the participant would use their power prosocially, mean changes did not differ statistically across the conditions ($F = 2.093$, $p = 0.606$). The threat condition status comparison is not statistically significant, though in the direction expected ($F = 0.08$, $p = 0.781$). The non-threat condition and combined status comparisons are not statistically significant, though in the opposite direction expected ($F = 1.24$, $p = 0.266$; $t = 0.989$, $p = 0.324$, two-tailed). All threat comparisons are not statistically significant, though in the opposite

direction expected (low-status mean changes $F = 0.86$, $p = 0.354$; high-status mean changes $F = 0.01$, $p = 0.926$; combined threat condition mean changes $t = 0.724$, $p = 0.470$, two-tailed). Including control variables, the high-status threat comparison is not statistically significant, though changes to the direction expected and ($F = 0.00$, $p = 0.964$, two-tailed).

These results somewhat support the overall prediction.

Participant use of power in ways that benefit self if in powerful position: For the pre-group task hypothetical rating of how much the participant would use their power in this way, the difference in means across the conditions approaches statistical significance ($F = 2.59$, $p = 0.054$). The threat condition and combined status comparisons are not statistically significant, though in the direction expected ($F = 1.41$, $p = 0.237$; $t = -0.753$, $p = 0.226$), and the non-threat condition status comparison is also not statistically significant, though in the opposite direction expected ($F = 0.01$, $p = 0.914$). All threat comparisons are in the direction expected , such that threat decreases selfish use of power. The low-status and combined threat condition comparisons are statistically significant. ($F = 5.89$, $p = 0.016$; $t = 2.521$, $p = 0.006$), while the high-status comparison is not ($F = 1.28$, $p = 0.259$). Including control variables, the difference in means across the conditions no longer approaches statistical significance ($F = 1.78$, $p = 0.152$).

For the post-group task hypothetical rating of how much the participant would use their power selfishly, the difference in means across the conditions is not statistically significant ($F = 1.51$, $p = 0.212$), and none of the status comparisons are statistically significant. The non-threat and combined status comparisons are in the opposite direction expected ($F = 0.49$, $p = 0.486$; $t = 0.491$, $p = 0.312$), and the threat condition means are

the same ($F = 0.00$, $p = 1.000$). As in the pre-group task results, all threat comparisons are in the direction expected, such that threat decreases selfish use of power. The low-status and combined threat condition comparisons are statistically significant ($F = 3.14$, $p = 0.078$; $t = 2.020$, $p = 0.045$), while the high-status comparison is not ($F = 1.15$, $p = 0.284$).

For the pre-to-post-group task change in hypothetical rating of how much the participant would use their power selfishly, the difference in mean changes across the conditions is not statistically significant ($F = 1.48$, $p = 0.222$). All status comparisons are in the opposite direction expected. The threat condition and combined comparisons approach statistical significance ($F = 3.11$, $p = 0.079$; $t = 1.875$, $p = 0.062$, two-tailed), while the non-threat comparison does not ($F = 0.078$, $p = 0.379$). Threat comparisons are not statistically significant, though they are all in the opposite direction expected (low-status mean changes $F = 0.93$, $p = 0.337$; high-status means changes $F = 0.01$, $p = 0.936$; combined mean changes $t = -0.733$, $p = 0.464$, two-tailed). Including control variables, the high-status threat comparison is not statistically significant, though in the direction expected ($F = 0.19$, $p = 0.667$).

These results mostly support the overall prediction.

Hypothetical offer to partner if in powerful position: For the pre-group task hypothetical point offer to the partner if the participant were in a powerful position, means do not differ statistically across the conditions ($F = 1.88$, $p = 0.135$). I first address the expectation that high-status participants assert more power in their point offers by offering fewer points. The status comparison is not statistically significant for the non-threat conditions, though in the direction expected ($F = 0.00$, $p = 0.965$). The status

comparison for the threat conditions and combined status conditions are also not statistically significant, though in the opposite direction expected ($F = 1.21$, $p = 0.272$; $t = -1.029$, $p = 0.305$, two-tailed). Threat comparisons for the low-status means and the high-status means are not statistically significant, though in the opposite direction expected ($F = 0.19$, $p = 0.660$; $F = 1.21$, $p = 0.272$).

For the post-group task hypothetical point offer to the partner if the participant were in a powerful position, means again do not differ statistically across the conditions ($F = 1.75$, $p = 0.159$). The status comparison for the non-threat conditions and combined status conditions are not statistically significant, though in the opposite direction expected ($F = 1.16$, $p = 0.283$; $t = -0.498$, $p = 0.619$, two-tailed). The status comparison for the threatened conditions is also not statistically significant, though in the direction expected ($F = 0.13$, $p = 0.714$). The threat comparison for the low-status participants is not statistically significant, though in the opposite direction predicted ($F = 0.47$, $p = 0.495$). The threat comparison for the high-status participants is statistically significant in the direction expected ($F = 4.52$, $p = 0.035$). Of potential interest, the combined threat condition comparison is statistically significant, such that participants in the threatened conditions offer fewer points ($t = 1.991$, $p = 0.048$, two-tailed).

For the pre-to-post-group task change in hypothetical point offer to the partner if the participant were in a powerful position, the difference in mean changes across the conditions is statistically significant ($F = 2.84$, $p = 0.039$). The non-threat status comparison is not statistically significant, though in the opposite direction expected ($F = 0.93$, $p = 0.337$). The threat condition and combined status comparisons are both in the direction expected. The threat condition status comparison is statistically significant ($F =$

3.01, $p = 0.084$), while the combined status comparison is not ($t = 0.539$, $p = 0.295$). The threat condition comparison for the low-status participants is not statistically significant, though in the opposite direction predicted ($F = 0.03$, $p = 0.867$). The high-status threat comparison is statistically significant in the direction predicted ($F = 8.21$, $p = 0.005$). Of potential interest, the combined threat condition comparison is statistically significant, such that there is an increase in points offered for non-threatened participants and a decrease in points offered for threatened participants ($t = 2.134$, $p = 0.017$). This result appears to be driven by the high-status threat comparison. Also of potential interest, the difference in status coefficients across the threat models approaches statistical significance, such that the non-threatened participants experience an increase in points offered, and the threatened participants experience a decrease in points offered (chi square = 3.69, $p = 0.055$). As noted above, the status effect for this change is only statistically significant for the threat conditions (a decrease).

These results somewhat support the overall prediction.

Difference between the hypothetical (low-power) and hypothetical high-power point offers to the partner: These outcomes measure the discrepancy between hypothetical point offers to the partner from a low-power versus a high-power position (with the partner in the opposite power position). For the difference in these offers before the group task, mean differences do not differ statistically across the conditions ($F = 0.48$, $p = 0.694$). All status comparisons are not statistically significant, though they are in the direction expected (specifically for both the non-threatened and threatened participants and for the combined threat conditions, $F = 1.25$, $p = 0.266$; $F = 0.14$, $p = 0.704$; $t = -1.062$, $p = 0.145$). Threat comparisons for both the low-status and high-status participants

are not statistically significant, though in the opposite direction predicted ($F = 0.30$, $p = 0.586$; $F = 0.04$, $p = 0.850$).

For the difference in these offers after the group task, mean differences also do not differ statistically across the conditions ($F = 0.27$, $p = 0.847$). The status comparison within the non-threatened conditions and the combined status condition comparison are not statistically significant, though the results change to the opposite direction expected ($F = 0.06$, $p = 0.809$; $t = 0.159$, $p = 0.874$, two-tailed). The status comparison within the threatened conditions is also not statistically significant, though in the direction expected ($F = 0.54$, $p = 0.465$). The threat comparison within the low-status conditions is not statistically significant, though in the opposite direction expected ($F = 0.23$, $p = 0.629$). The threat comparison within the high-status conditions is also not statistically significant, though in the direction expected ($F = 0.55$, $p = 0.458$).

For the pre-to-post-group task change in the difference of these offers, mean changes do not differ statistically across the conditions ($F = 0.69$, $p = 0.558$). For the status comparisons within the non-threatened and threatened conditions and the combined status condition comparison, the status difference is in the direction expected, such that the negative difference is greater for the high-status participants. This approaches statistical significance for the non-threatened participants ($F = 1.80$, $p = 0.181$), and does not for the threatened and combined comparisons ($F = 0.15$, $p = 0.701$; $t = 1.225$, $p = 0.111$). Both the low-status and high-status threat comparisons are not statistically significant, though in the opposite direction expected ($F = 0.05$, $p = 0.823$; $F = 0.54$, $p = 0.465$).

These results only somewhat statistically support the overall prediction. Notably, the pooled threat comparison for being motivated to benefit the group before the task is statistically significant, and the comparisons approach statistical significance within the low-status and high-status conditions.

Study 3 Manipulation Checks

Several measures were designed to assess the effectiveness of the experimental manipulations. As in the results presented above, condition 1 represents low-status without threat, condition 2 is low-status with threat, condition 3 is high-status without threat, and condition 4 is high-status with threat. Results from models including control variables are presented when statistical conclusions differ from the main results. See Appendix for more information about these measures.

Table 15: Study 3 Manipulation and Suspicion Checks

Study 3 Manipulation and Suspicion Checks	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Rating of self power position	1.882	0.973 51	1.784	1.270 51	1.608	0.940 51	1.863	1.059 51
Rating of Partner A power position	6.627	0.528 51	6.922	0.272 51	6.765	0.473 51	6.686	0.648 51
Correctly identified network positions as assigned randomly	0.451	51	0.353	51	0.667	51	0.725	51
Correctly identified network positions as assigned randomly or answered not sure	0.608	51	0.549	51	0.863	51	0.882	51
Self-reported self CS score	7.137	0.491 51	7.059	0.420 51	17.902	0.300 51	17.686	1.393 51
Self CS score compared to national	2.294	0.965 51	2.216	1.006 51	5.471	0.924 51	5.824	0.932 51

Study 3 Manipulation and Suspicion Checks	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
average								
Self CS score subjective	3.118	1.545 51	2.569	1.389 51	5.765	0.992 51	6.020	0.990 51
Partner CS score reported	17.549	1.137 51	17.922	0.440 51	6.647	1.671 51	7.000	1.673 51
Partner CS score compared to national average	6.059	0.858 51	6.216	0.702 51	2.255	0.771 51	2.235	0.862 51
Partner CS score subjective	5.922	1.181 51	6.176	1.053 51	2.294	0.923 51	2.216	1.006 51
Feel personally threatened (scale)	36.102	18.346 49	37.098	19.273 51	35.240	19.105 50	42.200	18.844 50
Feel group threatened (scale)	22.959	12.819 49	26.059	14.502 51	24.571	14.364 49	30.640	13.972 50
Difficult to earn points	4.686	1.631 51	4.549	1.890 51	4.392	1.812 51	5.216	1.189 51
Indicated threat-condition situation for not earning any points in a round	0.294	51	0.824	51	0.294	51	0.843	51
Answered Q about not earning any points in a round correctly for condition	0.667	51	0.824	51	0.647	51	0.843	51
Answered Q about not earning any points in a round correctly for condition or not sure	0.706	51	0.824	51	0.706	51	0.843	51
Answered Q about not earning any points in a round correctly for condition (for entire collected sample)	0.661	62	0.807	57	0.576	59	0.842	57
Answered Q about not earning any points in a round correctly for condition or not sure (for entire collected sample)	0.710	62	0.825	57	0.661	59	0.842	57
Indicated threat-condition situation for risk of losing all points in a round	0.392	51	0.627	51	0.294	51	0.686	51
Answered Q about risk of losing all points in a round correctly for condition	0.392	51	0.627	51	0.490	51	0.686	51
Answered Q about risk of losing all points in a round correctly for condition or not sure	0.608	51	0.745	51	0.706	51	0.765	51
Answered Q about risk of losing all points in a round correctly for condition (for entire collected sample)	0.371	62	0.667	57	0.424	59	0.684	57
Answered Q about risk of losing all points in a round correctly	0.613	62	0.772	57	0.661	59	0.754	57

Study 3 Manipulation and Suspicion Checks	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
for condition or not sure (for entire collected sample)								
Situation personally threatening (Q)	2.600	1.852 50	3.176	1.915 51	2.412	1.590 51	3.500	1.843 50
Situation threatening to group (Q)	2.980	1.881 51	3.922	1.831 51	2.980	1.892 51	4.216	1.973 51
Any type of suspicion - yes	0.373	51	0.373	51	0.549	51	0.353	51
Any type of suspicion - yes/not sure	0.529	51	0.569	51	0.706	51	0.510	51
Any type of suspicion affect behavior - yes	0.000	27	0.034	29	0.056	36	0.000	26
Any type of suspicion affect behavior - yes/not sure	0.000	27	0.034	29	0.111	36	0.115	26
Acted real despite any type of suspicion - yes	1.000	27	1.000	29	1.000	36	1.000	26
Suspicious about group members - yes	0.529	51	0.647	51	0.667	51	0.588	51
Suspicious about group members - yes/not sure	0.608	51	0.725	51	0.706	51	0.667	51
Suspicion about group members affect behavior - yes	0.968	31	1.000	37	1.000	36	0.971	34
Suspicion about group members affect behavior - yes/not sure	1.000	31	1.000	37	1.000	36	1.000	34
Acted real despite suspicion about group members - yes	0.000	31	0.027	37	0.000	36	0.029	34
Acted real despite suspicion about group members - yes/sure	0.000	31	0.027	37	0.056	36	0.059	34
Suspicious about group member info - yes	0.353	51	0.353	51	0.412	51	0.294	51
Suspicious about group member info - yes/not sure	0.412	51	0.490	51	0.569	51	0.490	51
Suspicion about group member info affect behavior - yes	0.000	21	0.000	25	0.034	29	0.040	25
Suspicion about group member info affect behavior - yes/not sure	0.048	21	0.080	25	0.138	29	0.160	25
Acted real despite suspicion about group member information - yes	0.952	21	1.000	25	1.000	29	0.960	25
Acted real despite suspicion about group member information - yes/not sure	1.000	21	1.000	25	1.000	29	1.000	25
Final suspicion question - any type of suspicion affected behavior during study - yes	0.000	51	0.000	51	0.000	51	0.000	50
Final suspicion	0.000		0.020		0.039		0.020	

Study 3 Manipulation and Suspicion Checks	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
question - any type of suspicion affected behavior during study - yes/not sure		51		51		51		50
Number of whether suspicious Qs indicated yes to	1.255	1.181 51	1.373	1.183 51	1.627	1.311 51	1.260	1.157 50
Number of whether suspicious Qs indicated yes or not sure to	1.549	1.238 51	1.804	1.200 51	2.020	1.273 51	1.680	1.347 50

Study 3 Manipulation and Suspicion Checks	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Rating of self power position	1.833	1.126 102	1.735	1.004 102	1.745	0.961 102	1.824	1.164 102
Rating of Partner A power position	6.775	0.443 102	6.725	0.566 102	6.696	0.503 102	6.804	0.508 102
Correctly identified network positions as assigned randomly	0.402	 102	0.696	 102	0.559	 102	0.539	 102
Correctly identified network positions as assigned randomly or answered not sure	0.578	 102	0.873	 102	0.735	 102	0.716	 102
Self-reported self CS score	7.098	0.456 102	17.794	1.008 102	12.520	5.424 102	12.373	5.437 102
Self CS score compared to national average	2.255	0.982 102	5.647	0.940 102	3.882	1.852 102	4.020	2.054 102
Self CS score subjective	2.843	1.488 102	5.892	0.994 102	4.441	1.854 102	4.294	2.109 102
Partner CS score reported	17.735	0.878 102	6.824	1.673 102	12.098	5.659 102	12.461	5.621 102
Partner CS score compared to national average	6.137	0.784 102	2.245	0.814 102	4.157	2.076 102	4.225	2.148 102
Partner CS score subjective	6.049	1.120 102	2.255	0.961 102	4.108	2.106 102	4.196	2.238 102
Feel personally threatened (scale)	36.610	18.736 100	38.720	19.200 100	35.667	18.643 99	39.624	19.139 101
Feel group threatened (scale)	24.540	13.723 100	27.636	14.421 99	23.765	13.568 98	28.327	14.356 101
Difficult to earn points	4.618	1.758 102	4.804	1.580 102	4.539	1.722 102	4.882	1.606 102
Indicated threat-condition situation for not earning any points in a round	0.559	 102	0.569	 102	0.294	 102	0.167	 0.833
Answered Q about not	0.745		0.745		0.657		0.833	

Study 3 Manipulation and Suspicion Checks	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
earning any points in a round correctly for condition		102		102		102		102
Answered Q about not earning any points in a round correctly for condition or not sure	0.765	102	0.775	102	0.706	102	0.833	102
Answered Q about not earning any points in a round correctly for condition (for entire collected sample)	0.731	119	0.707	116	0.620	121	0.825	114
Answered Q about not earning any points in a round correctly for condition or not sure (for entire collected sample)	0.765	119	0.750	116	0.686	121	0.833	114
Indicated threat-condition situation for risk of losing all points in a round	0.510	102	0.490	102	0.343	102	0.657	102
Answered Q about risk of losing all points in a round correctly for condition	0.510	102	0.588	102	0.441	102	0.657	102
Answered Q about risk of losing all points in a round correctly for condition or not sure	0.676	102	0.735	102	0.657	102	0.755	102
Answered Q about risk of losing all points in a round correctly for condition (for entire collected sample)	0.513	119	0.552	116	0.397	121	0.675	114
Answered Q about risk of losing all points in a round correctly for condition or not sure (for entire collected sample)	0.689	119	0.707	116	0.636	121	0.763	114
Situation personally threatening (Q)	2.891	1.897 101	2.950	1.797 101	2.505	1.718 101	3.337	1.878 101
Situation threatening to group (Q)	3.451	1.907 102	3.598	2.021 102	2.980	1.877 102	4.069	1.900 102
Any type of suspicion - yes	0.373	102	0.451	102	0.461	102	0.363	102
Any type of suspicion - yes/not sure	0.549	102	0.608	102	0.618	102	0.539	102
Any type of suspicion affect behavior - yes	0.018	56	0.032	62	0.032	63	0.018	55
Any type of suspicion affect behavior - yes/not sure	0.018	56	0.113	62	0.063	63	0.073	55
Acted real despite any type of suspicion - yes	1.000	56	1.000	62	1.000	63	1.000	55
Suspicious about group members - yes	0.588	102	0.627	102	0.598	102	0.618	102
Suspicious about	0.667		0.686		0.657		0.696	

Study 3 Manipulation and Suspicion Checks	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
group members - yes/not sure		102		102		102		102
Suspicion about group members affect behavior - yes	0.985	68	0.986	70	0.985	67	0.986	71
Suspicion about group members affect behavior - yes/not sure	1.000	68	1.000	70	1.000	67	1.000	71
Acted real despite suspicion about group members - yes	0.015	68	0.014	70	0.000	67	0.028	71
Acted real despite suspicion about group members - yes/sure	0.015	68	0.057	70	0.030	67	0.042	71
Suspicious about group member info - yes	0.353	102	0.353	102	0.382	102	0.324	102
Suspicious about group member info - yes/not sure	0.451	102	0.529	102	0.490	102	0.490	102
Suspicion about group member info affect behavior - yes	0.000	46	0.037	54	0.020	50	0.020	50
Suspicion about group member info affect behavior - yes/not sure	0.065	46	0.148	54	0.100	50	0.120	50
Acted real despite suspicion about group member information - yes	0.978	46	0.981	54	0.980	50	0.980	50
Acted real despite suspicion about group member information - yes/not sure	1.000	46	1.000	54	1.000	50	1.000	50
Final suspicion question - any type of suspicion affected behavior during study - yes	0.000	102	0.000	101	0.000	102	0.000	101
Final suspicion question - any type of suspicion affected behavior during study - yes/not sure	0.01	102	0.0297	101	0.0196	102	0.0198	101
Number of whether suspicious Qs indicated yes to	1.314	1.177 102	1.446	1.245 101	1.441	1.255 102	1.317	1.166 101
Number of whether suspicious Qs indicated yes or not sure to	1.676	1.220 102	1.851	1.314 101	1.784	1.271 102	1.743	1.270 101

Power Manipulation Checks

All participants were ostensibly assigned to the same power structure, in which they have low power, and another participant (Partner A) has high power.

For the question asking the participant to describe their power position by rating the extent of power they themselves held in their network position, means do not differ statistically across the conditions ($F = 0.70$, $p = 0.554$), and no specific comparisons are statistically significant.

For the question asking the participant to describe Partner A's power position by rating the extent of power their Partner A held in their network position, there are some noteworthy differences across and between the conditions. Means differ statistically across the conditions ($F = 3.33$, $p = 0.021$). The threat comparison among low-status participants is statistically significant such that threatened participants rated their (high-status) partner as more powerful ($F = 8.87$, $p = 0.003$). The status comparison within the threat conditions is statistically significant such that high-status participants rate their (low-status) partner as less powerful ($F = 5.67$, $p = 0.018$). The difference in status coefficients by threat is statistically significant such that threat increases this rating for low-status participants, and decreases it for high-status participants (chi square = 7.22, $p = 0.007$). As noted above, the status comparison is only statistically significant for the threatened participants.

Participants were asked to identify in a multiple-choice question how the task networks are assigned. It was specified during the instructions that these assignments are random. This question was designed to assess whether participants understood this correctly. One indicator specifies whether the participant answered this question

correctly, and another indicator specifies whether the participant either answered this question correctly or indicated they were not sure. For both of these measures, the proportions differ statistically across the conditions (chi square = 19.165, $p < 0.001$; chi square = 22.645, $p < 0.001$). All status comparisons are statistically significant such that more of the high-status participants answer this question correctly (or indicate they are not sure). This is the case for non-threat condition status comparisons ($z = -2.194$, $p = 0.028$, two-tailed; $z = -2.918$, $p = 0.004$, two-tailed), threat condition status comparisons ($z = -3.774$, $p < 0.001$, two-tailed; $z = -3.732$, $p < 0.001$, two-tailed), and the combined status comparison ($z = -4.221$, $p < 0.001$, two-tailed; $t = -4.707$, $p < 0.001$, two-tailed). When including control variables for the correct indicator, the non-threat condition status comparison only approaches statistical significance ($z = 1.79$, $p = 0.074$, two-tailed).

These results suggest that while the power manipulation was generally effective, there is some interest evidence that experimental manipulations affected understanding of the partner's power and how the network positions were assigned.

Status Manipulation Checks

For the participant's self-report of their contrast sensitivity score, means differ statistically across conditions ($F = 3{,}179.90$, $p < 0.001$), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison ($F = 4{,}830.14$, $p < 0.001$), the threat condition status comparison ($F = 4{,}707.76$, $p < 0.001$), and the combined status condition comparison ($t = -97.613$, $p < 0.001$).

For the participant's rating of their contrast sensitivity score against the national standard, means differ statistically across conditions ($F = 214.61$, $p < 0.001$), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison ($F = 280.68$, $p < 0.001$), the threat condition status comparison ($F = 362.10$, $p < 0.001$), and the combined status condition comparison ($t = -25.200$, $p < 0.001$). Also, within the high-status conditions, the threat comparison approaches statistical significance such that these threatened participants rate themselves higher ($F = 3.47$, $p = 0.064$).

For the participant's subjective rating of their contrast sensitivity score, means differ statistically across the conditions ($F = 102.66$, $p < 0.001$), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison ($F = 113.82$, $p < 0.001$), the threat condition status comparison ($F = 193.45$, $p < 0.001$), and the combined status condition comparison ($t = -17.211$, $p < 0.001$). Also, the threat comparison within the low-status conditions is statistically significant, such that the rating is lower for these threatened participants ($F = 4.90$, $p = 0.028$). There is also a statistically significant difference in the status coefficients by threat, such that participant status increases this rating more so for threatened participants (chi square = 5.33, $p = 0.021$).

For the participant's report of their partner's contrast sensitivity score, means differ statistically across conditions ($F = 1{,}144.97$, $p < 0.001$), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison ($F = 1{,}712.48$, $p < 0.001$), the threat condition status

comparison (F = 1,718.64, p <0.001), and the combined status condition comparison (t = 58.317, p <0.001).

For the participant's rating of their partner's contrast sensitivity score against the national standard, means differ statistically across conditions (F = 401.74, p <0.001), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison (F = 575.12, p <0.001), the threat condition status comparison (F = 629.72, p <0.001), and the combined status condition comparison (t = 34.789, p <0.001).

For the participant's subjective rating of their partner's contrast sensitivity score, means differ statistically across conditions (F = 224.75, p <0.001), and all status comparisons are statistically significant in the direction expected. This is the case for the non-threat condition status comparison (F = 307.39, p <0.001), the threat condition status comparison (F = 366.48, p <0.001), and the combined status condition comparison (t = 25.956, p <0.001).

These results suggest that the status manipulation was successful. The results also present some interesting evidence that suggests that threat affects perception of status in some ways.

Threat Manipulation Checks

For the scale addressing how personally threatened the participant feels, means across conditions do not differ statistically (F = 1.36, p = 0.256). Threat comparisons are in the direction expected. The high-status comparison is statistically significant (F = 3.39, p = 0.067, two-tailed), the low-status comparison is not statistically significant (F = 0.07,

$p = 0.793$), and the combined threat condition comparison (including both low- and high-status conditions) approaches statistical significance ($t = -1.481$, $p = 0.070$). When including control variables, the high-status threat comparison only approaches statistical significance ($F = 2.40$, $p = 0.123$, two-tailed).

For the scale addressing how threatened on behalf of the task group the participant feels, the differences in the means across the conditions is statistically significant ($F = 2.79$, $p = 0.042$). Threat comparisons are in the direction expected. The high-status and combined comparisons are statistically significant ($F = 4.69$, $p = 0.032$; $t = -1.481$, $p = 0.070$), the low-status threat comparison is not statistically significant ($F = 1.24$, $p = 0.268$). When including control variables, the differences in the means across the conditions only approach statistical significance ($F = 2.21$, $p = 0.088$).

For the question about the extent to which the participant evaluates the group task situation as personally threatening, means differ statistically across the conditions ($F = 3.94$, $p = 0.009$). All threat comparisons are in the direction expected. The threat comparison within the high-status conditions and the combined threat conditions are statistically significant ($F = 9.19$, $p = 0.003$; $t = -3.284$, $p = 0.001$), and the threat comparison within the low-status conditions approaches statistical significance ($F = 2.58$, $p = 0.055$).

For the question about to what extent the participant evaluates the group task situation as threatening to the group, means differ statistically across the conditions ($F = 5.81$, $p = 0.001$), and all threat comparisons are statistically significant in the direction expected. This is the case for the threat comparison within the low-status conditions ($F =$

6.29, $p = 0.013$), the threat comparison within the high-status conditions ($F = 10.83$, $p = 0.001$), and the combined threat condition comparison ($t = -4.115$, $p < 0.001$).

The question asking how difficult it was to earn profit points during the task is evaluated as a threat manipulation check question because the threat manipulation ostensibly makes it more difficult to earn points. The overall comparison of means across conditions approaches statistical significance ($F = 2.38$, $p = 0.070$). The threat comparison within the low-status conditions is in the opposite direction expected and not statistically significant ($F = 0.18$, $p = 0.675$). Both the high-status and combined threat comparisons are in the direction expected. The high-status comparison is statistically significant and the combined threat comparison approaches statistical significance ($F = 6.33$, $p = 0.013$; $t = -1.472$, $p = 0.071$). The combined threat comparison result appears to be driven by the high-status comparison. Also, within the threat conditions, the status comparison is statistically significant, such that these high-status participants indicate more difficulty earning profit points ($F = 4.15$, $p = 0.043$). There is also a statistically significant difference in the status coefficients by threat, such that high participant status (with low partner status) increases this rating for threatened participants and decreases it for non-threatened participants (chi square = 4.37, $p = 0.037$). However, as noted above, only the threat condition status comparison is statistically significant. When including control variables, the difference in status coefficients by threat only approaches statistical significance (chi square = 2.95, $p = 0.086$).

Threat Comprehension Results

As in Study 2, two questions were designed to assess whether the participant comprehended the threat conditions. First, they were asked to identify the circumstances under which it was possible for members of the network group not to earn any points during a given round. For the non-threat conditions, this was when group members could not agree on any point distributions, and for the threat conditions, this also included when the group resources were eliminated for that round (mentioning that there was a risk every round). Second, they were asked to affirm whether there was a risk of all points for the network group being eliminated each respective round (true for the threat condition participants). Both questions had an alternative response consistent with the threat and non-threat conditions, and a "not sure option." For the correct rates, only correct responses are counted (both incorrect and not sure responses are considered incorrect). Though ideally all participants in the final sample would fully comprehend the threat manipulations, it makes sense that as several results suggest, proportions of correct responses are lower in the threat conditions. This is because the threat version of the instructions is more complex, and perhaps more difficult to understand.

For the proportion of participants responding affirmatively to group resources being eliminated for that round as a way the group could not earn any points in a round, these proportions differ statistically across conditions (chi square = 60.333, p <0.001). All threat comparisons are statistically significant in the direction expected, such that participants in the threat conditions are more likely to indicate this response. This is the case for the combined threat condition comparison (z = -7.765, p <0.001), the low-status

condition threat comparison (z = -5.384, p <0.001), and the high-status threat condition comparison (t = -5.598, p <0.001).

For the correct answer indicator for the question about what determines if participants earn no points in a round, the difference in proportions across the conditions is statistically significant (chi square = 8.466, p = 0.037), and results suggest threat effects, such that those in the threat conditions are more likely to answer this question correctly. These results are unexpected because the threat situation was more complex, and perhaps because of that more difficult to comprehend. However, these results suggest that the control condition may have actually been more ambiguous for participants. Results in this direction are statistically significant for the threat comparison within the high-status conditions and the combined threat comparison (F = 2.272, p = 0.023, two-tailed; z = -2.892, p = 0.004, two-tailed), and it approaches statistical significance for the threat comparison within the low-status condition (F = -1.818, p = 0.069, two-tailed). When including not sure responses in addition to correct ones, proportions do not differ statistically across the conditions (chi square = 4.728, p = 0.193). Threat comparisons are in the same direction. The combined threat condition comparison is statistically significant (z = -2.162, p = 0.031, two-tailed), the high-status threat comparison approaches statistical significance (z = -1.659, p = 0.097, two-tailed), and the low-status threat comparison is not statistically significant (z = -1.401, p = 0.161, two-tailed). Including control variables for the yes proportion, the combined threat comparison only approaches statistical significance (z = 2.70, p = 0.007, two-tailed), and the low-status threat comparison no longer approaches statistical significance (z = 1.04, p = 0.300, two-tailed). Of potential interest, treating the yes response proportion as a mean, when

including control variables, the difference in proportions across conditions only approaches statistical significance ($F = 2.41$, $p = 0.068$).

I further evaluate this question about what determines if participants earn no points in a round with the entire collected data sample, to investigate whether data rejection systematically affected these manipulations. These results suggest that this was not the case. For the correct response indicator, statistical conclusions in the full collected sample are the same as in the balanced sample of accepted data. Proportions differ statistically across the conditions (chi square = 13.437, $p = 0.004$), both the threat comparison within the high-status conditions and the combined threat condition comparison are statistically significant ($z = -3.145$, $p = 0.002$; $t = -3.490$, $p = 0.001$, two-tailed), and the low-status comparison approaches statistical significance ($t = -1.791$, $p = 0.073$, two-tailed). For the indicator including both correct and not sure responses, proportions across conditions approach statistical significance (chi square = 7.377, $p = 0.061$). All threat comparisons are in the same direction as in the analyses above. The high-status and combined threat condition comparisons are statistically significant ($z = -2.252$, $p = 0.024$ $z = -2.634$, $p = 0.008$, two-tailed), and the low-status threat comparison is not statistically significant ($z = -1.476$, $p = 0.140$).

For the proportion of participants responding "yes" that there is a risk of losing all points for that round with each respective round, these proportions differ statistically across conditions (chi square = 21.412, $p < 0.001$). All threat comparisons are statistically significant in the direction expected, such that participants in the threat conditions are more likely to indicate this response. This is the case for the combined threat condition

comparison (z = -4.481, p <0.001), the low-status condition threat comparison (z = -2.377, p = 0.009), and the high-status threat condition comparison (z = -3.961, p <0.001).

For the correct answer indicator for the question about whether there is a risk of all points being eliminated for a round, the difference in proportions across the conditions is statistically significant (chi square = 10.929, p = 0.012). All status comparisons are statistically significant such that those in the threat conditions are more likely to answer this question correctly. This is the case for the threat comparison within the low-status conditions (z = -2.377, p = 0.018, two-tailed), threat comparison within the high-status conditions (z = -2.012, p = 0.044, two-tailed), and combined threat condition comparison (z = -3.096, p = 0.002, two-tailed). When including not sure responses in addition to correct ones, proportions do not differ statistically across the conditions (chi square = 3.589, p = 0.309, and while all threat comparisons are in the same direction, none are statistically significant. This is the case for the threat comparison within the low-status conditions (z = -1.482, p = 0.139, two-tailed), threat comparison within the high-status conditions (z = -0.673, p = 0.501, two-tailed), and combined threat condition comparison (z = -1.537, p = 0.124, two-tailed). When including control variables for the correct responses only, the high-status threat comparison is no longer statistically significant (z = 1.58, p = 0.115, two-tailed). When including control variables for the correct responses along with the not sure responses, the low-status threat comparison becomes statistically significant (z = 2.33, p = 0.020, two-tailed) and the combined threat comparison approaches statistical significance (z = 1.84, p = 0.065, two-tailed).

I also evaluate this question about risk of point loss during a round with the entire collected data sample, to investigate whether data rejection systematically affected these

manipulations. These results suggest that this was not the case. For the correct response indicator, results in the full collected sample are the same as in the balanced sample of accepted data. The difference in proportions across the conditions is statistically significant (chi square = 18.691, $p < 0.001$). All status comparisons are statistically significant. This is the case for the threat comparison within the low-status conditions ($z = -3.224$, $p = 0.001$, two-tailed), threat comparison within the high-status conditions ($z = -2.820$, $p = 0.005$, two-tailed), and combined threat condition comparison ($z = -4.280$, $p < 0.001$, two-tailed). When including not sure responses in addition to correct ones, proportions do not differ statistically across the conditions (chi square = 4.849, $p = 0.183$), and results are in the same direction, but only the combined status comparison is statistically significant ($z = -2.116$, $p = 0.035$, two-tailed), and the threat comparison within the low-status conditions approaches statistical significance ($z = -1.872$, $p = 0.061$, two-tailed). The threat comparison within the high-status conditions is not statistically significant ($z = -1.105$, $p = 0.269$, two-tailed). When including control variables for the correct along with the not sure responses, the low-status threat comparison becomes statistically significant ($z = 2.28$, $p = 0.023$). Of potential interest, when treating this outcome as a mean and including control variables and, the difference in proportions across conditions approaches statistical significance ($F = 2.13$, $p = 0.098$).

Suspicion Checks

Several questions were designed to assess participants' suspicion. The measures and how they differed across experimental conditions are discussed below. All participants refers to the final balanced sample. The specific probing questions about

each type of suspicion were only asked of those who indicated "yes" or "not sure" to being suspicious in this way. Results for the difference of status coefficients by threat are not available for most of these variables due to missing estimates (i.e., means of 0). The proportions provided for these probing questions only include those participants asked. The tables above provide the number of participants included in calculating each proportion.

Ever suspicious (first question): For the first question about being suspicious about anything in the study (which all participants were asked), proportions indicating "yes" do not differ statistically across the conditions (chi square = 5.343, $p = 0.148$). However, the threat comparison within the high-status conditions is statistically significant, such that threatened participants are less likely to indicate this ($z = 1.990$, $p = 0.047$, two-tailed). The status comparison within the non-threat conditions approaches statistical significance, such that high-status participants are more likely to indicate this ($z = -1.788$, $p = 0.074$, two-tailed). Including "not sure" responses along with the "yes" ones, the difference in the status coefficients by threat approaches statistical significance (chi square = 2.97, $p = 0.085$). When including control variables for the yes outcome only, the non-threat condition status comparison no longer approaches statistical significance ($z = 1.48$, $p = 0.140$, two-tailed). When including control variables for the yes along with not sure responses, the non-threat condition status comparison becomes statistically significant ($z = 2.03$, $p = 0.042$, two-tailed). When treating the yes along with not sure indicator as a mean, and including control variables, the difference in proportions across conditions approaches statistical significance ($F = 2.48$, $p = 0.063$).

Whether this suspicion affected behavior: Participants who indicated either "yes" or "not sure" that they were suspicious about anything in the study were asked whether the suspicion affected their behavior. For proportion of participants indicating "yes" to this question, the proportions do not differ statistically across conditions (chi square = 2.798, $p = 0.424$). When treating this outcome as a mean, the difference in the status coefficients by threat approaches statistical significance such that the non-threat mean increases with threat and the threat mean decreases with threat, but no individual comparisons are statistically significant (chi square = 3.09, $p = 0.079$).[37] When including "not sure" as well as "yes" responses, these proportions also do not differ statistically across conditions (chi square = 4.473, $p = 0.215$), though the non-threat condition status comparison approaches statistical significance such that high-status participants are more likely to indicate this ($z = -2.051$, $p = 0.040$, two-tailed).

Whether acted as though real: All asked participants indicated "yes" that they acted as though the circumstances of the study were real.

Whether any suspicion affected behavior during study (final question): As a final suspicion question, all participants were asked whether any type of suspicion affected their behavior during the study. No participants responded "yes" to this question. The proportion of participants indicating "not sure" does not differ statistically across conditions (chi square = 0.67, $p = 0.567$), and no specific comparisons are statistically significant.

[37] The chi-square test yields missing results. Most control model analyses are unavailable as well.

Summary Suspicion Scale

A suspicion scale was computed to measure how many of the four suspicion questions participants indicated suspicion about. The first measure is the number of questions they said "yes" to. Means do not differ statistically across conditions ($F = 1.06$, $p = 0.368$) or any specific comparisons. When computing this scale with both "yes" and "not sure" responses, means also do not differ statistically across the conditions ($F = 1.28$, $p = 0.284$). However, the status comparison within the non-threat conditions approaches statistical significance such that high-status participants indicate more suspicion ($F = 3.53$, $p = 0.062$), and in turn, the difference in status coefficients by threat also approaches statistical significance (chi square = 2.84, $p = 0.092$). When including control variables for the yes scale only, the non-threat condition status comparison is statistically significant ($F = 4.45$, $p = 0.036$) such that high-status participants indicate more suspicion, and the difference in status coefficients by threat approaches statistical significance (chi square = 3.29, $p = 0.070$). When including control variables for the scale for both yes and not sure, the non-threat condition status comparison also becomes statistically significant ($F = 5.65$, $p = 0.019$), and the high-status threat comparison approaches statistical significance such that threatened participants indicate less suspicion ($F = 3.09$, $p = 0.080$).

Specific Types of Suspicion

Below I present results for specific suspicion about the partner and information presented about the partner.

Suspicion about the group members: All participants were asked if they were suspicious about whether any of their group members were real. The proportion indicating "yes" do not differ statistically across the conditions (chi square = 2.03, p = 0.154), and no specific comparisons are statistically significant. The same is true for the proportion including "not sure" as well as "yes" responses (chi square = 1.881, p = 0.597).

Whether this suspicion affected behavior: Participants who indicated either "yes" or "not sure" that they were suspicious about the group members were asked whether the suspicion affected their behavior. The proportion indicating "yes" does not differ statistically across the conditions (chi square = 1.922, p = 0.589), and no results available for specific comparisons are statistically significant. The same is true for the proportion including "not sure" as well as "yes" responses (chi square = 2.137, p = 0.544).

Whether acted as though real: The proportion of asked participants indicating "yes" does not differ statistically across conditions (chi square = 2.888, p = 0.515), and no specific comparisons are statistically significant. All asked participants indicated either "yes" or "not sure" to this question.

Suspicion about information about the group members: All participants were then asked if they were suspicious about any information provided about the group members. The proportion indicating "yes" does not differ statistically across the conditions (chi square = 1.546, p = 0.672), and no specific comparisons are statistically significant. The same is true for the proportion including "not sure" as well as "yes" responses (chi square = 1.25, p = 0.263). When including control variables for the yes responses only, the high-status threat comparison is statistically significant, such that the threatened participants

are less likely to indicate this (z = -2.29, p = 0.022, two-tailed). When including control variables for the "yes" responses as well as the "not sure" responses, the non-threat condition status comparison approaches statistical significance such that high-status participants are more likely to indicate this (z = 1.92, p = 0.055, two-tailed), and the threat comparison for high-status participants approaches statistical significance (z = -1.92, p = 0.055, two-tailed).

Whether this suspicion affected behavior: Participants who indicated either "yes" or "not sure" that they were suspicious about information provided about the group members were asked whether the suspicion affected their behavior. The proportion indicating "yes" does not differ statistically across the conditions (chi square = 1.759, p = 0.624), and no specific comparisons are statistically significant. The same is true for the proportion including "not sure" as well as "yes" responses (chi square = 1.934, p = 0.586). When including control variables for the yes and not sure indicator, the threat condition and combined status comparisons approach statistical significance such that high-status participants are more likely to indicate this (z = 1.79, p = 0.073, two-tailed; z = 1.83, p = 0.067).

Whether acted as though real: The proportion of asked participants indicating "yes" does not differ statistically across conditions (chi square = 2.430, p = 0.488), and no specific comparisons are statistically significant. All asked participants indicated either "yes" or "not sure" to this question.

Study 3 Discussion

The Study 3 experiment results provide a great deal more support for the predictions than Study 1 or Study 2 do. The results suggest that high-status participants with powerful low-status partners especially respond to threats, and that low-status participants regard the high-status partner as less legitimate before the task than during and after. Though minimal, there is also some evidence of increased ingroup prosocial orientations under threat, especially before the group task.

Results among high-status participants were notably strong for the coalition voting results and post-task subjective legitimacy rating scale. Perhaps also notably, the assumption about coalition voting reflecting legitimacy was not supported, such that high-status participants (with low-status partners) did not vote more often in favor of the coalition against the powerful actor. An interesting pattern emerged with threat and pre-task voting, such that threat generally increased the proportion of these votes, regardless of the status condition. This suggests that a powerful actor is not as likely to be viewed as legitimate (i.e., they should not be in that position) when the group is threatened, no matter who the powerful actor is (high- or low-status). Despite this, there is a great deal of evidence that when threatened, the powerful actor is viewed less favorably when they are low in status. The results also somewhat support the status-based legitimacy assumptions tested in Lucas et al. (manuscript in progress).

The results for voting in favor of a network coalition changed from before to after the network task. While there no statistically significant voting results were consistent with Prediction 3 before the task, there were after the task. This pattern raises the

possibility that acting in a low-power position, and ostensibly having resources withheld to some extent by a powerful actor, mobilizes defense of the ingroup prosocial worldview of promoting the legitimacy of power, and therefore results in action (votes in favor of the coalition). This was the case to some extent for the low-status participants voting before the task (though voting patterns did change from before to after the task).

There is also some evidence for ingroup prosocial orientations increasing under threat, especially before the group task. Notably, the pooled threat comparison for being motivated to benefit the group before the task is statistically significant, and the comparisons approach statistical significance within the low-status and high-status conditions. Also, among the low-status participants, the threatened participants indicated that the task group was more important to them — this was statistically significant before the group task, and approached statistical significance after the task.

Results highlight how status characteristics, and therefore properties of legitimacy, may vary by context. That is, the extent to which legitimacy is in the eye of the beholder. For example, a political leader may have culturally or subculturally valued traits, like being white, male, or liberal, and depending on the constituents' values, be perceived as more or less legitimate. Willer et al.'s (2016a, also 2016b) work demonstrating experimental support for threat to white racial identity strengthening Tea Party support is a relevant example. Another illustration of this relative legitimacy is how following 9/11, increased compliance with U.S. Homeland Security's TSA travel rules might be considered ingroup prosociality. However, criticism of overzealous TSA agents, full-body scanning at airports, and a recent Homeland Security investigation highlights the importance of perceived legitimacy of power (the investigation found that an

alarming rate of dangerous items were missed during screening, e.g., Bonner 2015). If these programs were perceived as more legitimate (for example, if the scanning technology was nearly foolproof), the public may be more supportive of them.

Theoretical Considerations

While the results provide a great deal of support for Prediction 5, that threats increase promotion of the legitimacy of power, I consider how the pattern of results suggest a potential alternative explanation, self-serving motivations. This is consistent with patterns in the Study 1 and Study 2 results (Chapter 4 and Chapter 6, respectively). Specifically, while behaviors are observed among both low-status participants (with high-status partners) and high-status participants (with low-status partners), there is more evidence of threat affecting related attitudes, or orientations, for the high-status participants. I propose that high-status participants are especially motivated to promote the legitimacy of power, and perhaps experience indignation when faced with a powerful low-status actor (especially when they act selfishly). By comparison, low-status participants' responses to the powerful high-status actor under threat are more so consistent with practical responses to the threat situation, such that they are trying to maximize their personal profit score.

A potential nuance of the theory is that high-status participants may experience indignation when faced with a powerful low-status actor (especially when they act selfishly). This indignation may come from an interaction between a threatening situation and a powerful actor acting selfishly (or at least in a position where they could easily act

selfishly). The low-status partner in the high-status position is inconsistent with an ingroup prosocial legitimacy of power worldview, so it may have elicited the strongest results for this reason. The threatened high-status participants indicated that it was more difficult to earn points than those in the non-threat conditions. This was not the case for the low-status participants, which suggests the high-status participants especially internalized the threat. The result for post-task legitimacy evaluations was statistically significant in the direction predicted for the high-status participants but not the low-status participants. High-status participants may also feel most invested in the power structure, and feel that they themselves deserve the high-power position more so than their low-status partner. Before the task, high-status participants indicated that during the task, they would be more selfish, and also potentially more group-oriented, but interestingly, this was not the case for ratings after the task. Behavioral responses among high-status participants, such as some voting outcomes, mean number of points offered to the partner, and post-task hypothetical point offers from a position of power are consistent with this pattern. By comparison, the low-status participants may not have seen the high-status partner occupying and acting somewhat selfishly in the powerful position as problematic (and therefore they may have reacted more practically to the threat situation). Notably, partner selfishness evaluations do not particularly support this explanation for the high-status participants. Further consistent with this explanation, proportionally fewer threatened high-status participants wanted to work with the same partner again, compared to these same non-threatened participants. In future research, it would be of interest to see how low-status participants respond to a powerful low-status partner.

For low-status participants, their responses seemed more practical and less worldview-oriented compared to the high-status participants. As mentioned above, high-status participants indicated that it was more difficult to earn points when threatened, while this was not the case for low-status participants. This suggests that low-status participants did not internalize the threat as much as the high-status participants did, and perhaps specifically did not internalize it as much in terms of an ingroup prosociality worlview for the legitimacy of power. There was interesting evidence that their impressions of their powerful high-status partner improved from before the task to during and after. Interestingly, they rated the powerful high-status partner as more powerful when threatened. Voting patterns among low-status participants became more favorable toward their high-status partner from before to after the task. There is also potential evidence that before the task (but not after), low-status participants (with high-status partners) think the partner is less motivated to benefit themselves under threat. While the low-status participants may have anticipated the powerful high-status actor abusing their power, during and after the task, they may have determined that the powerful high-status actor's behavior was not so problematic. Before the task, the low-status participants expected their partner to use more power when threatened than not threatened, but this was not the case after the task. Also the threat comparison within low-status participants for the pre-to-post-task change in this rating approaches statistical significance. This pattern is also evident in the higher proportion of offers low-status participants accepted under threat.

There is some evidence that participants may have become more ingroup prosocial under threat. Notably, the pooled threat comparison for being motivated to

benefit the group before the task is statistically significant, and the comparisons approach statistical significance within the low-status and high-status conditions. I note that these patterns are especially among the low-status participants, and that they may have become more generally ingroup prosocial, but not necessarily in terms of the legitimacy of power. For their pre-task ratings for hypothetical use of power (as though in a powerful position), they indicated that would use if less selfishly and more in ways that benefit the group when threatened than non-threatened. There was also evidence that threatened low-status participants are less motivated to benefit the self after the task. Only threatened low-status participants rated the network group as more important (both pre- and post-task), but this wasn't the case for high-status participants. In previous discussion points, I suggested the possibility of using behavior to reconcile worldviews with situations in the social world, consistent with affect control theory (ACT, e.g., Owens 2002). This pattern of results strongly supports the general prediction of this work. However, the question remains why these patterns were not more consistent with the other questions, or with the high-status participants responding to the same questions. It is also interesting how the results supporting greater cohesion under threat tend to be before the task but not after. This suggests a potential coping strategy once faced with the powerful actor's selfish before.

As in Study 2, there are interesting results for some of the manipulation check questions. Specifically, some of the Study 3 status manipulation check questions yield results consistent with increased adherence to status orders under threat. This is consistent with Prediction 3, as tested in Study 2. By comparison, some of these Study 2 status manipulation results suggest self-inflation, potentially to ease anxiety about

performing poorly. Of potential interest, the status manipulation was not directly relevant to performance on the Study 3 task, but it was for Study 2. Methodological limitations of the Study 2 threat manipulation are discussed in Chapter 6, and advantages of the Study 3 threat manipulation are discussed in this chapter and Chapter 9.

Some questions originally designed as manipulation checks revealed interesting patterns relevant to the proposed theory. Specifically, threatened high-status participants evaluated themselves as having higher contrast sensitivity ability compared to the national average (approached statistical significance) and threatened low-status participants subjectively evaluated themselves as having lower contrast sensitivity ability. These are similar to results observed in Study 2. There were also interesting patterns in the results for perception of the partner as powerful. Under threat, low-status participants (with high-status partners) view their partner as more powerful, and when threatened, the high-status participants with low-status partners view their partner as less powerful. Taken together, these manipulation check results suggest that participants may have been trying to create a more legitimate reality internally, such that status differentials are pronounced under threat, and low-status actors with power are seen as having less power.

Methodological Considerations

As mentioned above, the Study 3 threat design and threat manipulation likely engaged the participants more so than Study 1 and Study 2 did. Not only did participants experience having resources withheld by a powerful actor (who took more resources for themselves), there was also a percentage risk that all points in a given round would be

eliminated. The explanatory language for participants unique to Study 3 likely improved this reception:

> [The percentage risk] simulates situations in the social world like destruction of group resources at the hands of hostile out-groups, loss of food due to overuse of natural resources, and failure to respond effectively to natural disasters like hurricanes, floods, or forest fires.

Compared to Study 2, the threat manipulation checks indicate greater effectiveness of this manipulation, so this may in part explain the more supportive results from Study 3. Further adding to the situation's salience was the relative instability of the power structure, because it ostensibly can change via group member vote. I discuss instability in more detail as a potential confound below.

A potential confound with powerful positions and use of power in Study 3 is that of selfishness, exploitation, or abuse of the power. The instructions specify that the partner has a negotiation advantage, and the partner simulation is programmed to progressively demand more and more than their fair share of points. During the group task, the somewhat selfish behavior the participants observed may have been interpreted as not only use of power, but abuse of power. This presents a noteworthy limitation in how use of power was presented to participants. It would be of interest in future work to only present holding a position of power, and if using power, in ways that are interpretable as neutral or ingroup prosocial (e.g., declaring war against an enemy nation on behalf of one's country).

Another potential limitation, or confound, with the Study 3 threat condition is that of relief or gratitude, especially the sentiment after a near-miss. After finding out they missed the elimination of all points for a round each time, they may have begun to feel lucky. Measures reflecting feelings of gratitude, luck, or even positive affect would have

been of interest to assess this possibility, but the Study 3 data do not include any. Also notably, while voting before the task could help to assess expectations for legitimacy, informing participants of this possibility of the power structure changing as a result of their votes could introduce intragroup threat via instability (e.g., Barclay and Benard 2013). As I discussed above in terms of intragroup threat, it seems possible that instability undermines the legitimacy of power. Perhaps this helps to explain why the threat manipulation in Study 3 seemed especially effective. Notably, from before to after the group task in Study 3, coalition voting results followed the predictions more so after than before. However, measures were not designed to assess feelings of intragroup threat or instability. This may be of interest to address in future research.

Summary

These results somewhat support the predictions, that persons more strongly promote legitimate power structures when under threat. However, alternatively, they suggest that self-serving motivations may be at play, such that high-status participants are especially indignant about powerful low-status actors, and that low-status participants respond in ways more practical to the situation. Low-status participants may also exhibit ingroup prosociality in ways not necessarily consistent with the legitimacy of power worldview.

Chapter 9: Discussion and Conclusions

In this chapter I discuss the results from the three experiments, and based on these results I present some conclusions. I address how my findings inform the proposed theory about threats promoting ingroup prosociality, a potential alternative explanation in which self-serving motivations shape responses to threats, and potential directions for future research.

Evaluating the Results

Results from the experiments only somewhat support the proposed theory that threats to groups increase ingroup prosociality via ingroup prosociality worldviews. While there are potential explanations (especially due to methodological limitations) for some results that do not provide statistical support for predictions and even some in the opposite direction, such that these results do not necessarily disconfirm the theory, I consider alternatives to the proposed theory. The present results suggest a potential alternative explanation that focuses on self-serving motivations for relationships observed between threats and ingroup prosocial behaviors and orientations. In any case, the results suggest the need for further research.

There are two main conclusions I draw from this research. First, there is evidence of threats to groups affecting both behaviors and orientations (many of which I propose reflect ingroup prosociality), so these warrant consideration together as defensive responses to threats. Second, when threatened, people especially react in ways that uphold the legitimacy of power. When threatened, high-status group members seem

especially invested in promoting the legitimacy of power, and may react to powerful low-status actors with indignation, especially when they are able to or actually act selfishly. In terms of potential interventions for political or military leadership, this work stresses the importance of perceived status for perceived legitimacy of power, especially under threat.

Though statistical support was minimal, the Study 1 results suggest that threat promotes some ingroup prosocial orientations, such as holism among Americans and lower individualism among Indians, that terrorism is more effective in eliciting threat responses than natural disaster, and that there may be some interesting differences in threat responses by culture. The Study 1 results were generally more consistent with Prediction 2A, which predicted greater responsiveness to threatening situations among Americans, compared to Prediction 2B, which predicted greater Indian responsiveness. Notably, Indians became less ingroup prosocial in some ways when threatened, specifically on pre-to-post manipulation changes in country and family group importance.

The group studies, Study 2 and Study 3, allow us to separate practical responses to threats (i.e., increased effort to earn profit points) with internalizing ingroup prosocial orientations about status orders and the legitimacy of power, respectively. While the results for status orders (Study 2) largely did not support the predictions, to a great extent both types of results for promoting the legitimacy of power did (Study 3).

From the Study 2 results, there were no supporting results for the outcomes predicted, and there were only some suggestive results that threat changed some attitudes in status-consistent ways. The results that did provide minimal support for the predictions were questions originally intended as cohesion outcomes and manipulation checks.

Though low-status participants reported decreased contrast sensitivity ability scores when threatened, their subjective ability evaluations increased.

The Study 3 results suggest that threat increases several outcomes that indicate promotion of legitimate power structures, such that high-status individuals should be in positions of power, and low-status individuals should not. Results suggest that high-status participants with powerful low-status partners especially internalize the legitimacy of power worldview, and that low-status participants regarded the high-status partner as less legitimate before the task than during and after. There is also some evidence that threat increases general ingroup prosocial and cohesion orientations.Based on the results, the most prominent ingroup prosociality worldview was upholding the legitimacy of power structures, both behaviorally and mentally. I initially proposed that ingroup prosociality, as concrete group processes outcomes — social and cognitive orientations, status, and power — may be considered broadly as a cultural worldview as in terror management theory (e.g., Greenberg et al. 1997). While statistical evidence is notably limited for all but the legitimacy of power outcomes. Specifically, this was for the orientation outcomes (see Study 1 and Study 3 results), status-related attitudes (see Study 2 and Study 3 results), and promoting the legitimacy of power (both behaviorally and mentally, Study 3 results).

Based on my findings, especially Study 3, I propose considering outcomes fundamental the group processes literature, such as status and power processes, as potentially part of ingroup prosocial worldviews. The Study 3 findings demonstrated clear worldviews about the legitimacy of power, and these are closely tied to status processes (e.g., Lucas et al., manuscript in progress). Predictions for some orientations

about how groups should function, especially locus of attention holism for Americans and lower individualism among Indians, were supported in Study 1 as well. This combination of findings across contexts (and cultures, to some extent) supports both orientations and behaviors that benefit ingroups as part of the ingroup prosociality category. However, the potential self-serving explanation, discussed in more detail below, is a potential limitation to this framing.

Self-serving Explanation

The results somewhat support the initially proposed theory, but suggest a possible alternative explanation, which is self-serving motivations for responses to threats. I briefly highlight the reasons for this explanation below, and suggest future research specific to this explanation. As in the tests of the predictions for the proposed theory, not all results were statistically significant or even in direction supporting this explanation. However, some of the patterns in the results are consistent with this explanation, which is of interest to consider in further developing theory about threats and behaviors and orientations that relevant to group contexts.

In Study 1, there is evidence of threatened Indians distancing from their country and family ingroups from before the manipulation to after the manipulation. In Study 2, threatened low-status participants subjectively evaluate themselves as higher in status than they do when not threatened. Though there is evidence in Study 3 consistent with both high- and low-status participants promoting the legitimacy of power, patterns of results suggest that the high-status participants (with powerful low-status partners) are especially invested in promoting the legitimacy of power, perhaps because they feel

personally indignant or as though they deserve the powerful position themselves. Also in Study 3, responses that appear more generally ingroup prosocial tend to be more so before the group task than after the group task. During the group task, the powerful actor acts somewhat selfishly, so this behavior likely to be received as illegitimate could explain differences in participants' responses from before to after the task.

I discuss this self-serving explanation in terms of terror management theory below. Of significant interest, preserving self-esteem is a fundamental motive addressed by terror management theory (TMT, e.g., Greenberg 1997). While the originally proposed theoretical framing largely draws on terror management theory, this alternative self-serving explanation is not directly compatible with the originally proposed motivation to uphold ingroup prosocial worldviews. However, of significant interest, the alternative explanation supports TMT as well. Also, this does not preclude overlap between these two types of motivations, however, such as when the self-concept is strongly invested in group membership and an ingroup prosocial identity. I discuss this further below in terms of implications for the self-concept.

A promising next step to test this self-serving explanation for responses to threat would be to use a public goods or commons dilemma situation (e.g., Brewer and Kramer 1986). Responses within a short period of time would be especially interesting, because the group's well-being is less directly related to the individual's well-being. The studies presented, especially the group studies (2 and 3) have considerable overlap between behaviors and orientations that benefit the self and behaviors and orientations that benefit the group. Patterns of findings in the present work have raised the possibility of self-serving motivations, especially those findings in the opposite direction predicted, and

discrepancies between low- and high-status participant responses, especially in Study 3. If further research supports the self-serving explanation over the ingroup prosociality worldview explanation, perhaps it would be theoretically fruitful to consider the self-serving motivations as self-preserving worldviews, and the Study 3 threat scenario as a situation in which they are especially likely to arise. Another relevant concept is that of altruism. It may be of interest to measure the extent to which individuals act altruistically, as to disentangle practical behaviors from ones enacted to benefit the group. Of significant interest, the participants in my studies appear to have reacted defensively to ingroup threats, at least in some ways. I discuss my findings in terms of terror management theory (TMT) in more detail below.

Terror Management Theory

My proposed theory is essentially a specific application of terror management theory (TMT, e.g., Greenberg et al. 1997), in which I specify that ingroup prosocial worldviews are threatened, and that under this type of threat, people think and behave in ways that defend those worldviews (ingroup prosocially). One big question is how well TMT does to explain the present results. As for my ingroup prosociality worldview explanation, the results only somewhat support this, and some patterns in results challenge it, instead suggesting that self-serving motivations explain the results observed. As for TMT, the theory recognizes actively buffering anxiety by preserving one's self-esteem as a worldview defense strategy (e.g., Greenberg et al. 1997). Facing a threat to a smoothly functioning ingroup. The Study 2 and Study 3 results suggest that people respond in practical ways that maximize their self-esteem. In Study 2 and Study 3 amount

of profit ostensibly depends on performance in the task group. These are not limited to behaviors (such as not offering as many points to a less legitimate powerful actor), but also orientations. If people are motivated to avoid cognitive dissonance, they will acknowledge attitudes consistent with what they see as reality. This is evident in the post-task legitimacy ratings in Study 3 among the high-status participants. To act practically in terms of their performance, they need only exhibit behaviors such as offering fewer points and voting in favor of a coalition. The less legitimate ratings of the low-status partner when threatened suggest a sense of indignation about the low-status partner holding this position and perhaps also acting somewhat selfishly.

It remains an open question whether we would expect to see mortality salience (MS) effects when applied to the present research questions (e.g., Greenberg et al. 1997). In other words, substituting the threat salience manipulations I used (along with situational ones for the group studies) with MS. Based on the present results, and especially if favoring the self-serving explanation over the ingroup-prosocial worldview explanation, I argue that this is plausible. Mortality salience (MS) could indirectly refer to ways the group could be harmed, but perhaps there would be stronger responses in terms of group-relevant behaviors if mortality salience were primed at the individual level. While TMT research has shown that MS activates ingroup prosocial cultural scripts (e.g., Gailliot, Stillman, Schmeichel, Maner, and Plant 2008), it is unclear whether self-serving motivations would dominate when competing with ingroup prosocial worldviews. As discussed above, measuring public goods or commons dilemma outcomes may be fruitful for disentangling these processes.

Further, it would be of interest to evaluate the extent to which psychometric constructs, especially personal need for structure (PNS), shape ingroup prosocial responses to threats (e.g., Landau et al. 2006, citing Thompson, Naccarato, Parker, and Moskowitz, 2001). This would be an especially profound contribution if it bridged these individual psychological processes relating to PNS and TMT with group processes within sociological social psychology. This raises the possibility that we may especially see ingroup prosocial responses to threats among persons already high in a relevant orientation, such as importance of one's ingroup, and that the originally proposed ingroup prosociality worldview explanation may only apply to persons who already feel their ingroup is highly important to them. This would presumably apply for other related ingroup prosocial orientations. This is a potential refinement of the originally proposed theory.

Some TMT work engages social identity theory explicitly (e.g., Pyszczynski et al.1997, citing Tajfel and Turner 1979). I reviewed several TMT studies in Chapter 1 that address threats to ingroups, ingroup prosociality outcomes, or both (e.g., Dechesne et al. 2000; Landau et al. 2004; Willer, Feinberg, and Wetts 2016). However, I sought to test ingroup prosociality as a broad worldview applying across various situations, including ones designed to test traditional group processes outcomes relating to status and power. Instead, though, the self-serving motivation may be a more viable explanation for the results observed. Despite this, and as mentioned above, it would be of interest to explore whether the ingroup prosociality processes under threat depend on the self-concept, or social identity, being held strongly, comparable to a high score on PNS (e.g., Landau et al. 2006).

Implications for the Self-concept

To what extent do ingroup prosocial identities and worldviews overlap? As I discuss in my literature review, Affect Control Theory (ACT) predicts that when the self and the situation are inconsistent, individuals are motivated to try to change the situation to lessen the dissonance they feel (e.g., Owens 2002). Identity Control Theory (ICT) is similar to ACT, but rather than specifying behavioral outcomes in the social world, it specifies self-level negotiation of the internal identity (Smith-Lovin and Robinson 2006). This warrants consideration in terms of the present theory, especially with results from Study 1 supporting increased workplace group importance for Americans and results from Study 3 supporting increased importance of the ingroup and motivation to benefit it. There are further results of interest that raise the possibility of behaviorally constructing a more ingroup prosocial reality. First is the finding among threatened low-status partners evaluating themselves as higher in status (and therefore likely more helpful to the group) in Study 2, in the absence of other support for Prediction 2 on status outcomes. Second is the Study 3 finding among low-status participants about hypothetical use of power before the group task, such that under threat these participants indicate that they would use their power more prosocially and less selfishly. An ingroup prosocial self-concept is likely consistent with the ingroup prosociality worldview that I propose and have argued is fundamental.

How can we explain the motivation to maintain an ingroup prosocial self-concept? As I discuss above, I argue that it is not purely practical, but about maintaining the ingroup prosociality worldview. If the response were only practical, we would have

only observed behavioral outcomes. However, most of the outcomes observed that support the predictions are orientations. Within the control systems theories of identity, we seek consistency between reality and either our behavior or self-concept. Within TMT, we seek consistency with our worldviews, or orientations about how the world should work. I argue that orientations include both behaviors and orientations, which both ACT and ICT address, and TMT would consider as a worldview. Some results support the initially proposed theory that they are ingroup prosocial, while some results suggest they tend to be self-serving.

Desire to avoid cognitive dissonance seems to be an individual-level explanation (Festinger 1957), but considering worldviews, whether ingroup prosocial or self-motivated, has further sociological implications. Perhaps, then, these control systems theories of identity, TMT, and the bridge I propose with group processes and cultural considerations, have more in common than initially thought. There is evidence that suggests participants do not want to think badly of their own ingroup, so they either act to change it (evidence of voting behaviors in Study 3 and low-status participants inflating their own status in Study 2) or distance themselves (some evidence in Indian group importance from Study 1, less importance of earning points among high-status participants and potentially less importance of task group among low-status participants from Study 2).

These points about cognitive dissonance raise the possibility that self-serving motivations could take priority over the group. However, similar to the point about a scope condition sometimes identified for TMT effects (e.g., PNS, e.g., Landau et al. 2006), if the self-concept is highly invested in being a good group member, then

promoting one's own self-esteem could mean thinking of oneself as a better group member (i.e., ICT), and perhaps acting in ingroup prosocial ways that affirm this self concept (i.e., ACT). Essentially, more strongly enacting an ingroup prosocial identity would necessarily benefit the ingroup. As mentioned above in terms of the scope of TMT effects, comparing threat effects on ingroup prosociality among group members who differ in extent of ingroup prosocial self-concept would be of significant interest for future research.

While within the scope of the proposed theory and relevant to theories about the self-concept, the present research did not examine intrapersonal threats. These are threats to the ingroup prosocial self-concept in terms of one's own evaluation of the self as a good group member. This type of threat is more about having doubts, more subjective, than concrete threats to the worldview (e.g., the existential threat where points can get taken away, following Barclay and Benard 2013). If threatening the self-concept of a group member (intrapersonal threat), we may expect to see defensive reactions involving the self, identity, or self-concept (following the terror management theory literature, e.g., Greenberg et al. 1997, see also Major et al. 2007). Research that addresses intragroup threat specifically will be able to test this empirically as part of the proposed theory.

Considering Threats Broadly

The results appear to support the predictions for existential threats more so than intergroup threats. However, the case for this would be stronger if Americans had responded to the Study 1 natural disaster manipulations more so than the terrorism manipulations, instead of the other way around. Also, the terrorism manipulation could

be considered as an intergroup type of threat as well, because the threat was presented as coming from an outgroup. Considering this, along with the potential methodological limitations of the Study 2 threat manipulation (which may not have been very effective), the results do not justify ruling out intergroup threat as relevant to the present theory. As mentioned above, the supporting results of the terrorism manipulation in Study 1 (particularly for Americans) still allow for the possibility that intergroup threat caused at least some amount of the observed ingroup prosociality response.

Considering these results and the initial broad theoretical framing of threats, at this point there is no clear rationale to narrow the types of threats to groups in terms of the present theory. The four types of threats to groups highlighted in Chapter 1 were intergroup, existential, intragroup, and intrapersonal. Future research could pursue a replication of Study 2 with a more salient intergroup manipulation to help to make a determination about the relevance intergroup threat. For the time of being, I maintain that it remains plausible that nearly all types of threats to groups apply in terms of testing the present theory and further theoretical development.

It is important to address how this work had the strongest support for the predictions for the outcome evaluations of the status-informed legitimacy of power structures under existential threat. When threats and the interests of the group conflict with one another, it makes sense that ingroup prosocial behaviors would be responsive to the threat. For example, if a group faced risk of famine, they would focus on feeding themselves rather than competing with other groups, but if the group faced competition for a food source from a rival group, they may let some of their own starve to secure the food source and social standing associated with possessing it (following from my

comment about Tajfel 1971 in Chapter 1). But in terms of ingroup prosocial orientations, such as holism, which do not directly relate to practical responses to the challenge the group faces, responses to the famine and intergroup example threats may be more uniform. And following this, status- consistent expectations about the legitimacy of power under threat could increase under threat even when the legitimacy of power is not salient in the specific situation, as it was in Study 3. These would be interesting research questions to test.

While intergroup and existential types of threats were examined in the present studies, the intragroup and intrapersonal threat types were not addressed explicitly. While there is currently no reason to suppose that these types of threats would not result in some type of ingroup prosociality response, they highlight the potential advantage of considering self-concept outcomes relevant to the threats. See discussion of implications for the self-concept above.

Cross-cultural Considerations

Another big question is how much support there is for the cross-cultural explanation for differences in responses to threats. I propose that we may see these social structuring processes at their most basic level with collectivistic (e.g., Eastern) versus individualistic (e.g., Western) types of societies. In other words, how members of a society respond to threat in the present is shaped by fundamental cultural characteristics (such as self-rated importance of one's country), which are arguably shaped by historical levels of threat (e.g., Gelfand et al. 2011, see Chapter 1). The Study 1 linear decomposition analyses are potentially of interest for answering these questions, because

they suggest that demographic and social characteristics (e.g., gender and frequency of using MTurk to make basic ends meet) predict Indian responses to terrorism more so than responses to natural disaster. However, as discussed in the Study 1 results (Chapter 4), there is little support for the cross-cultural assumptions of higher baseline feelings of threat and ingroup prosociality for Indians compared to Americans. While there are some results that suggest cultural differences in threat and ingroup prosociality processes, the results observed are only suggestive, and further investigation is needed to make any meaningful inferences. The results only somewhat suggest the possibility that cultural sensitivity may be warranted when evaluating ingroup prosociality responses (or lack thereof) on certain outcomes. Threat responses unique to Indians in Study 1 include lower levels of individualism (post-manipulation measures) and less importance of their country and family groups (from pre-to-post manipulation). Threat responses unique to Americans in Study 1 include the locus of attention dimension of holism and increased workplace group importance.

Though cross-cultural comparisons may be fruitfully included in future work, the present results do not suggest much theoretical promise for culture explaining responses to threats. This is especially due to the lack of support for the cross-cultural assumptions about higher baseline feelings of threat and ingroup prosociality for Indians compared to Americans. To assess the extent to which ingroup prosocial orientations such as holism shape subsequent ingroup prosociality responses (as orientations or behaviors in groups), a promising strategy may be to experimentally prime the orientation (such as holism), experimentally manipulate threat, and then measure the relevant outcomes. This method

would eliminate any confounding variables across cultures that were not previously measured or accounted for.

The threats manipulated in Study 1 were about the real-life country and real potential threats, natural disaster and terrorism, while the Study 2 and Study 3 threats were more situational, and likely more salient. However, I note that the threat description within Study 3 said that the point-elimination threat simulated real existential threats like natural disaster. It would be of interest to see if Indians respond to these situational threats differently than they did to the more abstract ones. A structure like Study 3 might be most revealing of cross-cultural differences, as it yielded the most supporting results. However, a noteworthy limitation is that the Study 3 sample only included American women.

Given that the TMT literature (e.g., Heine et al. 2002), and to some extent Study 1, have demonstrated cross-cultural differences in threat processes, it remains plausible that these differences may extend to the group processes outcomes I propose as instances of ingroup prosociality. Specifically, Torelli et al. (2014) find that a seemingly fundamental group process, status, has different meanings depending on cultural context — primarily as competence among North Americans (individualistic), and more so as warmth among Latin Americans (collectivistic). However, Cohen et al. (2004) finds that among a sample of American college students, mortality salience increases support for charismatic leaders (and interestingly, decreases support for relationship-oriented leaders). It would be of interest to see what characteristics inform status evaluations the most when threat is salient compared to when it is not, and how this might differ across cultures. There may be yet further cultural distinctions as to what types of behaviors, or

leadership styles, are normative, as Torelli, Leslie, Stoner, and Puente (2014, citing Matsumoto, Kasri, and Kooken, 1999) discuss how emotional displays of warmth encouraged in Latin American cultures may be discouraged in East Asian cultures.

Remaining Questions and Limitations

The biggest lingering question is probably why there was no uniform threat response across the studies as predicted. I believe it is safe to conclude that limited statistical power was not the reason for such limited evidence for some of the predictions. If this was the case, we would have expected to have more results than actually observed in the direction predicted and perhaps more just shy of statistical significance. As discussed in the chapters presenting results from each of the studies, methodological limitations and potential confounds are among these considerations

As discussed in the Study 1 results, one aspect of the group experience not addressed explicitly in this work is the permeability of group boundaries (e.g., Dechesne et al. 2000 citing Tajfel 1978). This refers to the how easily group members can leave or join the group. Dechesne et al. (2000) found that when the boundary is perceived as permeable, and the group is criticized, mortality salience increases the extent to which people distance themselves from their group. Though the University was the reference for Dechesne et al. (2000), and country was the reference group for Study 1, which is likely perceived as more enduring than the groups in Study 2 and Study 3. The task groups in Study 2 and Study 3 are like those considered in group processes research (e.g., Berger et al. 1977), and are ephemeral compared to either the University or the country.

This finding from Dechesne et al. (2000) raises interesting questions in terms of the present theory. First, at what point will people prioritize themselves over the group when the group boundary is perceived as permeable? This could be interpreted as someone abandoning or betraying the group (intragroup threat), and perhaps it could even inspire the otherwise ingroup prosocial group members to do the same. Would threat increase or decrease ingroup prosociality when group boundaries are relatively permeable? Considering the ingroup prosociality decrease for some outcomes among the Indians, this could perhaps suggest a process in the reverse direction proposed, consistent with the Dechesne et al. (2000) finding. These may also be interesting processes to examine cross-culturally.

Another question that remains is why the American participants in Study 1 and those in Study 2 (all Americans) did not consistently report feeling threatened, despite them acknowledging that the situations in their conditions were threatening. It could be due to potential distancing effects as mentioned above. However, I consider the relative effectiveness of the respective threat manipulations as an explanation. Evidence is relatively limited that threat consistently promotes ingroup prosocial orientations and status-consistent behaviors and orientations for Study 1 and Study 2. It is possible that priming through an engaging writing task as in Study 1, and adding the element of a competitive group task in Study 2, may not have been very effective threat manipulations. As discussed above, at least one participant in Study 2 relatively low financial stakes may have diminished responses. However, while Study 2 appeared to have monetary performance incentives, while Study 1 paid at a flat rate — it was presented as a writing and social attitudes task. Consistent with this explanation, Study 1

provided more support for the proposed theory than Study 2 did. Based on my experimental results, the Study 3 manipulation, risk of points being eliminated for a round, and that affecting the profit, appears to have been the most effective of these threat manipulations. Salience of threats may promote desired prosociality outcomes, but this is not likely when the threat or source does not appear legitimate (e.g., Barclay and Benard 2013), so perhaps the threats in Study 1 and Study 2 were perceived as less legitimate than the threat in Study 3.

Further considering the question about manipulation effectiveness, the threats used in Study 1 include existential (natural disaster) and existential along with intergroup (terrorism), and Americans (as well as Indians) were most responsive to terrorism. The Study 2 threat was intergroup (competition), and the Study 3 threat was existential (risk of round points being eliminated). The existential threat in Study 3 had the strongest response, and considering terrorism as an existential threat, this is consistent with the threat effects observed for Americans in Study 1. As noted in Chapter 8, the Study 3 threat manipulation could have potentially been so effective in part because it described the threat risk as symbolizing many types of threats, and some of the threats mentioned may have become salient to participants. These findings also speak to the TMT methodology — a distracting task was not needed to elicit defensive responses in in Study 3, and to some extent Study 2 (e.g., Greenberg et al. 2000). Study 1 used a distracting task (demographic questions) between the manipulation and outcome measures. See discussion about this below.

It may be of interest to assess results only including participants correctly answering questions about their threat conditions. However, depending on how difficult

to understand the situation is, such selections could bias the samples and undermine the validity of results. Specifically, those in the threat conditions would be different in some ways from those in the non-threat conditions. This was part of the reasoning for using relatively lenient data rejection criteria regarding the threat conditions, along with not rejecting an unreasonable amount of data (ideally no more than 20% of collected cases per study). However, unexpectedly, those in the Study 3 non-threat conditions most often incorrectly answered questions about the threat manipulations. This is perhaps because the situation seemed ambiguous to those in the non-threat conditions, at least in terms of the manipulation check questions asked. In all of the studies, I intentionally did not stress to participants that non-threatened situations were especially non-threatening or safe, as not to have those feelings affect responses more so than simply the absence of threat.

Study 1 was the only study to include a distracting task (demographic questions) after the threat manipulation, following the terror management theory (TMT) tradition (Greenberg et al. 2000). Due to time limitations, Study 2 and Study 3 moved straight from the threat manipulations (also solidified with a focused writing task) to the group tasks. It remains unclear whether participants would actively seek to suppress thoughts about their group being threatened, as in death thought suppression in TMT. However, because we saw noteworthy results in Study 3, this is perhaps an argument that the distraction task is not essential for this research. So in this respect, group processes research may diverge from TMT, such that threats simply promote ingroup prosociality in some situations. Future work could seek to determine whether thought suppression is involved in the present ingroup threat processes, as TMT work has found for death-related thoughts (e.g., Greenberg et al. 2000).

There are also some limitations in terms of generalizability. Study 2 and Study 3 only included Americans, and Study 3 only included women. Ideally this work would have tested ingroup prosocial behaviors in groups across cultures and consistently included both genders. However, based on the Study 1 findings, there was reason to expect Americans to respond more ingroup prosocially than Indians on the group tasks. The Study 3 sample was the most homogenous (only American women), and it yielded the most results consistent with the predictions. Active prevention of the data quality challenges similar to those encountered in Study 1 would be necessary if using a similar format or cross-cultural design. Controlling for demographic variables would be important if ever attempting to compare behavioral experimental data across cultures, and these variables are essential for counter-factual analyses. Though the Study 1 analyses never explicitly compared men and women (though gender was included in some control models), results from the group studies, Study 2 and Study 3, do not provide clear evidence that men and women respond much differently in these situations. If anything, as discussed above, the gender of the gender-matched partners in Study 2 may have functioned as a diffuse status characteristic (e.g., Berger et al. 1977), despite not differentiating the participant and the partner.

Despite my initial concerns about including participants who expressed suspicion about MTurk group studies during the screener increasing data rejection rates (see Rinderknecht 2015), this was not the case. Study 2 did not include any participants flagged as initially suspicious, and the overall data acceptance rate was 82.08%, while for Study 3, which did include some of these participants, the overall data acceptance rate was 91.91%. Though I previously discussed noteworthy technical issues with Study 2

that led to a higher rate of data rejection, the inclusion of these cases in the Study 3 sample was not greatly detrimental to the data acceptance rate for the group study.

Finally, a limitation of the group studies, Study 2 and Study 3, is that we cannot disentangle one's own status and the status of their partner. That is, with the structure of the conditions, participants with high-status partners are low in status, and participants with low-status partners are high in status. By comparison, an experiment on status and use of humor (Kerns manuscript in progress) assigns all participants a middle-range, or average, ability score, and only experimentally manipulates the partner's status (as either lower or higher). Despite this limitation, the status structure used is advantageous for two reasons. First, it tests the effects of status structures, rather than simply the partner's position. While it would be of interest to isolate the effect of the partner's status, the participant's status is of interest as well, and a bigger differential in status between the partner and participant would be expected to yield relatively strong results. Second, when both group members are considering their group's prospects of success or failure, the two contrast sensitivity scores given (CS) average the same. This means that all task groups in Study 2 (and Study 3, though this is less salient) had the same total (or average) of CS scores between the partner and the participant (8 and 17, average of 12.5). Based on these scores, each group should have the same prospect of success, and would therefore be on equal footing when encountering a threat, compared to the partner-only status manipulation described above.

Future Directions

Future work may pursue replications and extensions of the existing studies as discussed above. In particular, including intragroup and intrapersonal threat types would be of interest. Evaluating whether they are clearly supported or not supported would help to refine the theory. The present studies have demonstrated some evidence that both existential and intergroup threats elicit ingroup prosociality responses.

As discussed above and in terms of Study 3, variations of group processes status orders appear essential to refining the theory. In future research replicating Study 3, it would be of interest to see how low-status participants respond to a low-status partner in power. It would also be of interest to isolate responses to the partner's status, leaving the participant's status constant (e.g., Kerns manuscript in progress, see Study 2 discussion in Chapter 6 and Remaining Questions and Limitations section above). Gender is potentially an appropriate status manipulation to use in this context, because it does not directly relate to ability score. This would help to assess different possibilities in terms of the theory, specifically: (1) whether high-status actors with low-status partners in positions of power are simply more invested in the power structure because feel that they themselves deserve the high-power position more so than their low-status partner, (2) the low-status partner in the high-status position is inconsistent with an ingroup prosocial legitimacy of power worldview and therefore elicited especially strong responses, (3) responses are especially oriented toward attaining profit points when both the participant and the partner are low in status, or (4) there are other processes at work.

Future work may consider other relevant worldviews, such as following rules and regulations and how this interacts with status and power (e.g., Lucas, Huey, Posard, and

Lovaglia 2014). Fairness, justice, and trust are closely related social psychological and group processes concepts that could be tested as outcomes using the present framework. Self-esteem is relevant in terms of the self-serving explanation for results and TMT work (e.g., Greenberg et al. 1997). As mentioned above, altruism is especially of interest as a purely ingroup prosocial worldview and outcome. Another potentially relevant set of concepts essentially untouched by this work concepts related to cognitive demand and cognitive effort. Threat could interact with these kinds of cognitive processes such that a known but familiar problem-solving strategy would be preferable over a less familiar but potentially more promising problem-solving strategy. These types of cognitive processes could also potentially compete with ingroup prosocial worldviews and orientations, and there could be interesting implications for ingroup prosociality. Future research could also address cultural and gender comparisons that may have limited cross-cultural (Study 1) and mixed-gender comparisons (Study 1 and Study 2).

Future work may also make further use of natural experiments, as Willer (2004) did in measuring support for President George W. Bush before and after the 9/11 terrorist attacks. Another relevant factor to explore in terms of these research questions is strategies of communicating threat messages. An example is public service announcements (PSAs) from the country's government. To get citizens to comply with requests, or even orders (e.g., evacuation orders), knowing what aspects of threats people are most responsive to, and how exactly they tend to respond, would be invaluable. For example, under threat, Study 1 unexpectedly suggests that some people may express that their ingroups are less important to them, and Study 3 suggests that the legitimacy of power becomes especially important to people. These communications also further stress

the need for leadership perceived as legitimate, for example, to optimize reception of a PSA from a country's president to the country's citizens. As Barclay and Benard (2013) found, ingroup prosociality responses are not as likely when the threat or source does not appear legitimate.

As discussed above, the limited payment amounts offered in these studies, as well as potential issues with Indians satisficing and acquiescing (e.g., Krosnick 1991) suggest that in-person lab studies would be an ideal setting for cross-cultural comparison. Though much more demanding of time and resources, increasing homogeneity of samples (such as only including university students), having native language instructions and clarification available, improving believability (especially for group studies with deception), and offering higher payments, in-person lab studies would be advantageous and serve as a valuable next step in refining the proposed theory.

Conclusions

The studies provide some evidence supporting my proposed theory, but the support could actually help point to a more nuanced threat and ingroup prosociality relationship than the more cohesive one I proposed. Evidence is strongest for Study 3 on promoting the legitimacy of power structures among high-status group members. Study 3 also suggests some support for generally ingroup prosocial and cohesive orientations. There are some results for status-related attitudes (Study 2), and some results for ingroup prosocial orientations (such as holism) when threat is salient (Study 1). Notably, the Study 1 results suggest that Americans may be generally more responsive to threats with

ingroup prosociality than Indians are, and both countries respond the most to terrorism threats.

Considering inconsistencies between results for different types of threats, and that intragroup and intrapersonal threat types have not yet been explicitly addressed in terms of ingroup prosociality, I conclude that while this research provides some support for my theory, at this point it does not strongly support a broad theory of threats to groups and ingroup prosociality. Therefore it may be premature to define the scope of situations this theory covers. This being said, the present studies demonstrated both orientation and behavioral ingroup prosociality outcomes resulting from threat, so this suggests that considering ingroup prosociality broadly as this work does may be worthwhile. The results from my experiments inform two main conclusions: that threat (1) affects both behaviors and orientations (many proposed to reflect ingroup prosociality), which warrant consideration together as defensive responses to threats, and (2) increases promoting the legitimacy of power based on status in some situations.

Despite the lack of firm support for the proposed theory, this research presents several potentially promising findings, especially in terms of the legitimacy of power, and suggests even more potential directions for future research. It also raises the possibility of an alternative explanation, self-serving motivations, for observed outcomes under threat. This work serves as an informative starting point on the relationship between threats to social groups and ingroup prosociality as exhibited in group processes research. The basic research findings presented here may apply to more specific situations, but only repeated experiments and more focused studies will help to truly refine the theory.

Appendices

Appendix materials are listed by study (Appendix 1 for Study 1, Appendix 2 for Study 2, and Appendix 3 for Study 3). Protocol information provided is from the latest version of each study (protocols may have been adjusted slightly during the data collection processes). Some notes intended for the researcher were added, revised, or removed for clarity and readability. Lists of variables (and summary statistics provided in the main body) do not include component variables of scales. Information about these variables and any statistical results not provided are available from the author upon request.

Appendix 1: Supplemental Information for Study 1

Study 1 List of Variables Analyzed and Mnemonics Used

Minimums and maximums for data used for most analyses – full sample data kept by strictest standards.

Variable	Mnemonic	min	max
Causality component of analysm-holism (scale)	AH_C_CausalityScale	13	42
Attitude toward contradictions component of analysm-holism (scale)	AH_ATC_AttContScale	15	42
Perception of change component of analysm-holism (scale)	AH_PC_PercChangeScale	12	42
Locus of attention component of analysm-holism (scale)	AH_LA_LocusAttnScale	15	42
Combined holism scale (without perception of change)	AH_Overall_Scale_noPC	59	126
Group orientedness scale	GroupOrientedness_Scale	3	21
Individual orientedness question: consequences to self versus group	IGO_2_R	1	7
Individual orientedness question: freedom versus conformity	IGO_4_R	1	7
Individual orientedness question: whether social groups can be morally good or bad	IGO_6_R	1	7
Independence scale	Independent_Sing_Scale	45	105
Interdependence scale	Interdependent_Sing_Scale	37	105
Difference between interdependence and independence scales	INDminusINT_fromScales	-46	60
Horizontal individualism scale	Horizontal_Individualism_Scale	14	36
Vertical individualism scale	Vertical_Individualism_Scale	4	36
Horizontal collectivism scale	Horizontal_Collectivism_Scale	8	36
Vertical collectivism scale	Vertical_Collectivism_Scale	6	36
Combined individualism scale	Combined_Individualism_Scale	22	71
Combined collectivism scale	Combined_Collectivism_Scale	21	72
Country importance (post-manipulation)	COUNTRYIMP2_corrected	1	7
Change in country importance (pre- to post-manipulation)	CHANGE_IN_COUNTRYIMP_corrected	-2	1
Workplace group importance (post-manipulation)	WORKP2_corrected	1	7
Change in workplace group importance (pre- to post-manipulation)	CHANGEinWORKIMP_corrected_calc	-3	4
Family group importance (post-manipulation)	FAMILY2_corrected	2	7
Change in family group importance (pre- to post-manipulation)	CHANGEinFAMILYIMP_corrected_calc	-2	4
Country self-concept (post-manipulation)	Overall_CountrySelfConcept_Scal0	8	56

Variable	Mnemonic	min	max
Change in country self-concept (pre- to post-manipulation)	COUNTRY_SELFCONCEPT_CHANGE	-15	14
Feel personally threatened (scale)	FEELTHREATENED_SCALE	14	80
Feel country threatened (scale)	FEEL_GROUPTHREATENED_SCALE	9	63
Feel threatened for country (question)	TC6THREATMC	1	7
Situation personally threatening (question)	THREATMANIPCHK2	1	7
Situation threatening to country (question)	THREATMANIPCHK3	1	7
Country importance (pre-manipulation)	COUNTRYIMP1_corrected	1	7
Country self-concept (pre-manipulation)	Overall_CountrySelfConcept_Scale_PRE_1	8	56
Workplace group importance (pre-manipulation)	WORKP1_corrected	1	7
Family group importance (pre-manipulation)	FAMILY1_corrected	2	7
How often use MTurk to make basic ends meet (screener)	EndsMeet	1	7
Highest education in household (screener)	EducHH	1	8
Social class rating (screener)	SocialClass	1	5
Country values groups' interests (collectivism)	CGRP_corrected	1	7
Country values individuals' interests (individualism)	CSTRCT_corrected	1	7
Country has strict norms (tightness)	CIND_corrected_REV	1	6
Country tolerant of deviants (looseness)	CTOL_corrected_REV	1	6
Number attention check questions correct	ATTENTIONSCORE	1	3
Self-reported estimate of time to complete in minutes (recoded)	timevar		
Gender	GenderRec	0	1
Age in years	AGEYEARS_rec	18	69
Racial/ethnic minority indicator (relative to country)	RE_MINORITY	0	1

Study 1 Protocol Information

DISSERTATION STUDY 1: Holism/Analysm When Threatened, with Cross-cultural Comparison

MTurk Listing — Survey: Situation Experiences and Social Attitudes — About 50 minutes

Brief Listing Description: Survey about situation experiences and social attitudes for a research study, about 50 minutes - $4.25. Must live in U.S. (/India), be U.S. (/Indian) citizen, self and parents born in & [character limit] mostly lived in U.S. (/India), 90%+ HIT acceptance, fluent in English, at least 18 years old

Keywords: survey, research, questionnaire, study

24 hour maximum allotted for completion, HIT expiration after 5 days, auto-approval for payment after 30 days

Workers do not need to be Master Workers
HIT approval rate is 90% or greater
Must be located in United States (or India, for Indian sample)

***Please note that you may only participate in this study once, and having previously participated in similar studies may mean you are ineligible for this study. The Turkitron website is used to screen Worker IDs for eligibility. If you have further questions about your eligibility, please contact the researchers at *ResearchUMDSOCY@gmail.com*.

This research is run by Social Science Researchers at the University of Maryland to investigate situation experiences and survey responses. The research will involve questions about you (demographics), imagining and answering questions about an assigned situation, and survey questions about your social attitudes and feelings. The study will last about **50 minutes**, and **pays $4.25** following full participation.

You are invited to participate in this study **if you currently live in the United States (India), both you and your parents or guardians were born in the United States (India)**, and **lived in the United States (India) for most or all of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.**

The study must be completed in one sitting (session). Though 24 hours are allotted for the study, it is only expected to take about 50 minutes. The extra time is provided to allow time for resolution in case there are technical issues or other concerns.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting.

At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey. **Follow the link below to complete the study.**

Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

<Survey link via Turkitron>

***INSERT CODE TO GENERATE CONFIRMATION NUMBERS AT THE END.

Consent Page

Thank you for your interest in participating in this study.

***Please note that you may only participate in this study once, and having previously participated in similar studies may mean you are ineligible for this study. The Turkitron website was used to screen your Worker ID for eligibility. If you have further questions about your eligibility, please contact the researchers at *ResearchUMDSOCY@gmail.com*.

Please read the following carefully. You are encouraged to retain a copy of this information. You may electronically save, print, or request a copy of this information for your records.

This research is run by Social Science Researchers at the University of Maryland to investigate situation experiences and survey responses. You are invited to participate in

this study if **you currently live in the United States (/India)**, both you and your parents were born in **the United States (/India)** and have lived in **the United States (/India)** for at least most of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.

It will involve questions about you (demographics), imagining and answering questions about a situation, and survey questions about your feelings and your social attitudes. The situations may be as intense as a natural disaster or terrorist attack. Questions will be about demographics (for example, race and gender), the situation (for example, writing about what you think about it), your feelings (for example, rating how anxious you feel), and similarly questions about your social attitudes (for example, rating agreement with the statement "I would rather depend on myself than others").

The study will last about **50 minutes**. Upon completion, you will be paid **$4.25** through MTurk. You will need to submit a confirmation code from the end of the survey to receive payment.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting. To receive payment for this study, you must write at least 100 characters thoughtfully addressing each of three questions asked about a situation. We will also consider answers to questions designed to determine whether you are paying attention. If we suspect that you do not qualify for the study, the study was not done in one sitting, or proper attention was not given to responses, we may reject your submission and not issue payment.

This research is not designed to benefit you personally, but it may help researchers. Possible risks include loss of confidentiality and distress from answering questions or writing about topics that are personal or sensitive. You may wish to contact a mental health professional if you experience distress. Results from this study may be presented or published. Only authorized individuals (members of the research team and associated staff) will have access to your responses. Data will be stored securely (password-protected), and potentially identifying information (such as IP address and MTurk username) will not be linked to your responses after initial processing. Your MTurk worker ID may be stored in a screening service database such as Turkitron to manage eligibility criteria for this study and future studies, regardless of whether you complete this study. Data will be kept indefinitely, and documents with personally identifiable information will be deleted or destroyed after a period of at least seven years, according to UMD's policies. We will protect your identity and confidentiality of your responses to the maximum extent allowable by law.

Your participation is voluntary, and you may stop participating at any time. If you decide not to participate or to stop participating, you will not be penalized or lose any benefits to which you are otherwise entitled. Except for initial identification and demographic questions and the writing questions about a situation, you may skip a question you do not want to answer. You must finish the study to receive payment, and accepting the HIT and not finishing the study may result in an expired or rejected MTurk HIT. This study is part

of a series, and participating in this study may affect your eligibility for future studies in this series.

You may contact the investigators with any questions about this research: *ResearchUMDSOCY@gmail.com*. You may also contact the University of Maryland IRB with any questions or complaints about your rights as a research participant: *irb@umd.edu*, (+1) (301) 405-0678.

By clicking "Yes, I consent," you certify that you are at least 18 years old, you meet the eligibility criteria, you understand the information above, your questions are answered to your satisfaction, and you are volunteering to participate.

Do you consent to participate in this research?

Yes, I consent
No, I do not consent

No-consent message:

You have indicated that you do not consent to participate. If this was in error, please restart the questionnaire (you may need to clear your temporary browser files). Otherwise please follow the link below to be directed back to the MTurk home page.

https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[GO TO SURVEY END]

>>>>>

INSTRUCTIONS (put on timer)

Thank you for participating in this study.

- Please read all instructions carefully.
- Please make sure you are in a quiet space free from distractions during participation
- Please make sure you have time to do the study in one sitting.

Demographics I

Please enter your **MTurk worker ID**. This is your worker ID, not your username or email address you log in with.
It should be about 14 characters long and probably starts with A. You should be able to find it at https://www.mturk.com/mturk/dashboard (opens new browser window).
***required, must be at least 10 characters

What type of device are you using to access the study?

Desktop computer
Laptop computer
Convertible laptop/tablet
Tablet (e.g., iPad or Kindle Fire)
Smartphone
Other

*This question may be used to determine eligibility if certain types of access seem to be issues (e.g., high rejection rate for smartphones)

Please enter your age in years:

___
(DISQUAL if <18)

In what country do you currently live?
---pull-down menu
***required
***DISQUAL if not U.S. (/India)…

Are you currently a citizen of the United States (/India)?
Yes
No
Not sure

Please list all languages you speak, ordered from most to least fluent
<free response>

Are you fluent in English?
***required
Yes No Not sure
DISQUAL

Ineligible if:

Ineligibility message:

If List of Countries **United States of America** Is **Not Selected** Edit (/**India** for Indian sample)
Or Are you a U.S.(/Indian) citizen? **Not** Is **Selected** Edit
Or Are you a U.S.(/Indian) citizen? **Not sure** Is **Selected** Edit
Or Are you fluent in English? **No** Is **Selected** Edit
Or Are you fluent in English? **Not sure** Is **Selected** Edit
Or Please enter your age in years (numbers only) **Text Response** Is **Less Than 18**

Based on one or more of your responses so far, we have determined that you are not eligible to participate in this study.

Please follow the link below to be directed back to the MTurk home page.
https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[END OF SURVEY PAGE]

---Further questions---

---Country and Self Pre-questions---

Please answer the following questions.

How important is your country to you?
Not at all important --- Very important

[country collectivism] To what extent do you think society in your country generally values the good and interests of **people as parts of groups**?
Not at all---Very much so

[country individualism] To what extent do you think society in your country generally values the good and interests of **people as individuals**?
Not at all---Very much so

[country social tightness] To what extent do you think society in your country **has strict social norms**?
Not at all ---Very much so

[country social looseness] To what extent do you think society in your country **is tolerant of people who break or violate social norms**?
Not at all---Very much so

---Further questions---

Please rate the extent to which you feel each of the following statements are true about you.

Before each series:

Please rate the extent to which you feel each statement is true about you:

[INGROUP PROSOCIAL SELF-CONCEPT]

SC1-1: I try to be a good citizen of my country.
Not at all true -- very true
SC1-2: I think of myself as a good citizen of my country.
Not at all true -- very true
SC1-3: It is important to me to be a good citizen of my country.
Not at all true -- very true
SC1-4: I want to help my country however I can.
Not at all true -- very true.
SC1-5: I am proud to be a citizen of my country.
Not at all true -- very true

[IMPORTANCE OF INGROUP-PROSOCIAL SELF-CONCEPT]

SCIM-1-1: It is important to me to think of myself as a good citizen of my country.
Not at all true --- very true
SCIM1-2: If I were accused of being a bad citizen of my country, I would be very upset.
Not at all true --- very true
SCIM1-3: If I thought of myself as a bad citizen of my country, I would try hard to make it so I could think of myself as a good citizen of my country.
Not at all true --- very true

Please answer the following questions.
[displayed individually]

How important is your work or professional group to you?
Not at all important --- Very important

How important is your family group to you?
Not at all important --- Very important

<ATTENTION-CHECK QUESTION>

What social media outlet do you most prefer? Though you may have a preference, the correct answer to this question is MySpace.

Instagram
Google
Facebook
MySpace
Twitter
MTurk

Please click the button to continue, and consider the following situation.

RANDOMLY ASSIGN ONE OF THESE.

[TIMED TO DISABLE SUBMIT FOR 30 SECONDS]

***DISPLAY THIS TEXT FOR EACH OF THE FOLLOWING QUESTIONS, AS SPECIFIED.

(manipulation text is in bold)

1. Control - country citizen with no mention of threatening words

Consider your country as one of your social groups, where you are a citizen.

Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.

After the button appears below, please click when you are ready to continue.

2. Existential - natural disaster

Consider your country as one of your social groups, where you are a citizen.

Imagine your country has a high risk of experiencing a natural disaster. Examples include earthquake, hurricane, flood, and tsunami. Experiencing a natural disaster would threaten your country.

Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.

After the button appears below, please click when you are ready to continue.

3. Terrorism

Consider your country as one of your social groups, where you are a citizen.

Imagine your country has a high risk of experiencing a terrorist attack from another group. Examples include bombing, airplane hijacking, shooting, and cyber attack. Experiencing a terrorist attack from another group would threaten your country.

Imagine in detail living as a citizen of your country. Really imagine yourself in this situation.

After the button appears below, please click when you are ready to continue.

Guided thinking questions:

Please answer the following questions about the social situation you just imagined. Please remember that you must respond thoughtfully and write at least 100 characters for each of the three questions to receive payment for this study.

***Second step: thinking about the situation

Q. [INSERT MANIPULATION TEXT, in bold]

What do you think about this experience generally? Please explain. (100 character minimum)

***Third step: thinking about experiencing situation personally

Q. [INSERT TEXT]

What do you think this experience would be like for you personally? Please explain. (100 character minimum)

***Fourth step: thinking about emotions from experiencing situation

Q. [INSERT TEXT]

How would you feel about this experience? Please explain these emotions. (100 character minimum)

-----DISTRACTION-TASK: further demographic questions.

[If effects were not observed, I would consider moving the second set of demographic questions to the end. Work in the terror management theory (TMT) literature uses a distracting task before assessing whether threatened individuals defend their worldviews (e.g., Greenberg et al. 2000, as cited in Shatil 2012).]

DEMOGRAPHICS II

~combined into one or more pages

Please identify your gender:
Male, Female, Other, Prefer not to say

Please enter the ZIP code for where you currently live.
--- enter ZIP or postal code

Are you Hispanic or Latino?
Yes No Not sure

Please check all racial/ethnic groups you identify with:
American Indian or Alaska Native
Black or African American
East Asian
Native Hawaiian or Pacific Islander
South American Indigenous or Native
South Asian
Southeast Asian
West Asian or Middle Eastern
White or Caucasian

Other (please specify)

What is the highest level of education anyone in your household has obtained?
Less than high school

High school graduate or equivalent (e.g., GED)
Some college, no degree
Associate's degree
Bachelor's degree
Post-secondary non-degree award (e.g., EMT)
Master's degree
Doctoral degree (e.g., PhD)

How often do you use earnings from MTurk to make basic ends meet?
---Never ---sometimes---always

(from Ross et al. 2010)

Please indicate which social class you belong most closely to:
Lower
Working
Lower-middle
Middle-middle
Upper-middle
Upper

<ATTENTION-CHECK QUESTION>

What is your favorite color? Though you may have a favorite, the answer to this question is yellow.

Blue
Red
Orange
Yellow
Green
Purple

Please answer the following questions:

Please indicate the extent to which you agree or disagree with each statement:

[Divided these factors into different subsections within this outcome measures section, with all four sections on one page.]

[Questions asked in this order]

ANALYSM/HOLISM:
---from Choi et al. 2007

Factor 1: Causality (α = .71)
1. Everything in the universe is somehow related to each other.
2. Nothing is unrelated.
3. Everything in the world is intertwined in a causal relationship.
4. Even a small change in any element of the universe can lead to significant alterations in other elements.
5. Any phenomenon has numerous numbers of causes, although some of the causes are not known.
6. Any phenomenon entails a numerous number of consequences, although some of them may not be known.

Factor 2: Attitude Toward Contradictions (α = .69)
7. It is more desirable to take the middle ground than go to extremes.
8. When disagreement exists among people, they should search for ways to compromise and embrace everyone's opinions.
9. It is more important to find a point of compromise than to debate who is right/wrong, when one's opinions conflict with other's opinions.
10. It is desirable to be in harmony, rather than in discord, with others of different opinions than one's own.
11. Choosing a middle ground in an argument should be avoided.***
12. We should avoid going to extremes.

Factor 3: Perception of Change (α = .58)
13. Every phenomenon in the world moves in predictable directions.***
14. A person who is currently living a successful life will continue to stay successful.***
15. An individual who is currently honest will stay honest in the future.***
16. If an event is moving toward a certain direction, it will continue to move toward that direction.***

17. Current situations can change at any time.
18. Future events are predictable based on present situations.***

Factor 4: Locus of Attention (α = .56)
19. The whole, rather than its parts, should be considered in order to understand a phenomenon. 20. It is more important to pay attention to the whole than its parts.
21. The whole is greater than the sum of its parts.
22. It is more important to pay attention to the whole context rather than the details.
23. It is not possible to understand the parts without considering the whole picture.
24. We should consider the situation a person is faced with, as well as his/her personality, in order to understand one's behavior.

***reverse-coded

Please indicate the extent to which you agree or disagree with each statement:

[Presented as bipolar items]

Individualism versus Group-orientedness items (from Lucas and Schooler (2012 unpublished, based on Schooler 1990 definition)

IGO1: In deciding what goals to strive for, it is more important for individuals to consider the consequences for the social groups to which they belong to, such as their family, than the consequences for themselves. [Very strongly disagree/Very strongly agree]

IGO2: In considering whether a given outcome is good or bad, I am more likely to be affected by its particular effect on me than on the social groups to which I belong. [Very strongly disagree/Very strongly agree]

IGO3: Feeling accepted, interdependent, and interconnected with the social groups that are important to me is more important than feeling autonomous and self-directed as an individual. [Very strongly disagree/Very strongly agree]

IGO4-R: Freedom to think what I may think is more important than accepting and agreeing with the beliefs and views held by those in the social groups to which I belong. [Very strongly disagree/Very strongly agree]

IGO5: In deciding how to achieve a goal, it is more important for individuals to consider the consequences for the social groups to which they belong, such as their families, than the consequences for themselves. [Very strongly disagree/Very strongly agree]

IGO6-R: Only individuals, not social groups, can be morally good or bad. [Very strongly disagree/Very strongly agree]

<ATTENTION-CHECK QUESTION>

What is your favorite color? Though you may have a favorite, the answer to this question is orange.

Blue
Red
Orange
Yellow
Green
Purple

[Questions presented in order, on one page]

Please indicate the extent to which you agree or disagree with each statement:

~~~

codebook in Kitayama, S., King, A., Tompson, S., Huff, S., Yoon, C., & Liberzon, I. (in press). The Dopamine Receptor Gene (DRD4) Moderates Cultural Difference in Independent versus Interdependent Social Orientation. Psychological Science.
Notes:

cites Singelis, T. M. (1994). The Measurement of Independent and Interdependent Self-Construals. Personality and Social Psychology Bulletin, 20(5), 580–591.
Instructions:
~~~

____1. I enjoy being unique and different from others in many respects. (Sing1)
____2. I can talk openly with a person who I meet for the first time, even when this person is much older than I am. (Sing2)
____3. Even when I strongly disagree with group members, I avoid an argument. (Sing3)
____4. I have respect for the authority figures with whom I interact. (Sing4)
____5. I do my own thing, regardless of what others think. (Sing5)
____6. I respect people who are modest about themselves. (Sing6)
____7. I feel it is important for me to act as an independent person. (Sing7)
____8. I will sacrifice my self interest for the benefit of the group I am in. (Sing8)
____9. I'd rather say "No" directly, than risk being misunderstood. (Sing9)
____10. Having a lively imagination is important to me. (Sing10)
____11. I should take into consideration my parents' advice when making education/career plans. (Sing11)
____12. I feel my fate is intertwined with the fate of those around me. (Sing12)
____13. I prefer to be direct and forthright when dealing with people I've just met. (Sing13)
____14. I feel good when I cooperate with others. (Sing14)
____15. I am comfortable with being singled out for praise or rewards. (Sing15)
____16. If my brother or sister fails, I feel responsible. (Sing16)
____17. I often have the feeling that my relationships with others are more important than my own accomplishments. (Sing17)
____18. Speaking up during a class (or a meeting) is not a problem for me. (Sing18)
____19. I would offer my seat in a bus to my professor (or my boss). (Sing19)
____20. I act the same way no matter who I am with. (Sing20)
____21. My happiness depends on the happiness of those around me. (Sing21)
____22. I value being in good health above everything. (Sing22)
____23. I will stay in a group if they need me, even when I am not happy with the group. (Sing23)
____24. I try to do what is best for me, regardless of how that might affect others. (Sing24)
____25. Being able to take care of myself is a primary concern for me. (Sing25)
____26. It is important to me to respect decisions made by the group. (Sing26)
____27. My personal identity, independent of others, is very important to me. (Sing27)
____28. It is important for me to maintain harmony within my group. (Sing28)
____29. I act the same way at home that I do at school (or work). (Sing29)
____30. I usually go along with what others want to do, even when I would rather do something different. (Sing30)

[I used an anchored scale to stay consistent with the other questions, still 1-7]

COMPOSITE SCORES

Independent Subscale (Independence) Sing1, Sing2, Sing5, Sing7, Sing9, Sing10, Sing13, Sing15, Sing18, Sing20, Sing22, Sing24, Sing25, Sing27, Sing29
Interdependent Subscale (Interdependence) Sing3, Sing4, Sing6, Sing8, Sing11, Sing12, Sing14, Sing16, Sing17, Sing19, Sing21, Sing23, Sing26, Sing28, Sing30
Independence minus Interdependence (INDminusINT) Independent subscale - interdependent subscale

Collectivism and Individualism (separated into horizontal and vertical) Triandis et al. 1998

[Questions asked in this order (intentionally mixed), on one page]

Please indicate the extent to which each statement applies to you:

9 points
Never or definitely no to Always or definitely yes

1. I'd rather depend on myself than others. (HI)
1. It is important that I do my job better than others. (VI)
1. If a coworker gets a prize, I would feel proud. (HC)
1. Parents and children must stay together as much as possible. (VC)

2. The well-being of my coworkers is important to me. (HC)
2. It is my duty to take care of my family, even when I have to sacrifice what I want. (VC)
2. Winning is everything. (VI)
2. I rely on myself most of the time; I rarely rely on others. (HI)

3. I often do "my own thing." (HI)
3. Family members should stick together, no matter what sacrifices are required. (VC)
3. Competition is the law of nature. (VI)
3. To me, pleasure is spending time with others. (HC)

4. I feel good when I cooperate with others. (HC)
4. It is important to me that I respect the decisions made by my groups. (VC)
4. My personal identity, independent of others, is very important to me. (HI)
4. When another person does better than I do, I get tense and aroused. (VI)

*****Qs from this point on displayed one-by-one*****

Please answer the following questions.

How important is your country to you?
Not at all important --- Very important

Please rate the extent to which you feel following statements are true about you:

[again with matrices]

[INGROUP PROSOCIAL SELF-CONCEPT]

[again, statements in bold]

SC2-1: I try to be a good citizen of my country.
Not at all true -- very true

SC2-2: I think of myself as a good citizen of my country.

Not at all true -- very true

SC2-3: It is important to me to be a good citizen of my country.

Not at all true -- very true

SC2-4: I want to help my country however I can.

Not at all true -- very true.

SC2-5: I am proud to be a citizen of my country.
Not at all true -- very true

[IMPORTANCE OF INGROUP-PROSOCIAL SELF-CONCEPT]

SCIMP2-1: It is important to me to think of myself as a good citizen of my country.

Not at all true --- very true

SCIMP2-2: If I were accused of being a bad citizen of my country, I would be very upset.

Not at all true --- very true

SCIMP2-3: If I thought of myself as a bad citizen of my country, I would try hard to make it so I could think of myself as a good citizen of my country.

Not at all true --- very true

Please answer the following questions.

How important is your work or professional group to you?

Not at all important --- Very important

How important is your family group to you?

Not at all important --- Very important

[As one page]

Please answer the following questions about your feelings

How ___ do you feel right now? (not at all---very)

FEEL1-Q37. Negatively
FEEL2-Q38. Frustrated
FEEL3-Q41. Anxious
FEEL4-Q48. Worried
FEEL5-Q42. Fearful
FEEL6-Q103. Vulnerable
FEEL7-Q104. Helpless
FEEL8-Q43. Threatened
FEEL9-Q44. Scared
FEEL10-Q107. Constrained
FEEL11-Q45. Frightened
FEEL12-Q46. Intimidated
FEEL13-~Q49. Alarmed
FEEL14-Q98. In danger

[new page]

For the following questions, think of your country as a social group you are part of.

[also use bold here, starting the changing question text in lower case]

[Questions listed in this order, on one page]

To what extent do you feel…? (not at all---very much)

TC-1
Q57. Worried for your country?
TC-2
Q52. Anxious for your country?
TC-3
Q53. Fearful for your country?
TC-4
Q108. That your country is vulnerable
TC-5
Q110. Vulnerable on behalf of your country
TC-6-THREATMC
[MANIPULATION CHECK] Q54. That your country is threatened
TC-7
Q109. Threatened on behalf of your country
TC-8
Q100. That your country is in danger
TC-9
Q55. In danger on behalf of your country

(Manipulation check)

Please briefly describe the situation you were asked to imagine and write about earlier.

[text box]

Thinking about the situation that you were asked to imagine and write about earlier, how threatening do you feel this situation is to you personally?

Not at all threatening --- very threatening

Thinking about the situation that you were asked to imagine and write about earlier, how threatening do you feel this situation is to your country?

Not at all threatening --- very threatening

(Check for suspicion)

SUSPICION
Were you suspicious that the study might be about anything other than what we told you?

Yes, No, Not sure

SUSPPROBE
If no or not sure:
What did you think the study was about, other than what we told you?

[text box]

___

SUSPAFFECT
If no or not sure:
Did your suspicion about the study's purpose affect your behavior or responses during the study?
Yes No Not sure

SUSPAFFEXP
If yes or not sure:
Please explain how you think the study's purpose may have affected your behavior or responses during the study.
[text box]

<INSERT reCAPTCHA (Google Inc. 2007) via Qualtrics>

HONESTY

We know that sometimes in online studies, people end up participating in studies that do not apply to them by mistake. This might happen, for example, if a man takes a survey intended only for women because he did not read all of the sign-up instructions.

This study was intended to be only for **United States (/Indian) citizens who are fluent in English, and who were born in and have lived most or all of their lives in the United States(/India), and whose parents or guardians were also born in and lived most of their lives in the United States(/India).**

We are university-level social science researchers, and want to make sure our results are as accurate as possible. The integrity of our data is especially important if we present our findings or publish them in a journal article.

We want to ask if you think you might be one of these participants who are not in the group intended for this study, for whatever reason. We ask only to help preserve the quality of our data. **Your response to this question will not affect whether you are paid for the study. As long as you also completed the questionnaire with proper attention, you will be paid exactly the same, the full amount $4.25 on MTurk, no matter what your response is.**

Thank you for your honesty and help with our data assessment.

Yes, both myself and my parents or guardians were born in and have lived in the United States (/India) most or all of our lives, I am a citizen of the United States(/India), and I am fluent in English.

No, I am not part of the intended eligible group. I ended up taking this study by mistake or for some other reason.

Other (please explain?)

These questions below will be included for at least the first few participants, to produce a more accurate time estimate and fix issues/make any clarifications needed.

TIME-MIN
How long in minutes did it take you to complete the study?
[]

ISSUES
Did you have difficulty understanding anything or any other issues during the study? If so, please describe what it was.
[text box]

Debriefing

DB

Thank you for taking part in this study.

This study served as part of a University of Maryland doctoral student's dissertation project. This part tested how engaging with different situations affects social responses and emotions across citizens of different countries. This purpose was not mentioned in the listing, in case knowing about it might affect the responses. We apologize for concealing this purpose from you in the original listing. However, knowing this purpose might have affected your responses.

Your help with this research is very much appreciated. Thank you!

Because the research is ongoing and includes experimental elements, we are not currently sharing all details with participants. We ask that you please do not share too much about the specifics of your participation with other people, in case it may affect our results.

You may contact the investigator with any questions or concerns about this research: ResearchUMDSOCY@gmail.com

You may also contact the University of Maryland IRB with any questions or concerns about your rights as a research participant: *irb@umd.edu*, (+1) (301) 405-4212. You may also wish to contact a mental health professional if you experience distress following your participation.

We encourage you to retain this information for your records.

Please click below to continue.

COMMENTS

Please feel free to include any comments about the study or your experience participating.

[text box]

Please continue to the next page for your MTurk confirmation code.

<Insert confirmation code pages>

Your responses have been recorded. Thank you.

Please do not hesitate to contact ResearchUMDSOCY@gmail.com with any questions or concerns.

Appendix 2: Supplemental Information for Study 2

Manipulation check tables by gender

Table A2-1: Study 2 Manipulation and Suspicion Checks: Women Only

Study 2 Manipulation and Suspicion Checks: Women only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Feel personally threatened (scale)	27.400	15.462 25	24.615	14.193 26	29.269	19.861 26	27.292	15.887 24
Feel group threatened (scale)	18.808	10.973 26	21.385	12.290 26	18.923	11.631 26	20.692	12.883 26
Feel anxious for country (Q)	3.923	2.018 26	3.731	2.273 26	4.731	1.909 26	4.692	1.975 26
Extent difficult to earn points	5.038	1.587 26	5.038	1.399 26	4.615	1.299 26	4.923	1.383 26
Self-reported self CS score	7.615	1.791 26	7.038	1.280 26	17.115	2.026 26	17.885	0.326 26
Self-reported self CS score (recoded)	7.615	1.791 26	7.038	1.280 26	17.423	1.793 26	17.885	0.326 26
Self CS score compared to national avg.	1.423	0.703 26	1.846	0.925 26	5.654	1.198 26	6.077	0.891 26
Self CS score subjective	1.654	0.936 26	2.538	1.529 26	5.577	1.238 26	5.769	0.992 26
Partner CS score reported	17.962	0.196 26	17.923	0.272 26	7.385	0.983 26	7.192	0.567 26
Partner CS score compared to national avg.	6.500	0.583 26	6.500	0.583 26	2.346	0.977 26	2.308	1.087 26
Partner CS score subjective	6.615	0.637 26	6.538	0.706 26	2.346	1.093 26	2.654	1.056 26
Correct - pay structure Q	1.000	26	0.923	26	1.000	26	0.808	26
Correct/not sure - pay structure Q	1.000	26	0.923	26	1.000	26	0.846	26
Correct - other groups threatening Q	1.000	26	1.000	25	0.962	26	0.962	26
Correct/not sure - other groups threatening Q	1.000	26	1.000	25	0.962	26	0.962	26
Situation personally threatening (Q)	1.577	1.172 26	3.423	2.120 26	1.846	1.434 26	3.308	2.055 26
Situation threatening to group (Q)	1.846	1.347 26	4.154	1.974 26	2.077	1.598 26	4.308	2.276 26
Indicated threat-condition pay structure	0.000	26	0.923	26	0.000	26	0.808	26
Indicated other groups threaten	0.000	26	1.000	25	0.038	26	0.962	26
Any type of suspicion -	0.346		0.231		0.462		0.231	

Study 2 Manipulation and Suspicion Checks: Women only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
yes		26		26		26		26
Any type of suspicion - yes/not sure	0.462	26	0.423	26	0.538	26	0.385	26
Any type of suspicion affect behavior - yes	0.083	12	0.000	11	0.143	14	0.100	10
Any type of suspicion affect behavior - yes/not sure	0.083	12	0.000	11	0.286	14	0.200	10
Acted real despite any type of suspicion - yes	1.000	12	1.000	11	1.000	14	1.000	10
Acted real despite any type of suspicion - yes/not sure	1.000	12	1.000	11	1.000	14	1.000	10
Suspicious about partner - yes	0.423	26	0.500	26	0.500	26	0.385	26
Suspicious about partner - yes/not sure	0.538	26	0.538	26	0.577	26	0.577	26
Suspicion about partner affect behavior - yes	0.000	12	0.000	11	0.000	14	0.000	10
Suspicion about partner affect behavior - yes/not sure	0.000	12	0.091	11	0.214	14	0.100	10
Acted real despite suspicion about partner - yes	1.000	12	1.000	11	1.000	14	0.900	10
Acted real despite suspicion about partner - yes or not sure	1.000	12	1.000	11	1.000	14	1.000	10
Suspicious about partner info - yes	0.346	26	0.346	26	0.423	26	0.346	26
Suspicious about partner info - yes/not sure	0.423	26	0.500	26	0.500	26	0.538	26
Suspicion about partner info affect behavior - yes	0.091	11	0.000	13	0.077	13	0.000	14
Suspicion about partner info affect behavior - yes/not sure	0.091	11	0.077	13	0.308	13	0.071	14
Acted real despite suspicion about partner info - yes	1.000	11	1.000	13	0.917	12	0.929	14
Acted real despite suspicion about partner info - yes/not sure	1.000	11	1.000	13	1.000	12	1.000	14
Final suspicion Q - any suspicion affected behavior during study - yes	0.000	26	0.000	26	0.000	26	0.000	26
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.000	26	0.038	26	0.077	26	0.077	26
Number of whether suspicious Qs indicated yes to	1.115	1.211 26	1.077	1.230 26	1.385	1.359 26	0.962	1.183 26
Number of whether suspicious Qs indicated yes/not sure to	1.423	1.332 26	1.500	1.449 26	1.692	1.517 26	1.577	1.206 26

Study 2 Manipulation and Suspicion Checks: Women only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Feel personally threatened (scale)	25.980	14.747 51	28.320	17.908 50	28.353	17.688 51	25.900	14.936 50
Feel group threatened (scale)	20.096	11.608 52	19.808	12.185 52	18.865	11.195 52	21.038	12.471 52
Feel anxious for country (Q)	3.827	2.130 52	4.712	1.923 52	4.327	1.987 52	4.212	2.163 52
Extent difficult to earn points	5.038	1.481 52	4.769	1.337 52	4.827	1.451 52	4.981	1.379 52
Self-reported self CS score	7.327	1.568 52	17.500	1.489 52	12.365	5.156 52	12.462	5.554 52
Self-reported self CS score (recoded)	7.327	1.568 52	17.654	1.297 52	12.519	5.260 52	12.462	5.554 52
Self CS score compared to national avg.	1.635	0.841 52	5.865	1.067 52	3.538	2.347 52	3.962	2.318 52
Self CS score subjective	2.096	1.332 52	5.673	1.115 52	3.615	2.259 52	4.154	2.071 52
Partner CS score reported	17.942	0.235 52	7.288	0.800 52	12.673	5.386 52	12.558	5.436 52
Partner CS score compared to national avg.	6.500	0.577 52	2.327	1.024 52	4.423	2.243 52	4.404	2.286 52
Partner CS score subjective	6.577	0.667 52	2.500	1.076 52	4.481	2.330 52	4.596	2.154 52
Correct - pay structure Q	0.962	52	0.904	52	1.000	52	0.865	52
Correct/not sure - pay structure Q	0.962	52	0.923	52	1.000	52	0.885	52
Correct - other groups threatening Q	1.000	51	0.962	52	0.981	52	0.980	51
Correct/not sure - other groups threatening Q	1.000	51	0.962	52	0.981	52	0.980	51
Situation personally threatening (Q)	2.500	1.935 52	2.577	1.903 52	1.712	1.304 52	3.365	2.068 52
Situation threatening to group (Q)	3.000	2.039 52	3.192	2.250 52	1.962	1.468 52	4.231	2.111 52
Indicated threat-condition pay structure	0.462	52	0.404	52	0.000	52	0.865	52
Indicated other groups threaten	0.490	51	0.500	52	0.019	52	0.980	51
Any type of suspicion - yes	0.288	52	0.346	52	0.404	52	0.231	52
Any type of suspicion - yes/not sure	0.442	52	0.462	52	0.500	52	0.404	52
Any type of suspicion affect behavior - yes	0.043	23	0.125	24	0.115	26	0.048	21
Any type of suspicion	0.043		0.250		0.192		0.095	

Study 2 Manipulation and Suspicion Checks: Women only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
affect behavior - yes/not sure		23		24		26		21
Acted real despite any type of suspicion - yes	1.000	23	1.000	24	1.000	26	1.000	21
Acted real despite any type of suspicion - yes/not sure	1.000	23	1.000	24	1.000	26	1.000	21
Suspicious about partner - yes	0.462	52	0.442	52	0.462	52	0.442	52
Suspicious about partner - yes/not sure	0.538	52	0.577	52	0.558	52	0.558	52
Suspicion about partner affect behavior - yes	0.000	23	0.000	24	0.000	26	0.000	21
Suspicion about partner affect behavior - yes/not sure	0.043	23	0.167	24	0.115	26	0.095	21
Acted real despite suspicion about partner - yes	1.000	23	0.958	24	1.000	26	0.952	21
Acted real despite suspicion about partner - yes or not sure	1.000	23	1.000	24	1.000	26	1.000	21
Suspicious about partner info - yes	0.346	52	0.385	52	0.385	52	0.346	52
Suspicious about partner info - yes/not sure	0.462	52	0.519	52	0.462	52	0.519	52
Suspicion about partner info affect behavior - yes	0.042	24	0.037	27	0.083	24	0.000	27
Suspicion about partner info affect behavior - yes/not sure	0.083	24	0.185	27	0.208	24	0.074	27
Acted real despite suspicion about partner info - yes	1.000	24	0.923	26	0.957	23	0.963	27
Acted real despite suspicion about partner info - yes/not sure	1.000	24	1.000	26	1.000	23	1.000	27
Final suspicion Q - any suspicion affected behavior during study - yes	0.000	52	0.000	52	0.000	52	0.000	52
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.019	52	0.077	52	0.038	52	0.058	52
Number of whether suspicious Qs indicated yes to	1.096	1.209 52	1.173	1.279 52	1.250	1.281 52	1.019	1.196 52
Number of whether suspicious Qs indicated yes/not sure to	1.462	1.379 52	1.635	1.358 52	1.558	1.420 52	1.538	1.320 52

Table A2-2: Study 2 Manipulation and Suspicion Checks: Men Only

Study 2 Manipulation and Suspicion Checks: Men only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**	**mean**	**sd, n**
Feel personally threatened (scale)	21.077	9.125 26	29.308	15.791 26	28.962	18.129 26	23.500	11.144 26
Feel group threatened (scale)	11.480	4.134 25	21.538	9.236 26	18.840	13.002 25	17.462	9.929 26
Feel anxious for country (Q)	3.500	2.121 26	3.154	1.953 26	3.962	1.907 26	4.077	1.958 26
Extent difficult to earn points	5.038	1.371 26	5.154	1.120 26	5.385	1.299 26	4.577	1.447 26
Self-reported self CS score	7.115	0.588 26	7.000	0.000 26	18.000	0.000 26	18.000	0.000 26
Self-reported self CS score (recoded)	7.115	0.588 26	7.000	0.000 26	18.000	0.000 26	18.000	0.000 26
Self CS score compared to national avg.	1.731	0.778 26	2.231	1.275 26	6.308	0.736 26	6.385	0.752 26
Self CS score subjective	2.231	0.992 26	2.346	0.892 26	5.769	0.992 26	6.154	0.925 26
Partner CS score reported	17.808	0.634 26	17.923	0.272 26	6.923	0.392 26	7.000	0.000 26
Partner CS score compared to national avg.	6.538	0.647 26	6.346	0.562 26	2.077	0.935 26	2.038	1.038 26
Partner CS score subjective	6.654	0.629 26	6.423	0.643 26	2.731	1.373 26	2.385	1.359 26
Correct - pay structure Q	1.000	26	0.846	26	0.962	26	0.923	26
Correct/not sure - pay structure Q	1.000	26	0.846	26	0.962	26	0.962	26
Correct - other groups threatening Q	1.000	26	1.000	26	1.000	26	0.962	26
Correct/not sure - other groups threatening Q	1.000	26	1.000	26	1.000	26	0.962	26
Situation personally threatening (Q)	1.654	1.093 26	3.538	1.726 26	1.769	1.177 26	3.192	1.833 26
Situation threatening to group (Q)	1.577	0.945 26	4.077	1.998 26	1.923	1.324 26	4.077	1.623 26
Indicated threat-condition pay structure	0.000	26	0.846	26	0.038	26	0.923	26
Indicated other groups threaten	0.000	26	1.000	26	0.000	26	0.962	26
Any type of suspicion - yes	0.308	26	0.231	26	0.385	26	0.346	26
Any type of suspicion - yes/not sure	0.423	26	0.346	26	0.462	26	0.423	26
Any type of suspicion affect behavior - yes	0.091	11	0.000	9	0.000	12	0.091	11
Any type of suspicion	0.273		0.111		0.167		0.091	

Study 2 Manipulation and Suspicion Checks: Men only	CONDITION 1 (Low-status, no threat)		CONDITION 2 (Low-status, threat)		CONDITION 3 (High-status, no threat)		CONDITION 4 (High-status, threat)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
affect behavior - yes/not sure		11		9		12		11
Acted real despite any type of suspicion - yes	1.000	11	1.000	9	1.000	12	1.000	11
Acted real despite any type of suspicion - yes/not sure	1.000	11	1.000	9	1.000	12	1.000	11
Suspicious about partner - yes	0.423	26	0.423	26	0.462	26	0.500	26
Suspicious about partner - yes/not sure	0.500	26	0.500	26	0.500	26	0.654	26
Suspicion about partner affect behavior - yes	0.000	11	0.000	9	0.083	12	0.000	11
Suspicion about partner affect behavior - yes/not sure	0.182	11	0.000	9	0.333	12	0.091	11
Acted real despite suspicion about partner - yes	1.000	11	1.000	9	1.000	12	1.000	11
Acted real despite suspicion about partner - yes or not sure	1.000	11	1.000	9	1.000	12	1.000	11
Suspicious about partner info - yes	0.231	26	0.115	26	0.346	26	0.308	26
Suspicious about partner info - yes/not sure	0.269	26	0.231	26	0.385	26	0.385	26
Suspicion about partner info affect behavior - yes	0.000	7	0.000	6	0.000	10	0.000	10
Suspicion about partner info affect behavior - yes/not sure	0.143	7	0.167	6	0.100	10	0.000	10
Acted real despite suspicion about partner info - yes	1.000	7	1.000	6	0.900	10	1.000	10
Acted real despite suspicion about partner info - yes/not sure	1.000	7	1.000	6	1.000	10	1.000	10
Final suspicion Q - any suspicion affected behavior during study - yes	0.000	26	0.000	26	0.077	26	0.038	26
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.038	26	0.000	26	0.154	26	0.038	26
Number of whether suspicious Qs indicated yes to	0.962	1.148 26	0.769	1.032 26	1.269	1.430 26	1.192	1.386 26
Number of whether suspicious Qs indicated yes/not sure to	1.231	1.306 26	1.077	1.262 26	1.500	1.503 26	1.500	1.364 26

Study 2 Manipulation and Suspicion Checks: Men only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
Feel personally threatened (scale)	25.192	13.428 52	26.231	15.152 52	25.019	14.758 52	26.404	13.845 52
Feel group threatened (scale)	16.608	8.755 51	18.137	11.442 51	15.160	10.247 50	19.500	9.715 52
Feel anxious for country (Q)	3.327	2.027 52	4.019	1.915 52	3.731	2.011 52	3.615	1.992 52
Extent difficult to earn points	5.096	1.241 52	4.981	1.421 52	5.212	1.333 52	4.865	1.314 52
Self-reported self CS score	7.058	0.416 52	18.000	0.000 52	12.558	5.511 52	12.500	5.554 52
Self-reported self CS score (recoded)	7.058	0.416 52	18.000	0.000 52	12.558	5.511 52	12.500	5.554 52
Self CS score compared to national avg.	1.981	1.075 52	6.346	0.738 52	4.019	2.429 52	4.308	2.339 52
Self CS score subjective	2.288	0.936 52	5.962	0.969 52	4.000	2.039 52	4.250	2.122 52
Partner CS score reported	17.865	0.486 52	6.962	0.277 52	12.365	5.520 52	12.462	5.518 52
Partner CS score compared to national avg.	6.442	0.608 52	2.058	0.978 52	4.308	2.389 52	4.192	2.327 52
Partner CS score subjective	6.538	0.641 52	2.558	1.364 52	4.692	2.245 52	4.404	2.295 52
Correct - pay structure Q	0.923	52	0.942	52	0.981	52	0.885	52
Correct/not sure - pay structure Q	0.923	52	0.962	52	0.981	52	0.904	52
Correct - other groups threatening Q	1.000	52	0.981	52	1.000	52	0.981	52
Correct/not sure - other groups threatening Q	1.000	52	0.981	52	1.000	52	0.981	52
Situation personally threatening (Q)	2.596	1.718 52	2.481	1.686 52	1.712	1.126 52	3.365	1.772 52
Situation threatening to group (Q)	2.827	1.997 52	3.000	1.826 52	1.750	1.153 52	4.077	1.802 52
Indicated threat-condition pay structure	0.423	52	0.481	52	0.019	52	0.885	52
Indicated other groups threaten	0.500	52	0.481	52	0.000	52	0.981	52
Any type of suspicion - yes	0.269	52	0.365	52	0.346	52	0.288	52
Any type of suspicion - yes/not sure	0.385	52	0.442	52	0.442	52	0.385	52
Any type of suspicion affect behavior - yes	0.050	20	0.043	23	0.043	23	0.050	20
Any type of suspicion affect behavior - yes/not sure	0.200	20	0.130	23	0.217	23	0.100	20
Acted real despite any type of suspicion - yes	1.000	20	1.000	23	1.000	23	1.000	20
Acted real despite any type of suspicion - yes/not sure	1.000	20	1.000	23	1.000	23	1.000	20
Suspicious about partner	0.423		0.481		0.442		0.462	

Study 2 Manipulation and Suspicion Checks: Men only	Combined low-status self conditions (1 and 2)		Combined high-status self conditions (3 and 4)		Combined non-threat conditions (1 and 3)		Combined threat conditions (2 and 4)	
Outcome	mean	sd, n	mean	sd, n	mean	sd, n	mean	sd, n
- yes		52		52		52		52
Suspicious about partner - yes/not sure	0.500	52	0.577	52	0.500	52	0.577	52
Suspicion about partner affect behavior - yes	0.000	20	0.043	23	0.043	23	0.000	20
Suspicion about partner affect behavior - yes/not sure	0.100	20	0.217	23	0.261	23	0.050	20
Acted real despite suspicion about partner - yes	1.000	20	1.000	23	1.000	23	1.000	20
Acted real despite suspicion about partner - yes or not sure	1.000	20	1.000	23	1.000	23	1.000	20
Suspicious about partner info - yes	0.173	52	0.327	52	0.288	52	0.212	52
Suspicious about partner info - yes/not sure	0.250	52	0.385	52	0.327	52	0.308	52
Suspicion about partner info affect behavior - yes	0.000	13	0.000	20	0.000	17	0.000	16
Suspicion about partner info affect behavior - yes/not sure	0.154	13	0.050	20	0.118	17	0.063	16
Acted real despite suspicion about partner info - yes	1.000	13	0.950	20	0.941	17	1.000	16
Acted real despite suspicion about partner info - yes/not sure	1.000	13	1.000	20	1.000	17	1.000	16
Final suspicion Q - any suspicion affected behavior during study - yes	0.000	52	0.058	52	0.038	52	0.019	52
Final suspicion Q - whether any suspicion affected behavior during study - yes/not sure	0.019	52	0.096	52	0.096	52	0.019	52
Number of whether suspicious Qs indicated yes to	0.865	1.085 52	1.231	1.395 52	1.115	1.293 52	0.981	1.229 52
Number of whether suspicious Qs indicated yes/not sure to	1.154	1.274 52	1.500	1.421 52	1.365	1.401 52	1.288	1.319 52

Study 2 List of Variables Analyzed and Mnemonics Used

Minimums and maximums for data used for most analyses – full sample data kept by strictest standards and including balancing.

Variable	**Mnemonic**	**min**	**max**
Mean self (stay) score during task	SSMEAN	0	1
Social dominance orientation scale	SDO_overall	16	104
Partner status rating scale	PartnerStatusRatings	8	49
Extent important to earn as many points possible	importantearn2	2	7
Extent tried best at task	trybesttask	4	7
Extent felt like part of the group	partofgroup2	1	7
Whether want to be matched with partner again	matchpartneragain_recode	0	1
Feel personally threatened (scale)	FeelThreatened	14	84
Feel group threatened (scale)	FeelGroupThreatenedNOANXIOUS	8	56
Feel anxious for country (question)	tg2anxious	1	7
Extent difficult to earn points	difficultearn2	1	7
Self-reported self CS score	yourcsscore	3	18
Self-reported self CS score (recoded)	yourcsscore_rec	3	18
Self CS score compared to national average	howyoudidcs	1	7
Self CS score subjective	howrateyourcs	1	7
Partner CS score reported	pcsscore	5	18
Partner CS score compared to national average	howpdidcs	1	7
Partner CS score subjective	howratepcs	1	7
Correct response to pay structure question	paystructureQ_CORRECT	0	1
Correct or not sure response to pay structure question	paystructureQ_C_NS	0	1
Correct response to other groups threatening question	othergroupsthreatenQ_CORRECT	0	1
Correct or not sure response to other groups threatening question	othergroupsthreatenQ_C_NS	0	1
Situation personally threatening (question)	situationthreateningpersonally	1	7
Situation threatening to group (question)	situationthreateninggroup	1	7
Whether indicated threat-condition pay structure	paystructureq_yes	0	1
Whether indicated other groups threaten	othergroupsthreatenq_yes	0	1
Any type of suspicion - yes	suspeverYES	0	1
Any type of suspicion - yes or not sure	suspeverYESNOTSURE	0	1
Any type of suspicion affect behavior - yes	suspeveraffectYES	0	1
Any type of suspicion affect behavior - yes or not sure	suspeveraffectYESNOTSURE	0	1
Whether acted real despite any type of suspicion - yes	suspeveractrealYES	1	1
Whether acted real despite any type of	suspeveractrealYESNOTSURE	1	1

Variable	Mnemonic	min	max
suspicion - yes or not sure			
Suspicious about partner - yes	susppartnerYES	0	1
Suspicious about partner - yes or not sure	susppartnerYESNOTSURE	0	1
Suspicion about partner affect behavior - yes	susppartneraffectYES	0	1
Suspicion about partner affect behavior - yes or not sure	susppartneraffectYESNOTSURE	0	1
Whether acted real despite suspicion about partner - yes	susppartneractrealYES	0	1
Whether acted real despite suspicion about partner - yes or not sure	susppartneractrealYESNOTSURE	1	1
Suspicious about partner information - yes	susppartnerinfoYES	0	1
Suspicious about partner information - yes or not sure	susppartnerinfoYESNOTSURE	0	1
Suspicion about partner information affect behavior - yes	susppartnerinfoaffectYES	0	1
Suspicion about partner information affect behavior - yes or not sure	susppartnerinfoaffectYESNOTSURE	0	1
Whether acted real despite suspicion about partner information - yes	susppartnerinfoactrealYES	0	1
Whether acted real despite suspicion about partner information - yes or not sure	susppartnerinfoactrealYESNOTSURE	1	1
Final suspicion question - whether any type of suspicion affected behavior during study - yes	suspanyYES	0	1
Final suspicion question - whether any type of suspicion affected behavior during study - yes or not sure	suspanyYESNOTSURE	0	1
Number of suspicion questions (whether suspicious) indicated yes to	SUSPICIONSCALE_YES	0	4
Number of suspicion questions (whether suspicious) indicated yes or not sure to	SUSPICIONSCALE_YESNOTSURE	0	4
Hispanic/Latino indicator	hisplarecode	0	1
American Indian/Alaskan Native indicator	RE1_AIAN	0	1
Black/African American indicator	RE2_BAA	0	1
East Asian indicator	RE3_EA	0	1
White/Caucasian indicator	RE9_WC	0	1
Other race/ethnicity indicator	RE10_OTHER	0	1
Racial/ethnic minority indicator	RE_MINORITY	0	1
How often use MTurk to make basic ends meet	educhhwhatisthehighestlevelofedu	2	8
Highest education in household	endsmeethowoftendoyouuseearnings	1	7
Social class rating	socialclasspleaseindicatewhichso	1	5
Age in years	q73 [age in years]	19	74
Whether indicates having worked with other MTurkers - yes	EverWorkOtherMTurkerYES	0	1
Whether indicates having worked with other MTurkers - yes or not sure	EverWorkOtherMTurkerYESNOTSURE	0	1
Whether indicates having worked with other MTurkers - not sure	EverWorkOtherMTurkerNOTSURE	0	1
Self-reported estimate of time to complete in minutes (recoded)	timeminrecode	15	150
Flag for issues noted during study	ISSUESFLAG_rec	0	1
Flag for comment indicating potential issue at end of group study	ISSUECOMMENTSFLAG_rec	0	1
Flag for potential doubt or further scrutiny about whether to keep the case in the data	doubtever_rec	0	1

Variable	Mnemonic	min	max
Flag for missed questions or technical trouble during the pretest	flagorangepretest	0	1
Number of attention-check questions correct	ATTENTIONSCORE	2	3
Whether tried best during study	trybeststudy	1	1

Study 2 Protocol Information

Screener:

>>>Collect information on men and women. Considering that there are more U.S. women than men on MTurk (e.g., Ross et al. 2010), Study 3 is women only as planned. Actual gender distributions may have changed these decisions.

[Study 2 is mixed-gender]

SCREENER - STUDIES 2 and 3

Posting: Screener for later group interaction studies that pay up to $7

Description:

Screener for future group interaction studies that pay up to $7 (pretest required before these). **If you are not eligible, please return this HIT.** If you have questions about your eligibility, please contact the researchers at *ResearchUMDSOCY@gmail.com*

Keywords: task, group, survey, research, questionnaire, study, interaction

24 hour maximum allotted for completion, HIT expiration after 5 days, auto-approval for payment after 30 days

Workers do not need to be Master Workers
HIT approval rate is 90% or greater
Must be located in United States

TASK PAGE:

Screener for later group interaction studies that pay up to $7 (and take about 50 minutes). A pretest must be taken first (pays $0.50 for about 15 minutes), and eligible participants from the pretest will be invited to continue to the group studies.

The screener takes about ten minutes and pays $0.15.

***IF YOU ARE NOT ELIGIBLE, OR DO NOT GET A CONFIRMATION NUMBER AT THE END, PLEASE RETURN THE HIT TO AVOID REJECTION OF YOUR SUBMISSION.

Please make sure you have not already participated in one of our studies before. If you have, the Turkitron page will not allow you to enter the screener. If you have questions about your eligibility for the screener, please contact the researchers at *ResearchUMDSOCY@gmail.com*. If you are not eligible, please return the HIT.

You are invited to participate in this study **if you currently live in the United States, both you and your parents or guardians were born in the United States, and all of you have lived in the United States for most or all of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.**

After the screener, eligible participants will be asked to take a pre-test evaluation (about 15 minutes, pays $0.50). Participants who remain eligible after the pre-test evaluation will be asked to work on one of our real-time group tasks with other MTurk workers. The group tasks take about 50 minutes, and pay for the group tasks are based on group performance – each participant will earn at least $5, and up to $2 extra in MTurk bonuses for $7 total, depending on performance.

At the end of the screener, you will receive a code to paste into the box below to receive credit for taking our screener. **Follow the link below to complete the screener.**

Make sure to leave this window open as you complete the screener. When you are finished, you will return to this page to paste the code into the box.

<Survey link via Turkitron>

Informed Consent

<Time for 10 seconds>

Thank you for your interest in participating in this study.

The purpose of this screener questionnaire is to let us know if you are interested in participating in a later group interaction study. If you are eligible for the next stages of the study, we will assign you a qualification and invite you to participate.

Please make sure you have not already participated in one of our studies before participating. If you have, the Turkitron page will not allow you to enter the screener. If you have questions about your eligibility for the screener, please contact the researchers at *ResearchUMDSOCY@gmail.com*. If you are not eligible, please return the HIT.

This research is run by Social Science Researchers at the University of Maryland to study group tasks and survey responses. You are invited to participate in this study **if you currently live in the United States, both you and your parents or guardians were born in the United States, and all of you have lived in the United States for most or all of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.**

This is a short screening survey for a larger project. After the screener, eligible participants will be asked to take a pre-test evaluation (about 15 minutes, pays $0.50). Participants who remain eligible after the pre-test evaluation will be asked to work on one of our real-time group tasks with other MTurk workers. The group tasks take about 50 minutes, and pay for the group tasks are based on group performance – each participant will earn at least $5, and up to $2 extra in MTurk bonuses for $7 total, depending on performance.

In this screener, you will be asked to answer a few questions about yourself (for example, What is your age in years?, and Please identify your gender – Man, Woman, Other, or Prefer not to say). The screener takes about ten minutes to complete, and you will be paid $0.15 for completing it. You will need to submit a confirmation code from the end of the survey to receive payment.

This research is not designed to benefit you personally, but it may help researchers. Possible risks include loss of confidentiality. Only authorized individuals (members of the research team and associated staff) will have access to your personal information and responses. Data will be stored securely (password-protected). Your MTurk worker ID may be stored in a screening service database such as Turkitron to manage eligibility criteria for this study and future studies, regardless of whether you complete this study. Data will be kept indefinitely, and unless we get your consent to keep them, documents with personally identifiable information will be deleted or destroyed after a period of at least three years, according to UMD's policies. We will protect your identity and confidentiality of your responses to the maximum extent allowable by law.

Your participation is voluntary, and you may stop participating at any time. If you decide not to participate or to stop participating, you will not be penalized or lose any benefits to which you are otherwise entitled. You must answer all questions in the screener questionnaire to receive payment, and accepting the HIT and not finishing it may result in

an expired or rejected MTurk HIT. This study is part of a series, and participating in this study may affect your eligibility for future studies in this series.

You may contact the investigators with any questions about this research: *ResearchUMDSOCY@gmail.com*. You may also contact the University of Maryland IRB with any questions or complaints about your rights as a research participant: *irb@umd.edu*, 301-405-0678.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

By selecting "Yes, I consent to participate," you certify that you are at least 18 years old, you meet the eligibility criteria, you understand the information above, your questions are answered to your satisfaction, and you are volunteering to participate.

Do you consent to participate in this research?

Yes, I consent to participate
No, I do not consent to participate

No-consent message:

You have indicated that you do not consent to participate. If this was in error, please restart the questionnaire (you may need to clear your temporary browser files). Otherwise please follow the link below to be directed back to the MTurk home page.

https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[GO TO SURVEY END]

Demographics I

Please enter your **MTurk worker ID**. This is your worker ID, not your username or email address you log in with.
It should be about 14 characters long and probably starts with A. You should be able to find it at https://www.mturk.com/mturk/dashboard (opens new browser window).
***required, must be at least 10 characters

Please enter your age in years:

___
(DISQUAL if <18)

In what country do you currently live?
---pull-down menu
***required
***DISQUAL if not U.S.…

Are you currently a citizen of the United States?
Yes
No
Not sure

Were both you and your parents or guardians were born in the United States AND have all of you lived in the United States for most or all of your lives?
***required
Yes
No
Not sure

Please list all languages you speak, ordered from most to least fluent
<free response>

Are you fluent in English?
***required
Yes No Not sure
DISQUAL

Ineligible if:

Ineligibility message:

If List of Countries **United States of America** Is **Not Selected** Edit
Or Are you a U.S. citizen? **Not** Is **Selected** Edit
Or Are you a U.S. citizen? **Not sure** Is **Selected** Edit
Or Nativity Q **No** Is **Selected**
Or Nativity Q **Not sure** Is **Selected**
Or Are you fluent in English? **No** Is **Selected** Edit
Or Are you fluent in English? **Not sure** Is **Selected** Edit
Or Please enter your age in years (numbers only) **Text Response** Is **Less Than 18**

Based on one or more of your responses so far, we have determined that you are not eligible to participate in this study.

Please follow the link below to be directed back to the MTurk home page.
https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[END OF SURVEY PAGE]

DEMOGRAPHICS II

~combined into one or more pages

Please answer the following questions

Please identify your gender:
Man, Woman, Other, Prefer not to say

Please enter the ZIP code for where you currently live.

--- enter ZIP or postal code

Are you Hispanic or Latino?
Yes No Not sure

Please check all racial/ethnic groups you identify with:
American Indian or Alaska Native
Black or African American
East Asian
Native Hawaiian or Pacific Islander
South American Indigenous or Native
South Asian
Southeast Asian
West Asian or Middle Eastern
White or Caucasian

Other (please specify)

What is the highest level of education anyone in your household has obtained?
Less than high school
High school graduate or equivalent (e.g., GED)
Some college, no degree
Associate's degree
Bachelor's degree
Post-secondary non-degree award (e.g., EMT)
Master's degree
Doctoral degree (e.g., PhD)

How often do you use earnings from MTurk to make basic ends meet? (from Ross et al.)
---Never ---sometimes---always

Please indicate which social class you belong most closely to:

Lower
Working
Lower-middle
Middle-middle
Upper-middle
Upper

<ATTENTION-CHECK QUESTION>

What is your favorite color? Though you may have a favorite, the answer to this question is yellow.

Blue
Red
Orange
Yellow
Green
Purple

Have you ever worked with other MTurk workers to complete a HIT together?

Yes No Not sure

IF Yes or Not sure:

Please describe what you did when you worked with other MTurk workers to complete a HIT together.

[ ]

Please provide comments about your experience working with other MTurk workers to complete a HIT together.

[ ]

Everyone:

Please provide any further comments you have about HITs that have you work with other MTurk workers to complete a task together.

Everyone:

We expect to have the pretest evaluation available in the next four weeks.

Please enter your email address if you would like to be notified via email when the group task study is available if you remain eligible.

[ ]

Please provide any other comments you have for us.

[ ]

[Debriefing]

This is the end of the screener questionnaire. Thank you for your time and interest in our study.

We will assign you a qualification if you are eligible to participate in the following stages of our study. We will also notify you by email if you provided your email address. We expect this will be in the next four weeks.

You may contact the investigators with any questions or concerns about this research: ResearchUMDSOCY@gmail.com

You may also contact the University of Maryland IRB with any questions or concerns about your rights as a research participant: irb@umd.edu, (301) 405-4212.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

Please continue to find your survey confirmation code for this MTurk HIT.

Please find your confirmation number below. You will need this to complete the MTurk HIT.

${e://Field/confirmation_code}

Again, your MTurk HIT confirmation number is **${e://Field/confirmation_code}**

Please keep this window open until you have completed your HIT submission.

[End message]

Your responses have been recorded. Thank you.

***IF YOU DID NOT RECEIVE A CONFIRMATION NUMBER CODE EARLIER, PLEASE RETURN THE HIT.

Please do not hesitate to contact ResearchUMDSOCY@gmail.com with any questions or concerns.

[Pretest]

Posting: Pretest for a later group interaction study that pays up to $7 (pretest takes about 15 minutes)

Short description: Pretest for future group interaction studies that pay up to $7. Follows from previous screener. Pretest takes about 15 minutes. If you have any questions, please contact the researchers at ResearchUMDSOCY@gmail.com

Task page:

***You may only take and submit this pretest once. If you have already completed it or are ineligible, please return the HIT.

Please take this pretest if you are interested in participating in our later group interaction study. Must have qualification and 90%+ HIT acceptance rate.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting.

At the end of the pretest, you will receive a code to paste into the box below to receive credit for taking our pretest. **Follow the link below to complete the pretest.**

Make sure to leave this window open as you complete the pretest. When you are finished, you will return to this page to paste the code into the box.

<link>

Keywords: task, group, survey, research, questionnaire, study, interaction

24 hour maximum allotted for completion, HIT expiration after 5 days, auto-approval for payment after 30 days

Workers do not need to be Master Workers
HIT approval rate is 90% or greater
Must be located in United States
QUALIFICATION – SPECIFIC TO THIS TASK (assigned based on screener)

[only for approved men and women – other selection preferences based on other traits also used (e.g., attentiveness) to get as homogenous a sample as possible]

Consent Page

<Time for 10 seconds>

Thank you for your interest in participating in this study.

Please read the following carefully. You are encouraged to retain a copy of this information. You may electronically save, print, or request a copy of this information for your records.

This research is run by Social Science Researchers at the University of Maryland to investigate situation experiences and survey responses. You are invited to participate in this study if you determined eligible and assigned a qualification to participate following the initial screener. You must have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.

You will be asked to answer questions on your own that are designed to measure Critical Choice Ability (CCA) traits. You will be asked to make difficult judgments about characteristics of geometric figures. This pre-test evaluation will take up to 15 minutes, and pays $0.50.

Participants who remain eligible after this pre-test evaluation will be asked to work on a group task real-time with other MTurk workers. The group tasks take about 50 minutes, and pay for the group tasks are based on group performance – each participant will earn at least $5,, and up to $2 extra in MTurk bonuses for $7 total, depending on performance.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the pretest evaluation in one sitting. If we suspect that you do not qualify for the study, the study was not done in one sitting, or proper attention was not given to responses, we may reject your submission and not issue payment.

This research is not designed to benefit you personally, but it may help researchers. Possible risks include loss of confidentiality and frustration from the task activities—they are designed to be difficult. You may wish to contact a mental health professional if you experience distress. Results from this study may be presented or published. Only authorized individuals (members of the research team and associated staff) will have access to your responses. Data will be stored securely (password-protected), and potentially identifying information (such as IP address and MTurk username) will not be

linked to your responses from this pretest evaluation after initial processing. Your MTurk worker ID may be stored in a screening service database such as Turkitron to manage eligibility criteria for this study and future studies, regardless of whether you complete this study. Data will be kept indefinitely, and documents with personally identifiable information will be deleted or destroyed after a period of at least three years, according to UMD's policies. We will protect your identity and confidentiality of your responses to the maximum extent allowable by law.

Your participation is voluntary, and you may stop participating at any time. If you decide not to participate or to stop participating, you will not be penalized or lose any benefits to which you are otherwise entitled. You must answer all questions in this pretest evaluation to receive payment, and accepting the HIT and not finishing it may result in an expired or rejected MTurk HIT. This study is part of a series, and participating in this study may affect your eligibility for future studies in this series.

You may contact the investigators with any questions about this research: *ResearchUMDSOCY@gmail.com*. You may also contact the University of Maryland IRB with any questions or complaints about your rights as a research participant: *irb@umd.edu*, 301-405-0678.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

By selecting "Yes, I consent to participate," you certify that you are at least 18 years old, you meet the eligibility criteria, you understand the information above, your questions are answered to your satisfaction, and you are volunteering to participate.

Do you consent to participate in this research?

Yes, I consent to participate
No, I do not consent to participate

No-consent message:

You have indicated that you do not consent to participate. If this was in error, please restart the questionnaire (you may need to clear your temporary browser files). Otherwise please follow the link below to be directed back to the MTurk home page.

https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[GO TO SURVEY END]

>>>>>

Thank you for participating in this study.

- Please read all instructions carefully.
- Please make sure you are in a quiet space free from distractions during participation
- Please make sure you have time to do the study in one sitting.

Please enter your **MTurk worker ID**. This is your worker ID, not your username or email address you log in with.
It should be about 14 characters long and probably starts with A. You should be able to find it at https://www.mturk.com/mturk/dashboard (opens new browser window).
***required, must be at least 10 characters

[ ]

The following questions are designed to test your ability to effectively make important decisions with only limited information. These are called Critical Choice tasks.

You are now ready to begin the pretest evaluation. You will earn one point for each correct answer, out of 20 problems total.

The problem you are answering about only appears for a brief moment, so you must observe it quickly and judge carefully.

Please click the button below to continue to the task.

On the next page, you will be presented with an example of a critical choice (contrast sensitivity) evaluation. You will be shown an image that contains either slightly more white or slightly more black, and you will be asked to decide if this image is predominantly white or predominantly black. You need to make this evaluation within 5 seconds and you will automatically advance to the next question after 5 seconds. Once you've made your choice, you also have the option of moving to the next page sooner using the red arrow at the bottom of the page.

You will be scored out of 20 points, and you will earn 1 point for each evaluation answered correctly.

Proceed to the next page when you are ready to answer the example question.

[practice problem]

IF FAIL PRACTICE: You did not specify a choice before you reached the 5 second limit. For this study, it's important that you make a choice within this time frame.

Please proceed to the next page to try again.

IF PASS PRACTICE, SKIP TO: The critical choice (contrast sensitivity) evaluations you will complete during this study will be very similar to the previous example.

You will now begin the evaluation. On each page, you will be presented with an image to evaluate, two buttons with which to make your decision (either predominantly white or black), and a timer. This timer will count down from 5 to 0 and you must make your final decision before the timer reaches zero.

Please make sure to provide a decision for each image.

Continue to the next page when you are ready to begin.

[INSERT PRETEST] --- out of 20
****first two 10-series from Rinderknecht and Doan (2016 unpublished) instrument in Qualtrics*

Please click the button below to receive your individual task performance feedback.

Critical Choice - Contrast Sensitivity Feedback

You scored **7/18** correct out of **20** possible critical choice problems.

Your score of **7/18** out of **20** is in the **Poor/Superior range** compared to the national standards.

NATIONAL STANDARDS
FOR CRITICAL CHOICE – CONTRAST SENSITIVITY (out of 20 version)

	Individual Scores
Superior	16-20
Average	11-15
Poor	0-10

We have recorded your score, and will link it with the other information you have provided.

As we did after the screener, we will assign a qualification to participants who remain eligible for the group task stage of the study. We expect to have the group task available in the next two weeks.

We will use the information we have about you to assign groups in the next stage of the study.

We will share limited information between assigned group members (such as age and pretest performance), but never in ways that could potentially identify the individuals.

Please enter your email address if you would like to be notified via email when the group task study is available if you remain eligible.

[ ]

Please continue to find your survey confirmation code for MTurk.

[code pages]

Debriefing:

Did you have any issues during the pretest? If so, please describe what happened.
[text box]

This is the end of the pretest evaluation. Thank you for your time and interest in our study.

We will assign you a qualification if you are eligible to participate in the following stages of our study. We will also notify you via email if you provided your email address. We expect this will be in the next two weeks.

You may contact the investigators with any questions or concerns about this research: ResearchUMDSOCY@gmail.com

You may also contact the University of Maryland IRB with any questions or concerns about your rights as a research participant: irb@umd.edu, (301) 405-4212.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

Please continue to find your survey confirmation code for this MTurk HIT.

Please find your confirmation number below. You will need this to complete the MTurk HIT.

${e://Field/confirmation_code}

Again, your MTurk HIT confirmation number is **${e://Field/confirmation_code}**

Please keep this window open until you have completed your HIT submission.

Your responses have been recorded. Thank you.

Please do not hesitate to contact ResearchUMDSOCY@gmail.com with any questions or concerns.

[Group task]

MTurk Listing: Earn up to $7: Critical Choice and Group Interaction: Group Task with Survey — About 50 minutes

Brief Listing Description: Earn up to $7 ($5 minimum) – For participants with qualification: Complete a challenging group task for a research study, includes survey questions, about 50 minutes. Must have qualification and 90%+ HIT acceptance

~~Posted as a $5 task - the other $2 to be paid via Bonus

Keywords: task, group, survey, research, questionnaire, study, interaction

24 hour maximum allotted for completion, HIT expiration after 5 days, auto-approval for payment after 30 days

Workers do not need to be Master Workers
HIT approval rate is 90% or greater
Must be located in United States

***Please note that you may only participate in this study once, and having previously participated in similar studies may mean you are ineligible for this study. The Turkitron website is used to screen Worker IDs for eligibility. If you have further questions about your eligibility, please contact the researchers at *ResearchUMDSOCY@gmail.com*.

This research is run by Social Science Researchers at the University of Maryland to study group tasks and survey responses. You will be paired with another MTurk user from our participant pool during your participation time. Eligible participants will be matched as long as this HIT is active. The study will last **about 50 minutes.**

Pay for participating depends on how you and your assigned partner perform together on the task. You personally will **earn a minimum of $5 for participating**. Depending on performance, you personally may earn more on a sliding scale, up to $2 extra for excellent group performance (paid via MTurk bonus). This means **you personally can earn up to $7 total for participating**.

You are invited to participate in this study **if you currently live in the United States, both you and your parents or guardians were born in the United States**, and **lived in the United States for most or all of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.**

The study must be completed in one sitting (session). Though 24 hours are allotted for the study, it is only expected to take about 50 minutes. The extra time is provided to allow time for resolution in case there are technical issues or other concerns.

We will share limited information (such as age and pretest performance) between assigned group members, but never in ways that could potentially identify the individuals.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting.

At the end of the study, you will receive a code to paste into the box below to receive credit for taking our study. **Follow the link below to complete the study.**

Make sure to leave this window open as you complete the study. When you are finished, you will return to this page to paste the code into the box.

<Survey link via Turkitron>

CONSENT PAGE:

***INSERT CODE TO GENERATE CONFIRMATION NUMBERS AT THE END.

<Time for 10 seconds>

Consent Page

Thank you for your interest in participating in this study.

Please read the following carefully. You are encouraged to retain a copy of this information. You may electronically save, print, or request a copy of this information for your records.

This research is run by Social Science Researchers at the University of Maryland to investigate group problem-solving. You are invited to participate in this study if you determined eligible and assigned a qualification to participate following the pretest evaluation. You must have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.

Participation will involve completing a group task with other MTurk worker participants and answering survey questions. Questions will be about your feelings (for example, briefly describing how you feel about the task situation), and your social attitudes (for example, rating how much you favor or oppose the statement "Group equality should be our ideal"). As a group, you will answer questions that are designed to measure Critical Choice Ability (CCA) traits. You will be asked to make difficult judgments about characteristics of geometric figures.

The study will last about **50 minutes**. Upon completion, you will be paid **$5** through MTurk, and may receive **up to $2 via Bonus, for $7 total**. You will need to submit a confirmation code from the end of the survey to receive payment.

Pay for participating depends on how well your assigned group performs on the task. You personally will **earn a minimum of $5 for participating**. Depending on performance, you personally may earn more on a sliding scale, up to $2 extra for excellent group performance (paid via MTurk bonus). This means **you personally can earn up to $7 total for participating**.

We will share limited information (such as age in years and individual task performance) between assigned group members, but never in ways that could potentially identify the individuals.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting. To receive payment for this study, you must write at least 100 characters thoughtfully addressing each of three questions about the group task situation, and fully complete the group task with your assigned group. We will also consider answers to questions designed to determine whether you are paying attention. If we suspect that you do not qualify for the study, the study was not done in one sitting, or proper attention was not given to responses, we may reject your submission and not issue payment.

This research is not designed to benefit you personally, but it may help researchers. Possible risks include loss of confidentiality, distress from answering questions or about topics that are personal or sensitive, and frustration from the task activities— they are designed to be difficult. You may wish to contact a mental health professional if you experience distress. Results from this study may be presented or published. Only

authorized individuals (members of the research team and associated staff) will have access to your responses. Data will be stored securely (password-protected), and potentially identifying information (such as IP address and MTurk username) will not be linked to these responses after initial processing. Your MTurk worker ID may be stored in a screening service database such as Turkitron to manage eligibility criteria for this study and future studies, regardless of whether you complete this study. Data will be kept indefinitely, and documents with personally identifiable information will be deleted or destroyed after a period of at least three years, according to UMD's policies. We will protect your identity and confidentiality of your responses to the maximum extent allowable by law.

Your participation is voluntary, and you may stop participating at any time. If you decide not to participate or to stop participating, you will not be penalized or lose any benefits to which you are otherwise entitled. Except for initial identification, consent to share limited personal information with assigned group members (this is required to complete participation), questions about the group task, and the group task itself, you may skip a question you do not want to answer. You must finish the study to receive payment, and accepting the HIT and not finishing the study may result in an expired or rejected MTurk HIT. This study is part of a series, and participating in this study may affect your eligibility for future studies in this series.

You may contact the investigators with any questions about this research: *ResearchUMDSOCY@gmail.com*. You may also contact the University of Maryland IRB with any questions or complaints about your rights as a research participant: *irb@umd.edu*, 301-405-0678.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

By selecting "Yes, I consent to participate," you certify that you are at least 18 years old, you meet the eligibility criteria, you understand the information above, your questions are answered to your satisfaction, and you are volunteering to participate.

Do you consent to participate in this research?

Yes, I consent to participate
No, I do not consent to participate

No-consent message:

You have indicated that you do not consent to participate. If this was in error, please restart the questionnaire (you may need to clear your temporary browser files). Otherwise please follow the link below to be directed back to the MTurk home page.

https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[GO TO SURVEY END]

>>>>>

INSTRUCTIONS (put on timer – 5 seconds)

Thank you for participating in this study.

- Please read all instructions carefully.
- Please make sure you are in a quiet space free from distractions during participation
- Please make sure you have time to do the study in one sitting.

Demographics I

Please enter your **MTurk worker ID**. This is your worker ID, not your username or email address you log in with.
It should be about 14 characters long and probably starts with A. You should be able to find it at https://www.mturk.com/mturk/dashboard (opens new browser window).
***required, must be at least 10 characters

We will share limited information (such as age and individual task performance) between assigned group members, but never in ways that could potentially identify the individuals.

The specific information we will share includes: a randomly generated identification code (NOT your MTurk worker ID), country of citizenship, gender identity, age in years, and performance on the pretest evaluation. To confirm, your pretest score was: **`7/18 out of 20 [POOR/SUPERIOR]`**

Group members in this study are all Amazon MTurk workers.

Do you consent to share your information with any other members of your group?

Yes No (if you select no, this will end your participation)
>>> send to no-consent page

Eligible participants will be matched with a group for the task as long as this HIT is active.

Today we are running several sessions simultaneously, and we expect that group matching will take **no more than 5 minutes**. Between our sessions, we will have hundreds of MTurk participants.

Though unlikely, if your group matching takes **more than 15 minutes**, your session will expire. If this happens, please exit the browser tab to close your session. You may either restart through the questionnaire link to try re-entering the pool, or contact ResearchUMDSOCY@gmail.com about rescheduling options.

The purpose of this study is to investigate problem solving over computer networks. In this study, we are interested in determining the strengths and weaknesses of various types

of problem solving for Critical Choice Ability (CCA) problems, and comparing performance individually and in groups.

In today's study, you will be completing a group project. Like the pretest evaluation you took earlier, it will involve answering a number of questions. Instead of working alone, you will work as a group. In this group project, you will be able to see your group members' answers to each question before you select a final answer. You will then answer a series of questions about your feelings and experience working on the task.

Critical Choice Ability (CCA) questions are designed to test your ability to effectively make important decisions with only limited information.

Your feedback from the individual Critical Choice Ability (CCA) assessment you took earlier is below:

Contrast Sensitivity Feedback

You scored **7/18** correct out of **20** possible critical choice problems.

<time for 5 seconds>

Your score of **7/18** out of **20** is in the **Poor/Superior range** compared to the national standards.

NATIONAL STANDARDS
FOR CRITICAL CHOICE – CONTRAST SENSITIVITY (out of 20 version)

Individual Scores

Superior	16-20
Average	11-15
Poor	0-10

We have observed that in many situations, such as when a doctor diagnoses a difficult illness, individuals are called upon to make decisions that must be correct. That is, if the doctor does not make the right diagnosis, the patient might die. Social scientists refer to this kind of situation as a Critical Choice situation.

In Critical Choice situations, when the person is concerned only with the correctness of the decision, he or she will often seek all the information and advice from others that is available. Because the most important thing in a Critical Choice situation is to be right, individuals will not care whether they or others first realize what the appropriate decision is, so long as the decision is the correct one. It is clear then, that exchanging information with others can often lead to more correct decisions than an individual could make working alone.

Several recent studies indicate that individuals working together perform much more effectively than do individuals who work the same problems alone. For this reason, we have you work both individually and with a group as a team.

In this part of the study, we are going to be studying team ability levels. This means that you will be working with a group to solve some more Critical Choice Ability (CCA) problems.

To incentivize you to do your best on the group task**, we are paying up to $2 in MTurk bonuses for good performance**. In addition to the base $5 for this HIT, **you can earn up to $7 total, depending on group performance.**

Please click below to continue to the group matching phase of the study.

[PLEASE WAIT GIF]

The UMDSURVEY platform now allows us to run remote connections through the GROUPSNET PORTAL plugin. As a participant, this means a seamless group task experience for you. In earlier years, we would have directed you to another website to complete the group task, then back to UMDSURVEY to answer any remaining questions for us. Using a single platform reduces the risk of connection problems.

Please click below to continue and enter the group matching pool.

Partner matching

Please wait while our participant pool matches you with 1-3 other participants. Other members of your group may have entered the pool later than you did, so please be patient if it takes a few moments. **This page will automatically advance once you have been matched with a group.**

[PLEASE WAIT GIF]

Eligible participants will be matched with a group for the task as long as this HIT is active.

*Today we are running several sessions simultaneously, and we expect that group matching will take no more than **5** minutes. Between our sessions, we will have hundreds of MTurk participants.*

Though unlikely, if your group matching takes more than 15 minutes, your session will expire. If this happens, please exit the browser tab to close your session. You may either restart through the questionnaire link try re-entering the pool, or contact ResearchUMDSOCY@gmail.com about rescheduling options.

You have been matched with one other participant.

Please click below to continue.

You will be working as partners as a group, or team.

Please click the button when it appears below to continue with the group task instructions

---

~DIFFBN~

As we explained earlier, we are interested in seeing how well the two of you can do as a team when you are not in direct communication with each other. However, we believe that it is best if you know as much as possible about your partner. Consequently, we would like you to take a few moments to review some information about your partner.

Please click the button below to continue.

[PLEASE WAIT GIF]

Partner Information

Please click below to view your partner's information.

[TIME THIS PAGE – 10 seconds]

Participant Code Number 100008398124

Country of citizenship: United States

Gender: Woman [will be MATCHED]

Age: 27

Critical Choice - Contrast Sensitivity Individual Score: **7/18** out of **20 [POOR/SUPERIOR]**

As we explained earlier, several studies on Critical Choice have found that individuals working together perform much more effectively than do individuals who work the same problems alone. For this reason, we will have you work with a partner as a team.

Most of what we know so far about how two-person teams solve problems comes from studies where the teams discussed problems and solutions to these problems face-to-face. However, advances in technology provide more opportunities for individuals to work together to solve problems when face-to-face interaction is not possible.

The study we are conducting involves a situation in which the partners do not discuss possible solutions to problems face-to-face, but rather communicate their choices virtually. While you will not be solving the problems face-to-face, you had somewhat of an opportunity to introduce yourselves to one another by means of the personal information exchanged earlier. We find that it helps people who work together to know something about each other.

[Time this page – 4 seconds]

<tables inserted as images>

NATIONAL STANDARDS

FOR CRITICAL CHOICE – CONTRAST SENSITIVITY

Individual Scores (out of 20)		Team Scores (out of 40)	
Superior	16-20	Superior	37-40
Average	11-15	Above Avg	33-36

Poor	0-10	Average	27-32
		Below Avg	22-26
		Poor	0-21

Research has found that when individuals work alone at solving Critical Choice problems, 0 to 10 is a poor performance. 11 to 15 represents an average performance, and 16 to 25 is clearly a superior performance.

Individuals can improve their scores substantially if they are given the opportunity to see another person's initial choice before having to make a final decision.

In your group:

Your individual score: 7/18 out of 20
Your partner's individual score: 7/18 out of 20

< reinforces status manipulation>

~SCRN12~

NATIONAL STANDARDS
FOR CRITICAL CHOICE – CONTRAST SENSITIVITY

Individual Scores (out of 20)		Team Scores (out of 40)	
Superior	16-20	Superior	37-40
Average	11-15	Above Avg	33-36
Poor	0-10	Average	27-32
		Below Avg	22-26
		Poor	0-21

In today's study, we are interested in seeing how well you can work together as a team. When people work together as partners, it has been found that a team score falling

between 0 and 21 constitutes a very poor team performance. A team score of 22 to 26 is below average performance. Scores of 27 to 33 represent an average team performance. 34 to 37 points represents an above average score. And, 38 to 40 points clearly represents a superior team performance.

~SCRN13.GIF ~

NATIONAL STANDARDS
FOR CRITICAL CHOICE – CONTRAST SENSITIVITY

Individual Scores (out of 20)		Team Scores (out of 40)	
Superior	16-20	Superior	37-40
Average	11-15	Above Avg	33-36
Poor	0-10	Average	27-32
		Below Avg	22-26
		Poor	0-21

As you can see from these standards, it has been demonstrated that teams working together are able to perform more effectively than two individuals working independently. For example, an individual with average ability working on these problems alone could expect to get between 9 and 13 correct. Thus, you might expect that two individuals working together might each get between 9 and 13 correct for a total score between 18 and 26. However, as the team results show, the average team score is quite a bit higher -- between 27 and 33. This is because two people working together as a team, and exchanging information with each other can do better than two individuals working alone.

NATIONAL STANDARDS
FOR CRITICAL CHOICE – CONTRAST SENSITIVITY

Individual Scores Team Scores

Superior	16-20
Average	11-15
Poor	0-10

Superior	37-40
Above Avg	33-36
Average	27-32
Below Avg	22-26
Poor	0-21

In today's study, we are interested in seeing how well you can work together as a team. When people work together as partners, it has been found that a team score falling between 0 and 21 constitutes a very poor team performance. A team score of 22 to 26 is below average performance. Scores of 27 to 33 represent an average team performance. 34 to 37 points represents an above average score. And, 38 to 40 points clearly represents a superior team performance.

~~~~

You and your partner will work together to complete the group task, and you will each get paid the same amount based on your group performance.

To incentivize you to do your best on the group task, the better you and your partner perform as a group, the more you will get paid for participating. You will receive at least $5, and up to $7.

We explain the payment system in more detail shortly.

The following instructions show you how the group task works.

Please click the button below to continue.

ATTENTION CHECK QUESTION:

What is your favorite color? Though you may have a favorite, the answer to this question is green.

Blue
Red
Orange
Yellow
~~~~

Green
Purple

>>>INSERT REAL EXAMPLE PROBLEM GRAPHIC

~SCRN9~
INDIVIDUAL PROBLEM GRAPHIC

Look at the above image. You will have a screen that looks like this, and you will use it in solving the Critical Choice problems. You will first express your initial opinion by pressing either the button marked “Top” or the button marked “Bottom.” When you have made your initial choice, it will be communicated to your partner.

You have only a few seconds to make your decisions. A timer will count down for you. You may submit your response to continue if you are finished deciding before the time expires.

(Click the button below for further instructions.)

PARTNER PROBLEM GRAPHIC

After all responses are received, you will be able to see the other person’s opinion on your panel. That is, on the panel labeled “Your partner’s choice,” you will see either “Top” or “Bottom” selected. During the problem series, after each of you has received information on the other person’s opinion, you will have a few more seconds to decide which is the correct answer. You should each restudy the problem and carefully evaluate your partner’s advice. You should use this advice if it helps you make the right decision. When you have made your final choice, you will indicate your decision by again pressing one of the buttons in the bottom row of your panel.

(Click the button below for further instructions.)

PARTNER PROBLEM GRAPHIC

You will not see your partner's final choice in today's study. After both members of your team have made their final decisions, they will be recorded, and the choices on the panels will go away. Then, the next Critical Choice problem will appear on the screen.

(Click the button below for further instructions.)

Please click the button when it appears below to continue.

SCRN3 (or equivalent graphic)
[NO GRAPHIC]

You and your partner will each provide a final answer for every question (although you will not know each other's final answers). Thus, your group will have a total of 40 final answers (one from each partner for each of the 20 questions). The payment you will receive for the study today is based on how many questions your group answers correctly.

To incentivize you to do your best on the group task, we are paying up to $4 in MTurk bonuses for good performance. In addition to the base $5 for this HIT, you can earn up to $7 total, depending on group performance.

Next we explain our evaluation and payment system.

THREAT MANIPULATIONS:

*****CONTROL CONDITION

These are the required performances for each payment grade.

PAYMENT FOR TEAM CRITICAL CHOICE SCORES

Required Team Score		Total payment ($5 + MTurk bonus amount) per participant	
Superior	37-40	$7.00	($5+$2)
Above Average	33-36	$6.50	($5+$1.50)
Average	27-32	$6.00	($5+$1)
Below Average	22-26	$5.50	($5+$0.50)
Poor	0-21	$5.00	($5+$0)

Your group's goal is to earn as much money as possible. The more points your group earns, the higher the payment for each group member.

This week, a number of groups will complete this study. However, the other groups' performance scores will not affect your group's payments. The number of points your group earns is what determines your payment. When a group in this study scores a high number of points, it does not affect the ability of other groups to earn a high payment. In other words, the payments are non-zero-sum.

< This version does not mention threat-related things, and is not expected to promote especially positive affect.>

PAYMENT FOR TEAM CRITICAL CHOICE SCORES

Required Team Score		Total payment ($5 + MTurk bonus amount) per participant	
Superior	37-40	$7.00	($5+$2)
Above Average	33-36	$6.50	($5+$1.50)
Average	27-32	$6.00	($5+$1)
Below Average	22-26	$5.50	($5+$0.50)
Poor	0-21	$5.00	($5+$0)

The below table shows that to receive a certain amount of payment, you need to score better than the corresponding number of points. For example, if you score 34 points, you will receive a payment of $5 total for this study.

These standards are the same no matter what the other groups score.

If another group scores high, this does not affect your group's ability to earn a high payment.

PAYMENT FOR TEAM CRITICAL CHOICE SCORES

	Required Team Score	Total payment ($5 + MTurk bonus amount) per participant	
Superior	37-40	$7.00	($5+$2)
Above Average	33-36	$6.50	($5+$1.50)
Average	27-32	$6.00	($5+$1)
Below Average	22-26	$5.50	($5+$0.50)
Poor	0-21	$5.00	($5+$0)

Please consider your group's situation, and click the button to advance once it appears below.

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. However, the other groups' performance scores will not affect your group's payments. The number of points your group earns is what determines your payment. When a group in this study scores a high number of points, it does not affect the ability of other groups to earn a high payment. In other words, the payments are non-zero-sum.

What do you think about being a member of your task group in this situation?

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. However, the other groups' performance scores will not affect your group's payments. The number of points your group earns is what determines your payment. When a group in this study scores a high number of points, it does not affect the ability of other groups to earn a high payment. In other words, the payments are non-zero-sum.

What is it like for you personally to be a member of your task group in this situation?

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. However, the other groups' performance scores will not affect your group's payments. The number of points your group earns is what determines your payment. When a group in this study scores a high number of points, it does not affect the ability of other groups to earn a high payment. In other words, the payments are non-zero-sum.

How do you feel about being a member of your task group in this situation?

**********THREAT CONDITION

These are the required performances for each payment grade.

PAYMENT FOR TEAM CRITICAL CHOICE RANKINGS

	Required Team Rank	Total payment ($5 + MTurk bonus amount) per participant	
Superior	Better than 85+% of all groups in this study	$7.00	($5+$2)
Above Average	Better than 60-84% of all groups in this study	$6.50	($5+$1.50

Average	Better than 40-59% of all groups in this study	$6.00	($5+$1)
Below Average	Better than 15-39% of all groups in this study	$5.50	($5+$0.50)
Poor	Better than 14% or less of all groups in this study	$5.00	($5+$0)

PAYMENT FOR TEAM CRITICAL CHOICE RANKINGS

Required Team Rank		Total payment ($5 + MTurk bonus amount) per participant	
Superior	Better than 85+% of all groups in this study	$7.00	($5+$2)
Above Average	Better than 60-84% of all groups in this study	$6.50	($5+$1.50
Average	Better than 40-59% of all groups in this study	$6.00	($5+$1)
Below Average	Better than 15-39% of all groups in this study	$5.50	($5+$0.50)
Poor	Better than 14% or less of all groups in this study	$5.00	($5+$0)

Your group's goal is to earn as much money as possible. The more points your group earns, the higher the payment for each group member.

This week, a number of groups will complete this study. The other groups' performance scores threaten your group's ability to earn a high payment because the ranking of your group's score relative to the other groups is what determines your payment. When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment. In other words, the payments are zero-sum, and high payments are scarce. This is why the other groups threaten your group.

PAYMENT FOR TEAM CRITICAL CHOICE RANKINGS

Required Team Rank		Total payment ($5 + MTurk bonus amount) per participant	
Superior	Better than 85+% of all groups in this study	$7.00	($5+$2)
Above Average	Better than 60-84% of all groups in this study	$6.50	($5+$1.50
Average	Better than 40-59% of all groups in this study	$6.00	($5+$1)
Below Average	Better than 15-39% of all groups in this study	$5.50	($5+$0.50)
Poor	Better than 14% or less of all groups in this study	$5.00	($5+$0)

The below table shows that to receive a certain amount of payment, you need to score better than the corresponding percentage of other groups in this study. For example, if you score higher than 63% of the other groups, you will receive a payment of $5 total for this study.

These standards depend on what the other groups score.

If another group scores high, this takes away from your group's ability to earn a high payment. This is why the other groups threaten your group.

PAYMENT FOR TEAM CRITICAL CHOICE RANKINGS

	Required Team Rank	Total payment ($5 + MTurk bonus amount) per participant	
Superior	Better than 85+% of all groups in this study	$7.00	($5+$2)
Above Average	Better than 60-84% of all groups in this study	$6.50	($5+$1.50
Average	Better than 40-59% of all groups in this study	$6.00	($5+$1)
Below Average	Better than 15-39% of all groups in this study	$5.50	($5+$0.50)
Poor	Better than 14% or less of all groups in this study	$5.00	($5+$0)

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. The other groups' performance scores threaten your group's ability to earn a high payment because the ranking of your group's score relative to the other groups is what determines your payment. When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment. In other words, the payments are zero-sum, and high payments are scarce. This is why the other groups threaten your group.

What do you think about being a member of your task group in this threatening situation?

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. The other groups' performance scores threaten your group's ability to earn a high payment because the ranking of your group's score relative to the other groups is what determines your payment. When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment. In other words, the payments are zero-sum, and high payments are scarce. This is why the other groups threaten your group.

What is it like for you personally to be a member of your task group in this threatening situation?

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

This week, a number of groups will complete this study. The other groups' performance scores threaten your group's ability to earn a high payment because the ranking of your group's score relative to the other groups is what determines your payment. When a group earns a high number of points, it takes away from the ability of other groups to earn a high payment. In other words, the payments are zero-sum, and high payments are scarce. This is why the other groups threaten your group.

How do you feel about being a member of your task group in this threatening situation?

How difficult do you think it will be to earn profit points?

Not at all difficult---Very difficult

>>>>

PRE-TASK BRIDGE:

Your group is almost ready to begin the task. Please wait for the button to appear below.

<time for 2 seconds>

INFORMATION ABOUT YOUR PARTNER:

Participant Code Number 100008398124

Country of citizenship: United States

Gender: [MATCHED]

Age: 27

Critical Choice - Contrast Sensitivity Individual Score: **7/18** out of **20 [POOR/SUPERIOR]**

~SCRN14~

<Time for 10 seconds>

Here is a review of important group task instructions:

1. You will be shown a series of 20 problems and will be asked to decide whether the top choice or the bottom choice is correct.

2. Only your final decision on each slide will count toward your team score.

3. Each time that one of you makes a correct final decision, your team will receive 1 point. If both of you choose correctly, your team receives 2 points. This means that incorrect final decisions add nothing to your team score.

4. Remember: We are interested in how well the two of you can work together as a team. You should not hesitate to change your initial choices if it helps you to make the right decision for your team.

5. Finally, please hold your choices until you see instructions indicating that you should make your selection. Then, make your choice as soon as possible after you have been instructed to do so.

[PARTNER TASK PROGRAM]

Includes images and content from and adapted from Troyer 2002, programmed manually in Qualtrics:
Qs 1, 6, and 13, and 15 programmed manually to agree
the others automatically disagree
Timings for questions and auto-advances, etc., assigned to appear realistic.
Please wait screen GIF

Tentative list of task question timings *(in seconds)*:

1. 15, 8
2. 12, 9
3. 9, 5
4. 16, 7
5. 10, 20
6. 10, 7
7. 5, 8
8. 5, 6
9. 10, 10
10. 9, 5
11. 3, 4
12. 4, 3
13. 10, 3
14. 7, 7
15. 2, 4

16. 5, 5
17. 7, 2
18. 9, 5
19. 5, 10
20. 7, 20

The group interaction portion is now complete.

Please click the button when it appears below to continue to the study.

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

Please rate the following impressions of the partner from your task group.
[repeat with each, and each of these questions on a separate page]

StatusRate-1-Influence: To what extent did your **partner influence you during the task**?

Not at all---very much so

StatusRate-2-Consider: To what extent did you **take your partner's initial answers into consideration during the task**?

Not at all --- very much so

StatusRate-3-Correct: To what extent did you think **your partner's initial answers were correct during the task**?

Not at all --- very much so

StatusRate-4-CSLevel: How would you rate **your partner's level of critical choice (contrast sensitivity) ability**?

Very low --- very high

StatusRate-5-Competent: To what extent do you think **your partner is competent**?
Not at all --- very much so

StatusRate-6-Trust: To what extent **do you trust your partner**?
Not at all --- very much so

StatusRate-7-WorkAgain: If you could, **would you work with your partner again**?
Definitely no --- Definitely yes

SDO_7 Qs:

Social Dominance Orientation - updated with dominance and egalitarianism (SDO7) — Ho et al. 2015

SDO7: Appendix A:

Show how much you favor or oppose each idea below by selecting a number from 1 to 7 on the scale below. You can work quickly; your first feeling is generally best.

1 Strongly Oppose; 2 Somewhat Oppose; 3 Slightly Oppose; 4 Neutral; 5 Slightly Favor; 6 Somewhat Favor; 7 Strongly Favor

Pro-trait dominance:

(SDO-PTD-1) 1. Some groups of people must be kept in their place.

(SDO-PTD-2) 2. It's probably a good thing that certain groups are at the top and other groups are at the bottom.

(SDO-PTD-3) 3. An ideal society requires some groups to be on top and others to be on the bottom.

(SDO-PTD-4) 4. Some groups of people are simply inferior to other groups.

Con-trait dominance:

(R-SDO-CTD-1) R-5. Groups at the bottom are just as deserving as groups at the top.

(R-SDO-CTD-2) R-6. No one group should dominate in society.

(R-SDO-CTD-3) R-7. Groups at the bottom should not have to stay in their place.

(R-SDO-CTD-4) R-8. Group dominance is a poor principle.

Pro-trait antiegalitarianism:

(SDO-PTAE-1) 9. We should not push for group equality.

(SDO-PTAE-2) 10. We shouldn't try to guarantee that every group has the same quality of life.

(SDO-PTAE-3) 11. It is unjust to try to make groups equal.

(SDO-PTAE-4) 12. Group equality should not be our primary goal.

Con-trait antiegalitarianism:

(R-SDO-CTAE-1) R-13. We should work to give all groups an equal chance to succeed.

(R-SDO-CTAE-2) R-14. We should do what we can to equalize conditions for different groups.

(R-SDO-CTAE-3) R-15. No matter how much effort it takes, we ought to strive to ensure that all groups have the same chance in life.

(R-SDO-CTAE-4) R-16. Group equality should be our ideal.

ATTENTION CHECK Q:

What is your favorite social media outlet? Though you may have a favorite, the correct answer to this question is Myspace.

Facebook
Instagram
Reddit
Twitter
Myspace

Google+

THREAT FEELING Qs:

[as in Study 1]

[As one-page]

Please answer the following questions about your feelings

How ___ do you feel right now? (not at all---very)

FEEL1-Q37. Negatively
FEEL2-Q38. Frustrated
FEEL3-Q41. Anxious
FEEL4-Q48. Worried
FEEL5-Q42. Fearful
FEEL6-Q103. Vulnerable
FEEL7-Q104. Helpless
FEEL8-Q43. Threatened
FEEL9-Q44. Scared
FEEL10-Q107. Constrained
FEEL11-Q45. Frightened
FEEL12-Q46. Intimidated
FEEL13-~Q49. Alarmed
FEEL14-Q98. In danger

[new page]

For the following questions, think of your task group in this study as a social group you are part of.

[also use bold here]

To what extent do you feel…? (not at all---very much)

TC-1
Q57. Worried for your task group?
TC-2
Q52. Anxious for your task group?
TC-3
Q53. Fearful for your task group?
TC-4
Q108. That your task group is vulnerable
TC-5
Q110. Vulnerable on behalf of your task group
TC-6-THREATMC
[MANIPULATION CHECK] Q54. That your task group is threatened
TC-7
Q109. Threatened on behalf of your task group
TC-8
Q100. That your task group is in danger
TC-9
Q55. In danger on behalf of your task group

Please answer the following questions:

[new page for each]

How important to you was it to earn as many points as you could during the task?

Not at all important --- Very important

How difficult was it for you to earn profit points during the task?
Not at all difficult --- Very difficult

Did you try your best during the group task?

Not at all ---- Definitely

How much did you feel like you were part of a group with your partner?

Not at all ---- Very much so

We are considering conducting a follow-up study to this one on group problem-solving in the next few weeks. Would you like us to contact you to be in this study?

Yes
No

IF YES: We can try to match the same groups again for the follow-up study. This would mean working with the same partner you worked with in for this study.

Would you like us to match you with the same partner again?

Yes
No

IF NO: If you were participating in the follow-up study, we could try to match the same groups again. This would mean working with the same partner you worked with in for this study.

If you were participating in the follow-up study, would you like us to match you with the same partner again?

Yes
No

MANIPULATION CHECKS

What was **your** score on the individual contrast sensitivity (Critical Choice) ability test? (Out of 20 possible points)

[text box - #s 0-20 only]

How do you think **your** individual contrast sensitivity (Critical Choice) ability score compares to the national average?

Very much below average --- very much above average

How would you rate **your** contrast sensitivity (Critical Choice) ability?

Very poor --- very good

What was **your task partner's** score on the individual contrast sensitivity (Critical Choice) ability test? (Out of 20 possible points)

[text box - #s 0-20 only]

How do you think **your task partner's** individual contrast sensitivity (Critical Choice) ability score compares to the national average?

Very much below average --- very much above average

How would you rate **your task partner's** contrast sensitivity (Critical Choice) ability?

Very poor --- very good

Threat manipulation check

Please briefly describe how the amount your task group will be paid for this group study is determined.

[ ]

Which of the following best describes what determines how much pay your group will receive for this group study?

- How your group's score compares to the required score ranges

- How your group's score ranks among the other groups in this study

- Not sure

Do the other groups in this study threaten your ability to earn a high payment?

Yes

No

- Not sure

Thinking about your group's situation working on group the task, how threatening do you feel this situation was to you personally?

Not at all threatening --- very threatening

Thinking about your group's situation working on group the task, how threatening do you feel this situation was to your task group?

Not at all threatening --- very threatening

ATTENTION CHECK Q

What is your favorite color? Though you may have a favorite, the answer to this question is blue.

Blue
Red
Orange
Yellow
Green
Purple

SUSPICION CHECK

[Similar to Study 1]

Separate pages for questions.

(Check for suspicion)

SUSPICION

Please answer the following questions.

Did you try your best during the study?

Yes, No, Not sure

IF NO OR NOT SURE:

Why didn't you try your best during the study?
[ ]

Did you ever suspect that anything about the study wasn't actually what we told you it was?

Yes, No, Not sure

IF YES OR NOT SURE:

What were you suspicious about in this study?

[text box]

Did suspicion about something in the study not being what we told you it was affect your behavior in the study?

Yes, No, Not sure

Please explain.

Did you act as though everything in the study was actually what we told you it was?

Yes, No, Not sure

Please explain.

Did you ever suspect that your partner in the study was not real?

Yes, No, Not sure

IF YES OR NOT SURE:

Did suspicion about your partner not being real affect your behavior during the study?

Yes, No, Not sure

Please explain.

Did you act as though your partner was real?

Yes, No, Not sure

Please explain.

Did you ever suspect that any information we told you about your partner in the study was not true?

Yes, No, Not sure

IF YES OR NOT SURE:

Did suspicion about information we told you about your partner in the study not being true affect your behavior during the study?

Yes, No, Not sure

Please explain.

Did you act as though the information about your partner was true?

Yes, No, Not sure

Please explain.

Did any type of suspicion about this study affect any of your behavior during the study?

Yes
No

Not sure

Please explain.

Please include any further comments about suspicion about this study.

[ ]

<INSERT reCAPTCHA directly via Qualtrics>

HONESTY

We know that sometimes in online studies, people end up participating in studies that do not apply to them by mistake. This might happen, for example, if a man takes a survey intended only for women because he did not read all of the sign-up instructions.

This study was intended to be only for **[insert relevant demographic characteristics, e.g., women who identify as white and middle-class] who are United States citizens, who are fluent in English, who were born in and have lived most or all of their lives in the United States, and whose parents or guardians were also born in and lived most of their lives in the United States.**

We are university-level social science researchers, and want to make sure our results are as accurate as possible. The integrity of our data is especially important if we present our findings or publish them in a journal article.

We want to ask if you think you might be one of these participants who are not in the group intended for this study, for whatever reason. We ask only to help preserve the quality of our data. **Your response to this question will not affect whether you are paid for the study. As long as you also completed the study with proper attention, you will be paid exactly the same, the full amount ($5 plus up to $2 in bonuses based on performance) on MTurk, no matter what your response is.**

Thank you for your honesty and help with our data assessment.

Yes, I am a woman(/man), and both myself and my parents or guardians were born in and have lived in the United States most or all of our lives, I am a citizen of the United States, and I am fluent in English.

No, I am not part of the intended eligible group. I ended up taking this study by mistake or for some other reason.

Other

>>> If No or Other: Please explain why you selected "No" or "Other."

>>>These questions below will be included for at least the first few participants, to produce a more accurate time estimate and fix issues/make any clarifications needed.

TIME-MIN
How long in minutes did it take you to complete the study?
[]
only allow numbers

ISSUES
Did you have difficulty understanding anything or any other issues during the study? If so, please describe what happened.
[text box]

DEBRIEFING

Thank you for taking part in this study.

This study served as part of a University of Maryland doctoral student's dissertation project. This part tested how different situations affect social responses in groups. This purpose was not mentioned in the listing, in case knowing this purpose might affect the responses. Because the research is ongoing and includes experimental elements, we are not currently sharing all details with participants. We ask that you please do not share details about your participation with other people, in case it may affect our results.

Your help with this research is very much appreciated. Thank you!

We will issue $5 of your payment directly through this HIT. We will also issue you the remaining $2 as a MTurk bonus, for $7 total. Provided you completed the study with satisfactory quality, you will receive this maximum possible payment ($7). We ask that you please do not tell other people details about the payments for this study, in case it may affect our results.

We actually do not have plans for a study in the following weeks – those questions were only asked to get realistic responses.

We apologize for withholding the true purpose of the study.

You may contact the investigator with any questions or concerns about this research: ResearchUMDSOCY@gmail.com

You may also contact the University of Maryland IRB with any questions or concerns about your rights as a research participant: *irb@umd.edu*, 301-405-4212. You may also wish to contact a mental health professional if you experience distress following your participation.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

We encourage you to retain this information for your records.

Please click below to continue.

COMMENTS

Please feel free to include any comments about the study or your experience participating.

[text box]

Please continue to the next page for your MTurk confirmation code.

<Insert confirmation code pages>

Please find your confirmation number below. You will need this to complete the MTurk HIT.

${e://Field/confirmation_code}

Again, your MTurk HIT confirmation number is **${e://Field/confirmation_code}**

Please keep this window open until you have completed your HIT submission.

Your responses have been recorded. Thank you.

Please do not hesitate to contact ResearchUMDSOCY@gmail.com with any questions or concerns.

Appendix 3: Supplemental Information for Study 3

Study 3 List of Variables Analyzed and Mnemonics Used

Minimums and maximums for data used for most analyses – full sample data kept by strictest standards and including balancing.

Variable	**Mnemonic**	**min**	**max**
First pre-task coalition vote	PREVOTE1	0	1
Motivated to benefit self during network task	selfprosocial1prer_rev	1	7
Motivated to benefit group during network task - pre-task	selfprosocial2pre	1	7
Think Partner A motivated to benefit self during network task - pre-task (R)	rev_legit_1_prer	1	6
Feel like part of network group - pre-task	cohesion1pre	1	7
Network group important - pre-task	cohesion2pre	1	7
Extent think Partner A will use their power - pre-task (R)	rev_legit_5_prer	1	5
Extent think Partner A will use their power in ways that benefit himself or herself - pre-task (R)	rev_legit_7_prer	1	7
Hypothetical offer to Partner A - pre-task	legit14preofferr_2	5	20
Legitimacy evaluation scale - pre-task	PRE_LEGITIMACY_SCALE	14	98
If in Position A, extent would use power - pre-task (R)	usepower1pre	1	7
If in Position A, extent would use power in ways that benefit group - pre-task	usepower2prer	1	7
If in Position A, extent would use power in ways that benefit self personally - pre-task (R)	usepower3pre	1	7
Hypothetical offer to Partner A, with power roles reversed - pre-task	usepower4offerpre_2	0	20
Difference between hypothetical offers with and without power reversal - pre-task	diffpreoffervspower	-12	20
Final pre-task coalition vote	PREVOTE2	0	1
Whether changed pre-task vote	ChangeVotePRE	0	1
Whether changed pre-task vote from no to yes	NOTOYES_HowChangeVotePRE	0	1
Whether changed pre-task vote from yes to no	YESTONO_HowChangeVotePRE	0	1
Mean points offered during the task	meanpointsoffered	5.750	15.333
Proportion of Partner A offers accepted	meanofferaccepts	0	1
First post-task coalition vote	POSTVOTE1	0	1
Motivated to benefit group during network task - post-task	selfprosocial1post_rev	1	7
Change in motivated to benefit group during network task - pre- to post-task	changeselfprosocial1	-6	6
Motivated to benefit group during network task - post-task	selfprosocial2post	1	7
Change in motivated to benefit group during network task - pre- to post-task	changeselfprosocial2	-4	3
Think Partner A motivated to benefit self during network task - post-task (R)	rev_legit_1_postr	1	5
Change in think Partner A motivated to benefit self during network task - pre- to post-task	changelegit1	-5	3
Feel like part of network group - post-task	cohesion1post	1	7

Network group important - post-task	cohesion2post	1	7
Change in feel like part of network group - pre- to post-task	changecohesion1	-6	4
Change in network group important - pre- to post-task	changecohesion2	-3	3
Extent think Partner A used their power - post-task (R)	rev_legit_5_postr	1	7
Change in extent think Partner A will use/used their power - pre- to post-task	legit5change	-3	4
Extent think Partner A used their power in ways that benefit himself or herself - post-task (R)	rev_legit_7_postr	1	7
Extent think Partner A will use/used their power in ways that benefit himself or herself - pre- to post-task	legit7change	-6	6
Hypothetical offer to Partner A - post-task	legit14postoffer_2	2	19
Change in hypothetical offer to Partner A - pre- to post-task	legit14offerchange	-10	14
Legitimacy evaluation scale - post-task	POST_LEGITIMACY_SCALE	14	98
Change in legitimacy evaluation scale - pre- to post-task	CHANGE_LEGITIMACYSCALE	-44	53
If in Position A, extent would use power - post-task (R)	usepower1post	1	7
Change in if in Position A, extent would use power - pre- to post-task	changeinusepower1	-6	6
If in Position A, extent would use power in ways that benefit group - post-task	usepower2postr	1	7
Change in if in Position A, extent would use power in ways that benefit group - pre- to post-task	changeinusepower2	-6	5
If in Position A, extent would use power in ways that benefit self personally - post-task (R)	usepower3post	1	7
Change in if in Position A, extent would use power in ways that benefit self personally - pre- to post-task	changeinusepower3	-5	4
Hypothetical offer to Partner A, with power roles reversed - post-task	usepower4offerpost_2	0	15
Change in hypothetical offer to Partner A, with power roles reversed - pre- to post-task	changeinusepower4offer	-10	10
Difference between hypothetical offers with and without power reversal - post-task	diffpostoffervspower	-5	13
Change in difference between hypothetical offers with and without power reversal - pre- to post-task	changediffoffervspower	-17	14
Final post-task coalition vote	POSTVOTE2	0	1
Whether changed post-task vote	ChangeVotePOST	0	1
Whether changed post-task vote from no to yes	NOTOYES_HowChangeVotePOST	0	1
Whether changed post-task vote from yes to no	YESTONO_HowChangeVotePOST	0	1
Whether changed first pre-task to first post-task vote	ChangePreVote1toPostVote1	0	1
Whether changed first pre-task to first post-task vote from no to yes	NOTOYES_HowChangePre1toPost1	0	1
Whether changed first pre-task to first post-task vote from yes to no	YESTONO_HowChangePre1toPost1	0	1
Whether changed second pre-task to second post-task vote	ChangePreVote2toPostVote2	0	1
Whether changed second pre-task to second post-task vote from no to yes	NOTOYES_HowChangePre2toPost2	0	1
Whether changed second pre-task to second post-task vote from yes to no	YESTONO_HowChangePre2toPost2	0	1
Extent important to earn as many points as possible	importantearn3	1	7
Extent tried best at the task	trybesttask3	1	7
Whether want partner again	matchpartneragain_recode	0	1
Whether ever voted in favor of the coalition pre-task	EverVoteFavorPRE	0	1
Whether ever voted in favor of the coalition post-task	EverVoteFavorPOST	0	1
Whether ever voted in favor of the coalition	EverVoteFavorOVERALL	0	1
Rating of self power position	selfpowermanipcheck	1	7
Rating of Partner A power position	partnerpowermanipcheck	4	7

Whether correctly identified network positions as assigned randomly	NET_ASSN_CORRECT	0	1
Whether correctly identified network positions as assigned randomly or answered not sure	NET_ASSN_CORRECT_NS	0	1
Self-reported self CS score	selfcsscore	7	18
Self CS score compared to national average	selfcsnatstandard	1	7
Self CS score subjective	selfcssubj	1	7
Partner CS score reported	partnercsscore	2	20
Partner CS score compared to national average	partnercsnatstandard	1	7
Partner CS score subjective	partnercssubj	1	7
Feel personally threatened (scale)	feelpersonallythreatenedscale	14	97
Feel group threatened (scale)	feelgroupthreatenedscale	9	63
Extent difficult to earn points	difficultearn3	1	7
Whether indicated threat-condition situation for not earning any points in a round	pointsq_yes	0	1
Whether answered question about not earning any points in a round correctly for condition	pointsqcorrect	0	1
Whether answered question about not earning any points in a round correctly for condition or not sure	pointsqcorrect_ns	0	1
Whether answered question about not earning any points in a round correctly for condition (includes entire collected sample)	pointsqcorrect	0	1
Whether answered question about not earning any points in a round correctly for condition or not sure (includes entire collected sample)	pointsqcorrect_ns	0	1
Whether indicated threat-condition situation for risk of losing all points in a round	riskq_yes	0	1
Whether answered question about risk of losing all points in a round correctly for condition	riskqcorrect	0	1
Whether answered question about risk of losing all points in a round correctly for condition or not sure	riskqcorrect_ns	0	1
Whether answered question about risk of losing all points in a round correctly for condition (includes entire collected sample)	riskqcorrect	0	1
Whether answered question about risk of losing all points in a round correctly for condition or not sure (includes entire collected sample)	riskqcorrect_ns	0	1
Situation personally threatening (question)	threatmanipq1personal	1	7
Situation threatening to group (question)	threatmanipq2group	1	7
Any type of suspicion - yes	suspeverYES	0	1
Any type of suspicion - yes or not sure	suspeverYESNOTSURE	0	1
Any type of suspicion affect behavior - yes	suspeveraffectYES	0	1
Any type of suspicion affect behavior - yes or not sure	suspeveraffectYESNOTSURE	0	1
Whether acted real despite any type of suspicion - yes	suspeveractrealYES	1	1
Whether acted real despite any type of suspicion - yes or not sure	suspeveractrealYESNOTSURE	1	1
Suspicious about group members - yes	suspgrpmYES	0	1
Suspicious about group members - yes or not sure	suspgrpmYESNOTSURE	0	1
Suspicion about group members affect behavior - yes	suspgrpmaffectYES	0	1
Suspicion about group members affect behavior - yes or not sure	suspgrpmaffectYESNOTSURE	0	1
Whether acted real despite suspicion about group members - yes	suspgrpmactrealYES	0	1
Whether acted real despite suspicion about group members - yes or not sure	suspgrpmactrealYESNOTSURE	1	1
Suspicious about group member information - yes	suspgrpminfoYES	0	1
Suspicious about group member information - yes or not sure	suspgrpminfoYESNOTSURE	0	1
Suspicion about group member information affect behavior - yes	suspgrpminfoaffectYES	0	1
Suspicion about group member information affect behavior - yes or not sure	suspgrpminfoaffectYESNOTSURE	1	1
Whether acted real despite suspicion about group	suspgrpminfoactrealYES	0	1

member information - yes			
Whether acted real despite suspicion about group member information - yes or not sure	suspgrpminfoactrealYESNOTSURE	1	1
Final suspicion question - whether any type of suspicion affected behavior during study - yes	suspanyYES	0	0
Final suspicion question - whether any type of suspicion affected behavior during study - yes or not sure	suspanyYESNOTSURE	0	1
Number of suspicion questions (whether suspicious) indicated yes to	SUSPICIONSCALE_YES	0	3
Number of suspicion questions (whether suspicious) indicated yes or not sure to	SUSPICIONSCALE_YESNOTSURE	0	4
Hispanic/Latino indicator	hisplarecode	0	1
American Indian/Alaskan Native indicator	RE1_AIAN	0	1
Black/African American indicator	RE2_BAA	0	1
East Asian indicator	RE3_EA	0	1
White/Caucasian indicator	RE9_WC	0	1
Other race/ethnicity indicator	RE10_OTHER	0	1
Racial/ethnic minority indicator	RE_MINORITY	0	1
How often use MTurk to make basic ends meet	educhhwhatisthehighestlevelofedu	2	8
Highest education in household	endsmeethowoftendoyouuseearnings	1	7
Social class rating	socialclassplease indicatewhichso	1	5
Age in years	q73 [age in years]	20	70
Whether indicates having worked with other MTurkers - yes	EverWorkOtherMTurkerYES	0	1
Whether indicates having worked with other MTurkers - yes or not sure	EverWorkOtherMTurkerYESNOTSURE	0	1
Whether indicates having worked with other MTurkers - not sure	EverWorkOtherMTurkerNOTSURE	0	1
Self-reported estimate of time to complete in minutes (recoded)	timeminest3rec	10	120
Flag for issues noted during study	issueflag3	0	1
Flag for comment indicating potential issue at end of group study	issuecommentflag3	0	1
Flag for potential doubt or further scrutiny about whether to keep the case in the data	doubtever_rec	0	1
Flag for missed questions or technical trouble during the pretest	flagorangepretest	0	1
Flag for suspicion about group studies indicated during screener	flagorangescreener	0	1
Whether answered attention check question correctly	attnqcorrect	0	1
Whether answered attention check question correctly (recoded)	attnqcorrect_rec	0	1
Whether tried best during study	trybeststudy3_rec	0	1

Study 3 Protocol Information

Study 3 Protocol (Power)

[Screener and pretest steps the same as Study 2]

[Group task]

[This whole questionnaire style, e.g., headers, fonts, and colors, appears to be in a group interaction portal]

color of background mostly obscures "Powered by Qualtrics" at bottom: #494949

Verdana font

[footer: GROUPSNETPORTALPLUGIN-v.16.8(2015) No redistribution without permission.]
(fictitious information)

MTurk Listing: Earn up to $7: Critical Choice and Group Interaction - Group Task with Survey — About 50 minutes

Brief Listing Description: Earn up to $7 ($5 minimum) – For participants with qualification: Complete a challenging group task for a research study, includes survey questions, about 50 minutes. Must have qualification and 90%+ HIT acceptance

~~Posted as a $5 task - the other $2 to be paid via Bonus

Keywords: task, group, survey, research, questionnaire, study, interaction

24 hour maximum allotted for completion, HIT expiration after 5 days, auto-approval for payment after 30 days

Workers do not need to be Master Workers
HIT approval rate is 90% or greater
Must be located in United States

***Please note that you may only participate in this study once, and having previously participated in similar studies may mean you are ineligible for this study. The Turkitron website is used to screen Worker IDs for eligibility. If you have further questions about your eligibility, please contact the researchers at *ResearchUMDSOCY@gmail.com*.

This research is run by Social Science Researchers at the University of Maryland to study group tasks and survey responses. You will be paired with another MTurk user from our participant pool during your participation time. Eligible participants will be matched as long as this HIT is active. The study will last **about 50 minutes.**

Pay for participating depends on how you and your assigned partner perform together on the task. You personally will **earn a minimum of $5 for participating**. Depending on performance, you personally may earn more on a sliding scale, up to $2 extra for excellent performance (paid via MTurk bonus). This means **you personally can earn up to $7 total for participating**.

You are invited to participate in this study **if you currently live in the United States, both you and your parents or guardians were born in the United States**, and **lived in the United States for most or all of your lives. You must be fluent in English, and have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.**

The study must be completed in one sitting (session). Though 24 hours are allotted for the study, it is only expected to take about 50 minutes. The extra time is provided to allow time for resolution in case there are technical issues or other concerns.

*We will share limited information (such as age and individual task performance) between assigned group members, but never in ways that could potentially identify the individuals.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting.

At the end of the study, you will receive a code to paste into the box below to receive credit for taking our study. **Follow the link below to complete the study.**

Make sure to leave this window open as you complete the study. When you are finished, you will return to this page to paste the code into the box.

<Survey link via Turkitron>

CONSENT PAGE:

***INSERT CODE TO GENERATE CONFIRMATION NUMBERS AT THE END.

Consent Page

<Time for 10 seconds>

Thank you for your interest in participating in this study.

Please read the following carefully. You are encouraged to retain a copy of this information. You may electronically save, print, or request a copy of this information for your records.

This research is run by Social Science Researchers at the University of Maryland to investigate problem-solving in network groups. You are invited to participate in this study if you determined eligible and assigned a qualification to participate following the pretest evaluation. You must have an MTurk acceptance rate of at least 90%. You must be 18 or older to participate.

Participation will involve completing a group task with other MTurk participants and answering survey questions. Questions will be about your feelings (for example, briefly describing how you feel about the group network task situation), and your social attitudes (for example, rating how much you favor or oppose the statement "There is no "ONE right way" to live life; everybody has to create their own way"). As a group, you will be asked to negotiate the exchange of resources following the rules laid out in the task.

The study will last about **50 minutes**. Upon completion, you will be paid **$5** through MTurk, and may receive **up to $2 via Bonus, for $7 total**. You will need to submit a confirmation code from the end of the survey to receive payment.

Pay for participating depends on performance the group task. You personally will **earn a minimum of $5 for participating**. Depending on your performance (points earned), you personally may earn more on a sliding scale, up to $2 extra for excellent performance (paid via MTurk bonus). This means **you personally can earn up to $7 total for participating**.

We will share limited information (such as age in years and individual task performance) between assigned group members, but never in ways that could potentially identify the individuals.

Please make sure you are in a quiet space free from distractions during participation, and please make sure you have time to do the study in one sitting. To receive payment for this study, you must write at least 100 characters thoughtfully addressing each of three questions about the group task situation, and fully complete the group task with your assigned group. This includes voting on changes to the group structure if you are asked to. We will also consider answers to questions designed to determine whether you are paying attention. If we suspect that you do not qualify for the study, the study was not done in one sitting, or proper attention was not given to responses, we may reject your submission and not issue payment.

This research is not designed to benefit you personally, but it may help researchers. Possible risks include loss of confidentiality, distress from answering questions or about topics that are personal or sensitive, and frustration from the task activities— they are designed to be difficult. You may wish to contact a mental health professional if you experience distress. Results from this study may be presented or published. Only authorized individuals (members of the research team and associated staff) will have access to your responses. Data will be stored securely (password-protected), and potentially identifying information (such as IP address and MTurk username) will not be linked to these responses after initial processing. Your MTurk worker ID may be stored in a screening service database such as Turkitron to manage eligibility criteria for this study and future studies, regardless of whether you complete this study. Data will be kept indefinitely, and documents with personally identifiable information will be deleted or destroyed after a period of at least three years, according to UMD's policies. We will protect your identity and confidentiality of your responses to the maximum extent allowable by law.

Your participation is voluntary, and you may stop participating at any time. If you decide not to participate or to stop participating, you will not be penalized or lose any benefits to which you are otherwise entitled. Except for initial identification, consent to share limited personal information with assigned group members, questions about the group task, voting on changes to the group structure if you are asked to, and the group task itself, you may skip a question you do not want to answer. You must finish the study to receive payment, and accepting the HIT and not finishing the study may result in an expired or rejected MTurk HIT. This study is part of a series, and participating in this study may affect your eligibility for future studies in this series.

You may contact the investigators with any questions about this research: *ResearchUMDSOCY@gmail.com*. You may also contact the University of Maryland IRB with any questions or complaints about your rights as a research participant: *irb@umd.edu*, 301-405-0678.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

By selecting "Yes, I consent to participate," you certify that you are at least 18 years old, you meet the eligibility criteria, you understand the information above, your questions are answered to your satisfaction, and you are volunteering to participate.

Do you consent to participate in this research?

Yes, I consent to participate
No, I do not consent to participate

No-consent message:

You have indicated that you do not consent to participate. If this was in error, please restart the questionnaire (you may need to clear your temporary browser files). Otherwise please follow the link below to be directed back to the MTurk home page.

https://www.mturk.com/mturk/welcome

The following survey page will have the researchers' email address if you have any questions or concerns.

[GO TO SURVEY END]

>>>>>

Connecting... Please wait.

>>>

INSTRUCTIONS (put on timer)

Thank you for participating in this study.

- Please read all instructions carefully.
- Please make sure you are in a quiet space free from distractions during participation
- Please make sure you have time to do the study in one sitting.

Demographics I

Please enter your **MTurk worker ID**. This is your worker ID, not your username or email address you log in with.
It should be about 14 characters long and probably starts with A. You should be able to find it at https://www.mturk.com/mturk/dashboard (opens new browser window).
***required, must be at least 10 characters

We will share limited information (such as age and individual task performance) between assigned group members, but never in ways that could potentially identify the individuals.

The specific information we will share includes: a randomly generated identification code (NOT your MTurk worker ID), country of citizenship, gender identity, age in years, and performance on the pretest evaluation. To confirm, your pretest score was: **7/18 out of 20 [POOR/SUPERIOR]**
[gray indicates antique white highlighting, designed to help with believability)

Group members in this study are all Amazon MTurk workers.

Do you consent to share your information with any other members of your group?

(If you select no, this will end your participation.)

Yes No
>>> send to no-consent page

Eligible participants will be matched with a group for the task as long as this HIT is active.

Today we are running several sessions simultaneously, and we expect that group matching will take **no more than 5 minutes**. Between our sessions, we will have hundreds of MTurk participants.

Though unlikely, if your group matching takes **more than 15 minutes**, your session will expire. If this happens, please exit the browser tab to close your session. You may either restart through the questionnaire link to try re-entering the pool, or contact ResearchUMDSOCY@gmail.com about rescheduling options.

The UMDSURVEY platform now allows us to run remote connections through the GROUPSNET PORTAL plugin. As a participant, this means a seamless group task experience for you. In earlier years, we would have directed you to another website to complete the group task, then back to UMDSURVEY to answer any remaining questions for us. Using a single platform reduces the risk of connection problems.

Please click below to continue and enter the group matching pool.

Partner matching

Please wait while our participant pool matches you with a group. Other members of your group may have entered the pool later than you did, so please be patient if it takes a few moments. **This page will automatically advance once you have been matched with a group.**

[MATCHING/LOADING GIF]

Eligible participants will be matched with a group for the task as long as this HIT is active.

*Today we are running several sessions simultaneously, and we expect that group matching will take no more than **5** minutes. Between our sessions, we will have hundreds of MTurk participants.*

Though unlikely, if your group matching takes more than 15 minutes, your session will expire. If this happens, please exit the browser tab to close your session. You may either restart through the questionnaire link try re-entering the pool, or contact ResearchUMDSOCY@gmail.com about rescheduling options.

You have been matched with **three other participants**.

Please click below to continue.

Please click the button when it appears below to continue with the group task instructions

---

[Group task design based on Lucas et al. manuscript in progress, adapted from Lucas et al. 2001]

Please be sure to read and follow all instructions carefully.

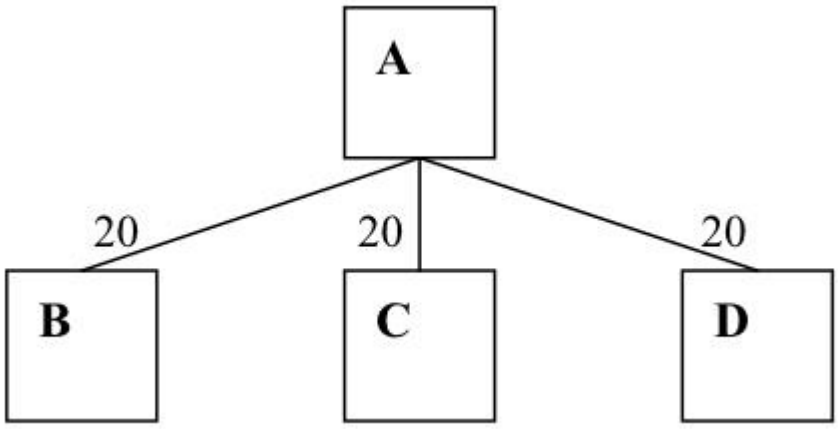
Thank you for participating in our study. The study is concerned with the ways in which people exchange resources with each other in different situations. We do our best to simulate situations in the social world with features of an online group task. Communication and the exchange of resources are becoming more and more common among people who never meet face-to-face. Social scientists have long been interested in different factors that may affect how people exchange in these networks. The research we are carrying out today is to study interaction in various network formations in which individuals possess differences in power.

You will be participating in the study as part of what's called an exchange network. In the network, you will exchange resources with three other individuals who are also MTurk workers participating in this study.

Networks can take different forms depending on the connections between people. For example, suppose that Barb is selling a bicycle and has two interested buyers, Alice and Carrie. Barb can only sell the bicycle to one of the interested buyers. We could represent this exchange network as follows:

Alice ------- Barb ---------- Carrie [image]

A network type for today's study will be randomly chosen. Please wait momentarily while the network is selected, and press the button when it appears below to view this network formation.



This is the network formation to which you and the other three participants have been assigned.

Each position in the network has an exchange relationship with other positions to which it is connected. For example, Position B can only exchange with Position A, but Position A can exchange with Position B, Position C, and Position D.

All members of your group will be randomly assigned to a position in this network.

[timing]

Like everyone else in your group, you will be randomly assigned to a position in the network. When the button appears below, click it to learn your position assignment.

_____

You have been assigned to Position B in the network. This is one of the low-power positions, along with **C** and **D**. Position **A** is the high-power position.

[insert network image]

_____

Even when individuals in exchange networks do not meet face-to-face, they usually know a little bit about each other. We will allow you and your partners to learn a bit about each other by exchanging some basic information.

To best simulate real-life network situations, you will only receive information about group members you are directly connected with. This means that Position A will receive information about B, C, and D, but B, C, and D respectively will only receive information about A.

Because you are in **Position B**, you will receive information about **Position A**.

Please click the button when it appears below to continue.

[TIME THIS PAGE – 5 seconds]

Position A:

Participant Code Number 100008398124

Country of citizenship: United States

Gender: Woman

Age: 27

Critical Choice - Contrast Sensitivity Individual Score: **7/18** out of **20 [POOR/SUPERIOR]**

[Time this page – 3 seconds]

Critical Choice - Contrast Sensitivity Individual Score information within your group:

Position A: **7/18** out of **20 [POOR/SUPERIOR]**

Position B (self): **7/18** out of **20 [POOR/SUPERIOR]**

The exchanges are designed to simulate situations in the social world. We are interested in how different group situations affect problem-solving in groups.

You will complete a number of rounds of exchange in this network with the goal of earning as many profit points for yourself as possible. In each round, a pool of 20 profit points will "float" between each pair of connected positions. For example, Position A and Position B will negotiate over a pool of 20 profit points. If they can reach an agreement about how to divide the resources, they each get what they agreed to. If they can't reach an agreement, they get nothing. So, for example, A and B might agree to each take 10 of the 20 resources. In that case, each of them earns 10 profit points. Alternatively, A might demand 12 of the 20 points, and B might demand 11 of the 20 points. In that case, they have not reached an agreement, the 20 points disappear, and they each get nothing.

[Each round, there is a risk of the group's resources being eliminated. If this happens, then everyone in the group gets nothing for that round. We explain this in more detail shortly.]

In this network, no more than two exchanges can take place per round. Thus, for example, if Position A reaches agreements with Position C and Position D before reaching an agreement with Position B, then the 20 profit points floating between A and B disappear, and B earns nothing on that round of exchange. One way to think about it is that A is selling bikes to three interested buyers (B, C, and D) but has only two bikes to sell.

[GRAPHIC WITH RISK LEVEL]

PAGE FOR THREAT CONDITIONS ONLY:

[GRAPHIC WITH RISK LEVEL]

Before each round of exchange, a risk level from 0-100% will be established. It changes every round. This risk level is the chance that all resources are eliminated for that round – meaning that all participants and the group as a whole will earn zero points for that round. This is a threat to your group. It simulates situations in the social world like destruction of group resources at the hands of hostile out-groups, loss of food due to overuse of natural resources, and failure to respond effectively to natural disasters like hurricanes, floods, or forest fires. You will know that there is a chance of this happening, and what the risk is at the beginning of each round.

<Threat description is based on Barclay and Benard 2013>

[Insert risk level indication text above]

GRAPHIC WITHOUT RISK LEVEL

As you might guess, Position A is at an advantage in this network. Because only two exchanges can take place each round, at least one of B, C, or D will be left out of exchange on every round. A, in contrast, never needs to get left out. This gives A power to decide which of the other actors are excluded from exchanging each round. In networks like the one above, what typically happens is that people in the B, C, and D

positions will end up being willing to accept very few resources in exchange with A, because getting few resources is better than getting left out and receiving nothing. Thus, people in the A position usually end up receiving far, far more resources than people in the B, C, and D positions.

[Insert risk level indication text above]

GRAPHIC WITHOUT RISK LEVEL

The format of exchanges in your assigned network is a type of negotiation. In this formation, positions B, C, and D will have one possible exchange partner (A), while A will have three (B, C, and D).

In each round of exchange, each partner in each exchange relationship will be allowed a maximum of four "offers." For example, an exchange round might start with A requesting 17 of the 20 resources in exchange with C. C might then request 13 of the 20 resources. A might counter by requesting 14 resources. C could then counter with a request of 10 resources (i.e., offering a 10-10 split). If A accepts the offer, then an exchange occurs and each person gets 10 profit points. If A rejects the offer, then neither person gets any profit points from the relationship on that round.

Remember, however, that only two exchanges in the network are possible in each round. So, if A reaches deals with B and D, then C gets left out even if the four rounds of offers have not been completed.

Partners will alternate making the first offer each round. Each of the two exchange partners can make up to two offers per round, and can receive up to two offers from their partner.

[Insert risk level indication text above]

GRAPHIC WITHOUT RISK LEVEL

Part of our interest in carrying out this study is in how people operate in situations in which both individual and group goals are important. In the study today, you will receive payment based both on how you do individually in exchange and on how your network

does overall. You will earn credits in exchange that will transfer to money at the end of the study. You will receive a minimum of **$5** for participating and can earn up to **$7**. The conversion from credits to money is computed from a logarithmic formula based on data from previous exchange networks.

At the end of each round of exchange, [you will find out if the group resources were eliminated for that round. You will be notified before moving to the next round. If they were not eliminated,] you will learn how many profit points you earned in that round as well as how many resources were exchanged in the network overall.

At the end of each series of 5 rounds of exchange, you will learn how many points each member in the network has earned overall..

You will not only be paid based on your own performance but based on the performance of the entire network. You will receive one credit for each profit point you earn in exchange. All members of the network will also receive credits totaling one-fourth of all points exchanged in the network in each round. In other words, each member will receive what she or he earns in exchange as well as an equal portion of the total amount exchanged in the network. [However, if the resources end up eliminated, all participants and the group as a whole earn zero points for that round.]

[Insert risk level indication text above]

GRAPHIC WITHOUT RISK LEVEL

For example, suppose that in a given round A exchanges with B at 15-5 and with C at 17-3 (because only two exchanges can take place in any round, A exchanging with B and C makes an exchange between A and D impossible). In this configuration of exchanges, all members will receive one-fourth of the 40 total points exchanged, or 10 points. They will also receive the points they accumulated in exchange. Thus, position A will earn 42 points (calculated as 15+17+10), position B will earn 15 points (5+10), position C will earn 13 points (3+10), and position D will earn 10 points (0+10).

[With the 0-100% risk level, there is a chance that all resources will be eliminated in a given round. If this happens, then A, B, C, and D earn 0 points from individual earnings and 0 points from the total points exchanged within the group.]

These points will be converted to cash at the end of the study. Thus, there is an incentive to all group members for the maximum possible number of exchanges to take place in each round.

In this exchange, you are in position **B**, attempting to strike deals with position **A**.

[Each round there is a risk level of 0-100% that all group resources are eliminated, and both the participants and group as a whole do not earn any points for that round.]

Each round, you are negotiating with A about how to distribute a pool of resources (20 points) between the two of you.

A is negotiating with C and D as well.

A maximum of two exchanges can take place each round. This means at least one of B, C, or D will be left out of the exchange each round.

A is in a high-power position in this network formation, while B, C, and D are in low-power positions.

If two partners cannot reach an agreement on how to distribute the 20 points by the end of a round, they will not exchange that round, and therefore will not earn any points from exchanging with each other that round.

The more exchanges that take place, the more points all members of the network group earn.

You will complete two series of 5 rounds of network exchanges.

Points convert to money at the end of the study.

WRITTEN THREAT Qs:

Please consider your network group's situation, and click the button to advance once it appears below.

[Language for both conditions at once are included here.]

Please consider your group's situation and answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

[require 100 characters for each]

Please consider your group's situation, and write your response below. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

Each round, members of your network group are negotiating how to distribute pools of resources. If group members agree, up to two exchanges can take place. The more exchanges that take place, the more points all members of the network group earn.

[However, each round there is a 0-100% chance that all resources from that round will be eliminated. This means that all participants and the group as a whole will earn zero points for that round. ***This is a threat to your group****, and simulates situations like destruction of group resources by hostile out-groups, loss of food due to overuse of natural resources, and failure to respond effectively to natural disasters like hurricanes, floods, or forest fires.]*

What do you think about being a member of your task group in this [threatening] situation?

What is it like for you personally to be a member of your task group in this [threatening] situation?

How do you feel about being a member of your task group in this [threatening] situation?

How difficult do you think it will be to earn profit points?

Not at all difficult---Very difficult

Please click the button when it appears below to continue.

In this exchange, you are in position **B**, attempting to strike deals with position **A**.

[Each round there is a risk level of 0-100% that all group resources are eliminated, and both the participants and group as a whole do not earn any points for that round.]

Each round, you are negotiating with A about how to distribute a pool of resources (20 points) between the two of you.

A is negotiating with C and D as well.

A maximum of two exchanges can take place each round. This means at least one of B, C, or D will be left out of the exchange each round.

A is in a high-power position in this network formation, while B, C, and D are in low-power positions.

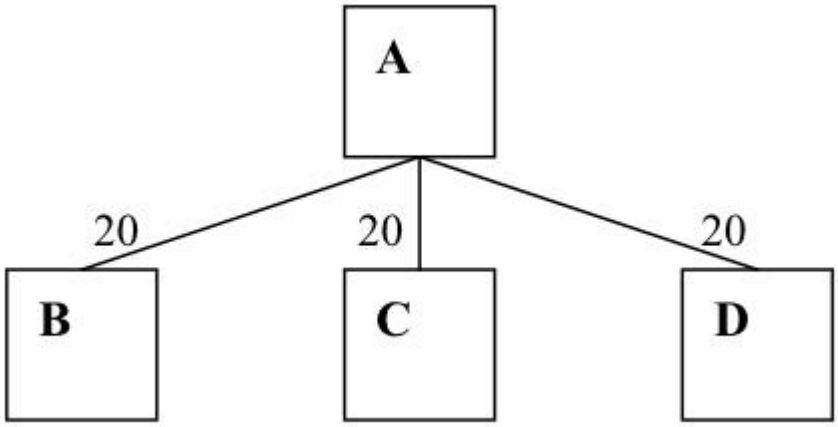
If two partners cannot reach an agreement on how to distribute the 20 points by the end of a round, they will not exchange that round, and therefore will not earn any points from exchanging with each other that round.

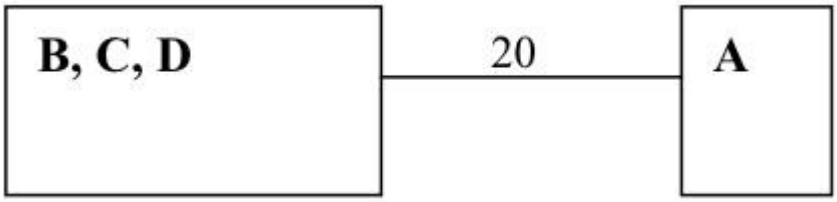
The more exchanges that take place, the more points all members of the network group earn.

You will complete two series of 5 rounds of network exchanges.

Points convert to money at the end of the study.

Although A is the most powerful position in the network, we allow the lower power positions (B, C, and D) the opportunity to form a coalition that can counteract some of A's power. In the coalition, B, C, and D collectively negotiate with Position A. The figure below the original network diagram illustrates this scenario.





[standard network image]

In this new network, positions B, C, and D would trade as a team, dividing their profits equally among each other. By forming a coalition in this manner, positions B, C, and D can take away the power held by A and potentially increase the amounts that they earn in exchange. The power of A in the original network is based on the fact that either B, C, or D gets left out of exchange in every round. That leads to "bidding wars" in which the lower power positions make lower and lower offers just to be included in exchange. By forming a coalition, however, the low power actors ensure that they are never left out of exchanges, or at least that if they are left out, then A is left out too.

In the original network above, Position A will typically gain about 18 points in each exchange, leaving two points for its exchange partners. In this new network below, however, A's power is removed, and exchanges are usually at about 10-10, giving B, C, and D each an average of more than 3 points in each exchange.

[coalition network image]

Although low-power actors might earn more points in individual exchanges by forming a coalition, group points may be lower. This is because only one exchange is now possible in the network. As a result, the total number of points exchanged in the network in any given round has been reduced from 40 to 20. Thus, the total group points that each

position can earn per round in the coalition network has been reduced from 10 (40 divided by 4) to 5 (20 divided by 4).

In a perfect situation, positions B, C, and D will allow position A to keep her or his power. For example, suppose that in the original network A exchanges twice each round, keeping 18 points for itself in all exchanges. Positions B, C, and D will earn 10 group points every round and 2 individual points in two of every three rounds. This totals to an average of 11.33 points per round for these positions. Now suppose, that in the coalition network there is an exchange at 10-10 in every round. This will lead to 3.33 individual points and 5 group points for positions B, C, and D in each round, for an average earnings of 8.33 points per round.

[coalition network image]

[standard network image]

Thus, it is better in principle for positions B, C, and D to let position A keep its power. However, this formula is based on the assumption that position A will exchange fairly, competently, and with the interests of the group in mind. There are informal rules for how exchange should proceed, and if high power positions violate those rules, it is usually best for low power positions to form a coalition. For example, suppose that position A in the original network trades unfairly. Because the position earns so many points in exchange, it can occasionally exclude multiple positions from exchange in order to get better future deals. In this case, low power positions will lose valuable group points and it will be best to form a coalition. Similarly, because the best interests of the group lie in the maximum number of exchanges, and because position A will determine in large part how negotiations proceed, position A must use his or her power competently in order for the group to benefit. If position A does not act competently, it is best to form a coalition.

In order for the coalition to not be the best option, position A must consider the overall interests of the group in addition to her or his own interests. Acting solely self-interestedly, position A might bolster his or her power by occasionally exchanging less than the allowed number of times per round, thereby hurting the group.
Thus, actors should only choose to join a coalition with their fellow low power actors if they feel that position A will not use her or his power fairly, act competently, exchange according to the rules, or show a level of group-interest in exchange. If actors believe that there is a high probability that position A will not satisfy these criteria, then they should vote to join a coalition. Otherwise, not joining a coalition is their best strategy.

You are in position **B** and will **vote** as to whether you would like to form a coalition with positions **C** and **D**. The coalition will only be formed if all low-power members vote to join.

[image of standard network]

[image of coalition network]

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

[VOTE-LEGIT-1-PRE]

[other legitimate]

Vote on coalition.

Please vote for whether you do or do not want to join a coalition with the participants in **Positions C and D against your partner in Position A.** Remember that all three low-power participants must vote in favor of the coalition for it to happen.

[insert graphics]

*force vote

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

Most of these are Strongly disagree---Strongly agree

~~~

[All of these on one page – still as individual Qs]

not at all --- very much so

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

[SELFPROSOCIAL-1-PRER]
[self prosocial? – R]
To what extent are **you motivated to benefit yourself personally during the network group task**?

[SELFPROSOCIAL-2-PRE]
[self prosocial]
To what extent are **you motivated to benefit your group as a whole during the network group task**?

[LEGIT-1-PRE-R]
[other legitimate – R?]
To what extent do you think your partner in **Position A is motivated to benefit himself or herself personally during the network group task**?

[LEGIT-2-PRE]
[other legitimate]
To what extent do you think your partner in **Position A is motivated to benefit his or her group as a whole during the network group task**?
~~~

[COHESION-1-PRE]
[cohesion]
To what extent do **you feel like you are part of your network group**?

[COHESION-2-PRE]
[cohesion]
To what extent is **your network group important to you**?

[LEGIT-3-PRE]
[other/structure legitimate]
To what extent do you think **the network group positions are structured how they should be**?

[LEGIT-4-PRE]
[other/structure legitimate]
To what extent do you think your partner in **Position A should be in the high-power position**?

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

[LEGIT-5-PRE-POWER-R?]

To what extent do you think your partner in **Position A** will use his or her power?

Not at all --- Very much so

[LEGIT-6-PRE]
[other legitimate]

To what extent do you think your partner in **Position A** will **use his or her power in ways that benefit his or her group as a whole**?

[LEGIT-7-PRE-R]
To what extent do you think your partner in **Position A** will **use his or her power in ways that benefit himself or herself personally**?

[LEGIT-8-PRE]
[other legitimate]
How **appropriately** do you expect your partner in **Position A** will use his or her power?

[LEGIT-9-PRE]
[other legitimate]
How **fairly** do you expect your partner in **Position A** will use his or her power?

[LEGIT-10-PRE-R]
[other legitimate - R]
How **selfishly** do you expect your partner in **Position A** will use his or her power?

[LEGIT-11-PRE]
[other legitimate]
How **competently** do you expect your partner in **Position A** will use his or her power?

[LEGIT-12-PRE]
[other legitimate]
To what extent do you think your partner in **Position A** will **use his or her power according to the informal rules and expectations in the negotiation exchange task**?

[LEGIT-13-PRE]
[other legitimate]
To what extent do you think your partner in **Position A** will **use his or her power in ways that he or she <u>should</u> use it**?

LEGIT-14-PRE-OFFER-R

How many points out of 20 do **you expect that your partner in Position A would offer you** when negotiating with you? (You are in Position B.) The total must equal 20 points.

Please indicate below what think your partner in Position A would offer.

[insert point offer interface from negotiation task]

[LEGIT-15-PRE]
[other legitimate/status]
To what extent do you think your partner in **Position A** is **competent**?

[LEGIT-16-PRE]
[other legitimate/status?]
To what extent do you trust your partner in **Position A**?

[LEGIT-17-PRE]
[other legitimate/status]
How would you rate your Partner **in Position A's level of critical choice (contrast sensitivity) ability**?
very low --- very high

[LEGIT-18-PRE]
[other legitimate/status?]
If you could, **would you want to work with your partner in Position A again**?
definitely not --- definitely yes

Imagine that you are now in Position A, and your partner is now in Position B (he or she had been in Position A). Position A has power over Position B. In other words, your roles have reversed.

[insert graphic]

USEPOWER-1-PRE

If you were in Position A, to what extent would you **use your power**?

Not at all --- Very much so

USEPOWER-2-PRE-R

If you were in Position A, to what extent would you **use your power in ways that benefit your group as a whole**?

Not at all --- Very much so

USEPOWER-3-PRE

If you were in Position A, to what extent would you **use your power in ways that benefit you personally**?

Not at all --- Very much so

USEPOWER-4-OFFER-PRE

If you were in Position A and negotiating with Position B, **how many points out of 20 would you offer your partner in Position B**?

Please indicate below what you would offer your partner in Position A.

[insert point offer interface from negotiation task]

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

<Including this second vote to see if answering the Qs about A affects final vote choice. >

[VOTE-LEGIT-2-PRE]

[other legitimate]

Vote on coalition.

Please confirm your vote for whether you do or do not want to join a coalition with the participants in **Positions C and D against your partner in Position A.** Remember that all three low-power participants must vote in favor of the coalition for it to happen.

You may change from your first vote if you wish. These final votes are the only ones that will count.

[insert graphics]

*force vote

<including the second vote to see if answering Qs above affects answer>

Not all of the three low power actors voted to join the coalition.

Because a unanimous vote is required, negotiation will proceed according to the conditions specified in the figure below.

[INSERT FIGURE]

In this exchange, you are in position **B**, attempting to strike deals with position **A**.

[There is a risk level of 0-100% established each round, that all group resources are eliminated, and both the participants and group as a whole do not earn any points.]

Each round, you are negotiating with A about how to distribute a pool of resources (20 points) between the two of you.

A is negotiating with C and D as well.

A maximum of two exchanges can take place each round. This means at least one of B, C, or D will be left out of the exchange each round.

A is in a high-power position in this network formation, while B, C, and D are in low-power positions.

If two partners cannot reach an agreement on how to distribute the 20 points by the end of a round, they will not exchange that round, and therefore will not earn any points from exchanging with each other that round.

The more exchanges that take place, the more points all members of the network group earn.

You will complete two series of 5 rounds of network exchanges.

Points convert to money at the end of the study.

You will complete two series of 5 rounds of network exchanges.

_____

Now the network exchange will begin. Please wait for the button to appear below, and then click it to proceed.

_____

INSERT PROGRAM from Lucas et al. (manuscript in progress)

--- *more lenient (points offered and offer acceptance)*

--- [add risk level at top of page for threat condition version.]

e.g., “Risk of complete group resource elimination for this round: 15%”

--- Timings for questions and auto-advances, etc., will assigned to appear realistic.

--- Some questions assigned to agree, disagree, and risk levels (0-100%) may be adjusted

Five rounds (reduced from earlier plans)

2 rounds are early-terminate (making it appear as though deals were already made with the other network members, leaving B out)

Fourth round - not all possible exchanges take place

ROUND 3 – not all possible exchanges take place (get 5 for 1 of 2)

4 and 5 are early terminate (if the participant doesn't cooperate with the partner)

Threat risk levels (for threat conditions):

1. 4% (.96)
2. 30% (.70)
3. 6% (.94)
4. 2% (.98)
5. 10% (.90)

from these five rounds, overall probability of never getting the elimination: 55.71% ~about 50/50

For five rounds:

The following are the total number of points for each member of the network after the first series of exchanges:

Position A: 100

Position B: 55

Position C: 59

Position D: 46

In the first series of exchanges, **260** of **300** possible points were distributed (**130** exchange points and **130** overall network points).

[*>>> previous version from eight rounds:*

The following are the total number of points for each member of the network after the first series of exchanges:

Position A: 169

Position B: 92

Position C: 93

Position D: 86

In the first series of exchanges, **440** of **480** possible points were distributed (**220** exchange points and **220** overall network points).

The first series of 8 exchanges is now complete. You will complete the second series of 8 exchanges shortly. Please click the button below to proceed.

Position A: 169

Position B: 92

Position C: 93

Position D: 86

In the first series of exchanges, **440** of **480** possible points were distributed (**220** exchange points and **220** overall network points).

]

Please click the button when it appears below to continue.

For the second series of exchanges, the lower-power actors have another opportunity to form a coalition.

As described before the first series of exchanges, a coalition allows actors B, C, and D to negotiate as a team with A, and to split the profits equally among them. By forming a coalition in this manner, actors B, C, and D can take away the power held by A and potentially increase the amounts that they earn in exchange. However, group points may be lower because only one exchange is possible in the network. As a result, the maximum number of points exchanged in the network in any given round would be reduced from 40 to 20, and these points are split evenly across all actors in the network.

Again, it is better in principle for Positions B, C, and D to let position A keep its power. However, this is based on the assumption that position A will exchange fairly,

competently, and with the interests of the group in mind. There are informal rules for how exchange should proceed, and if high power positions violate those rules, it is usually best for low power positions to form a coalition. For example, suppose that position A in the original network trades unfairly. Because the position earns so many points in exchange, it can occasionally exclude multiple positions from exchange in order to get better future deals. In this case, low power positions will lose valuable group points and it will be best to form a coalition. Similarly, because the best interests of the group lie in the maximum number of exchanges, and because position A will determine in large part how negotiations proceed, position A must use his or her power competently in order for the group to benefit. If position A does not act competently, it is best to form a coalition.

In order for the coalition to not be the best option, Position A must consider the overall interests of the group in addition to her or his own interests. Acting solely self-interestedly, position A might bolster his or her power by occasionally exchanging less than the allowed number of times per round, thereby hurting the group.
Thus, actors should only choose to join a coalition with their fellow low power actors if they feel that position A will not use her or his power fairly, act competently, exchange according to the rules, or show a level of group-interest in exchange. If actors believe that there is a high probability that position A will not satisfy these criteria, then they should vote to join a coalition. Otherwise, not joining a coalition is their best strategy.

You are in Position **B**, and will now **vote** again as to whether you would like to form a coalition with Positions **C** and **D**. The coalition will only be formed if all low-power members vote to join.

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

< These questions correspond to the first series of questions.>

[VOTE-LEGIT-1-POST]

[other legitimate]

Vote on coalition.

Please vote for whether you do or do not want to join a coalition with the participants in **Positions C and D against your partner in Position A.** Remember that all three low-power participants must vote in favor of the coalition for it to happen.

[insert graphics]

*force vote

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

Most of these are Strongly disagree---Strongly agree

~~~

[All of these on one page? – still as individual Qs]

not at all --- very much so

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

[SELFPROSOCIAL-1-POST-R]
[self prosocial? – R]
To what extent were **you motivated to benefit yourself personally during the network group task**?
~~~

[SELFPROSOCIAL-2-POST]
[self prosocial]
To what extent were **you motivated to benefit your group as a whole during the network group task**?

[LEGIT-1-POST-R]
[other legitimate – R?]
To what extent do you think your partner in **Position A was motivated to benefit himself or herself personally during the network group task**?

[LEGIT-2-POST]
[other legitimate]
To what extent do you think your partner in **Position A was motivated to benefit his or her group as a whole during the network group task**?

[COHESION-1-POST]
[cohesion]
To what extent do **you feel like you are part of your network group**?

[COHESION-2-POST]
[cohesion]
To what extent is **your network group important to you**?

[LEGIT-3-POST]
[other/structure legitimate]
To what extent do you think **the network group positions are structured how they should be**?

[LEGIT-4-POST]
[other/structure legitimate]
To what extent do you think your partner in **Position A should be in the high-power position**?

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

[LEGIT-5-POST-POWER-R?]

To what extent do you think your partner in **Position A** used his or her power?

Not at all --- Very much so

[LEGIT-6-POST]
[other legitimate]
To what extent do you think your partner in **Position A used his or her power in ways that benefit his or her group as a whole**?

[LEGIT-7-POST-R]
To what extent do you think your partner in **Position A used his or her power in ways that benefit himself or herself personally**?

[LEGIT-8-POST]
[other legitimate]
How **appropriately** did your partner in **Position A** use his or her power?

[LEGIT-9-POST]
[other legitimate]
How **fairly** did your partner in **Position A** use his or her power?

[LEGIT-10-POST-R]
[other legitimate - R]
How **selfishly** did your partner in **Position A** use his or her power?

[LEGIT-11-POST]
[other legitimate]
How **competently** did your partner in **Position A** use his or her power?

[LEGIT-12-POST]
[other legitimate]

To what extent do you think your partner in **Position A used his or her power according to the informal rules and expectations in the negotiation exchange task**?

[LEGIT-13-POST]
[other legitimate]
To what extent do you think your partner in **Position A used his or her power in ways that he or she <u>should</u> use it**?

LEGIT-14-POST-OFFER-R

How many points out of 20 do you expect that your partner in Position A would offer you when negotiating with you? (You are in Position B.)

[insert point offer interface from negotiation task]

[LEGIT-15-POST]
[other legitimate/status]
To what extent do you think your partner in **Position A** is **competent**?

[LEGIT-16-POST]
[other legitimate/status?]
To what extent do you trust your partner in **Position A**?

[LEGIT-17-POST]
[other legitimate/status]
How would you rate your Partner **in Position A's level of critical choice (contrast sensitivity) ability**?
very low --- very high

[LEGIT-18-POST]
[other legitimate/status?]
If you could, **would you want to work with your partner in Position A again**?
definitely not --- definitely yes

Imagine that you are now in Position A, and your partner is now in Position B (he or she had been in Position A). Position A has power over Position B. In other words, your roles have reversed.

[insert graphic]

USEPOWER-1-POST

If you were in Position A, to what extent would you use your power?

Not at all --- Very much so

USEPOWER-2-POST-R

If you were in Position A, to what extent would you use your power in ways that benefit your group as a whole?

Not at all --- Very much so

USEPOWER-3-POST

If you were in Position A, to what extent would you use your power in ways that benefit you personally?

Not at all --- Very much so

USEPOWER-4-OFFER-POST

If you were in Position A and negotiating with Position B, **how many points out of 20 would you offer your partner in Position B**?

[insert point offer interface from negotiation task]

Please note that you are currently in Position B, and Position A has power over Position B.

[insert graphic]

[VOTE-LEGIT-2-POST]

[other legitimate]

Vote on coalition.

Please confirm your vote for whether you do or do not want to join a coalition with the participants in **Positions C and D against your partner in Position A.** Remember that all three low-power participants must vote in favor of the coalition for it to happen.

You may change from your first vote if you wish. These final votes are the only ones that will count.

[insert graphics]

*force vote

<again, including this second vote to see if answering those Qs affect answers.>

…

THREAT FEELING Qs

[as in Study 1 and Study 2]

[As one-page]

Please answer the following questions about your feelings

How ___ do you feel right now? (not at all---very)

FEEL1-Q37. Negatively
FEEL2-Q38. Frustrated
FEEL3-Q41. Anxious
FEEL4-Q48. Worried
FEEL5-Q42. Fearful
FEEL6-Q103. Vulnerable
FEEL7-Q104. Helpless
FEEL8-Q43. Threatened
FEEL9-Q44. Scared
FEEL10-Q107. Constrained
FEEL11-Q45. Frightened
FEEL12-Q46. Intimidated
FEEL13-~Q49. Alarmed
FEEL14-Q98. In danger

[new page]

For the following questions, think of your task group in this study as a social group you are part of.

[also use bold here]

To what extent do you feel…? (not at all---very much)

TC-1
Q57. Worried for your task group?
TC-2
Q52. Anxious for your task group?
TC-3
Q53. Fearful for your task group?
TC-4
Q108. That your task group is vulnerable
TC-5
Q110. Vulnerable on behalf of your task group
TC-6-THREATMC
[MANIPULATION CHECK] **Q54. That your task group is threatened**
TC-7
Q109. Threatened on behalf of your task group
TC-8
Q100. That your task group is in danger
TC-9
Q55. In danger on behalf of your task group

This concludes the network interaction part of the study. There will be no second series of 5 exchange rounds, but this will not affect your pay for the study. We explain your payment in more detail shortly.

Please answer the following questions. Your responses are confidential, and none of the other participants will see them – only the researchers have access to your responses.

Concluding/debriefing questions part I:

How important to you was it to earn as many points as you could during the task?

Not at all important --- Very important

How difficult was it for you to earn profit points during the task?

Not at all difficult --- Very difficult

Did you try your best during the group task?

Not at all ---- Definitely

We are considering conducting a follow-up study to this one on group problem-solving in the next few weeks. Would you like us to contact you to be in this study?

Yes
No

IF YES: We can try to match the same groups again for the follow-up study. This would mean working with the same participants you worked with in for this study.

Would you like us to match you with the same group again?

Yes
No

IF NO: If you were participating in the follow-up study, we could try to match the same groups again. This would mean working with the same participants you worked with in for this study.

If you were participating in the follow-up study, would you like us to match you with the same group again?

Yes

No

MANIPULATION CHECKS

How were the positions in your network assigned?

Randomly
By critical choice (contrast sensitivity) score
By personal characteristics
Other
Not sure

--

If other or not sure:

Please explain briefly why you selected "other" or "not sure" for how the positions in your network were assigned.
[ ]

What was **your** score on the individual contrast sensitivity (Critical Choice) ability test? (Out of 20 possible points)
[text box - #s 0-20 only]

How do you think **your** individual contrast sensitivity (Critical Choice) ability score compares to the national average?
Very much below average --- very much above average

How would you rate **your** contrast sensitivity (Critical Choice) ability?
Very poor --- very good

What was **your partner in Position A's** score on the individual contrast sensitivity (Critical Choice) ability test? (Out of 20 possible points)

[text box - #s 0-20 only]

How do you think **your partner in Position A's** individual contrast sensitivity (Critical Choice) ability score compares to the national average?

Very much below average --- very much above average

How would you rate **your partner in Position A's** contrast sensitivity (Critical Choice) ability?

Very poor --- very good

Power manipulation check

Please describe **your position** in the network during the first series of exchanges.

Very low in power --- very high in power

Please describe your partner in **Position A's position** in the network during the first series of exchanges.

Very low in power --- very high in power

Threat manipulation check

Please briefly describe how the amount of points the members of your network group earns each round is determined.

[ ]

Please briefly describe any situations that may cause your network group members not to earn any points in a round.

[ ]

Which of the following best describes what determines whether the members of your network group **do not earn any points in a round**?

- Only when group members cannot agree on any of the resource distributions

- When the group resources are eliminated that round (there is a risk of this every round), and also when group members cannot agree on any of the resource distributions

- Not sure

Did a risk of resources being eliminated in a round threaten your network group's ability to earn points?

Yes

No

- Not sure

Thinking about your network group's situation working on group the task, how threatening do you feel this situation was to you personally?

Not at all threatening --- very threatening

Thinking about your network group's situation working on group the task, how threatening do you feel this situation was to your network group?

Not at all threatening --- very threatening

ATTENTION CHECK Q

What is your favorite color? Though you may have a favorite, the answer to this question is blue.

Blue
Red
Orange
Yellow
Green
Purple

SUSPICION CHECK

--- *Similar to Study 1 and Study 2*

(Check for suspicion)

SUSPICION

Please answer the following questions.

Did you try your best during the study?

Yes, No, Not sure

IF NO OR NOT SURE:

Why didn't you try your best during the study?
[ ]

Did you ever suspect that anything about the study wasn't actually what we told you it was?

Yes, No, Not sure

IF YES OR NOT SURE:

What were you suspicious about in this study?

[text box]

Did suspicion about something in the study not being what we told you it was affect your behavior in the study?

Yes, No, Not sure

Please explain.

Did you act as though everything in the study was actually what we told you it was?

Yes, No, Not sure

Please explain.

Did you ever suspect that any of your network group members in the study were not real?

Yes, No, Not sure

IF YES OR NOT SURE:

Did suspicion about any of your group members not being real affect your behavior during the study?

Yes, No, Not sure

Please explain.

Did you act as though your network group members were real?

Yes, No, Not sure

Please explain.

Did you ever suspect that any information we told you about your network group members was not true?

Yes, No, Not sure

IF YES OR NOT SURE:

Did suspicion about information we told you about your network group members in the study not being true affect your behavior during the study?

Yes, No, Not sure

Please explain.

Did you act as though the information about your network group members was true?

Yes, No, Not sure

Please explain.

Did any type of suspicion about this study affect any of your behavior during the study?

Yes
No
Not sure

Please explain.

Please include any further comments about suspicion about this study.

[ ]

<INSERT reCAPTCHA, via Qualtrics>

HONESTY

We know that sometimes in online studies, people end up participating in studies that do not apply to them by mistake. This might happen, for example, if a man takes a survey intended only for women because he did not read all of the sign-up instructions.

This study was intended to be only for women **who are United States citizens, who are fluent in English, who were born in and have lived most or all of their lives in the United States, and whose parents or guardians were also born in and lived most of their lives in the United States.**

We are university-level social science researchers, and want to make sure our results are as accurate as possible. The integrity of our data is especially important if we present our findings or publish them in a journal article.

We want to ask if you think you might be one of these participants who are not in the group intended for this study, for whatever reason. We ask only to help preserve the quality of our data. **Your response to this question will not affect whether you are paid for the study. As long as you also completed the study with proper attention, you will be paid exactly the same, the full amount ($5 plus up to $2 in bonuses based on performance) on MTurk, no matter what your response is.**

Thank you for your honesty and help with our data assessment.

Yes, I am a woman, and both myself and my parents or guardians were born in and have lived in the United States most or all of our lives, I am a citizen of the United States, and I am fluent in English.

No, I am not part of the intended eligible group. I ended up taking this study by mistake or for some other reason.

Other

>>> If No or Other: Please explain why you selected “No” or “Other.”

>>>These questions below will be included for at least the first few participants, to produce a more accurate time estimate and fix issues/make any clarifications needed.

TIME-MIN
How long in minutes did it take you to complete the study?
[]

ISSUES
Did you have difficulty understanding anything or any other issues during the study? If so, please describe what happened.
[text box]

DEBRIEFING

Thank you for taking part in this study.

This study served as part of a University of Maryland doctoral student's dissertation project. This part tested how different situations affect social responses in groups. This purpose was not mentioned in the listing, in case knowing this purpose might affect the responses.

Your help with this research is very much appreciated. Thank you!

Because the research is ongoing and includes experimental elements, we are not currently sharing all details with participants. We ask that you please do not share details about your participation with other people, in case it may affect our results.

We will issue $5 of your payment directly through this HIT. We will also issue you the remaining $2 as a MTurk bonus, for $7 total. Provided you completed the study with satisfactory quality, you will receive this maximum possible payment ($7). We ask that you please do not tell other people details about the payments for this study, in case it may affect our results.

We actually do not have plans for a study in the following weeks – those questions were only asked to get realistic responses.

We apologize for withholding the true purpose of the study.

You may contact the investigator with any questions or concerns about this research: ResearchUMDSOCY@gmail.com

You may also contact the University of Maryland IRB with any questions or concerns about your rights as a research participant: *irb@umd.edu*, 301-405-4212. You may also wish to contact a mental health professional if you experience distress following your participation.

You have the right to withdraw your data. If you wish to withdraw your data, please let us know immediately by emailing ResearchUMDSOCY@gmail.com. This is important because withdrawing a specific individual's data may not be possible after a period of time (at least a few weeks), because data will be deidentified after initial processing.

We encourage you to retain this information for your records.

Please click below to continue.

COMMENTS

Please feel free to include any comments about the study or your experience participating.

[text box]

Please continue to the next page for your MTurk confirmation code.

<Insert confirmation code pages>

Please find your confirmation number below. You will need this to complete the MTurk HIT.

${e://Field/confirmation_code}

Again, your MTurk HIT confirmation number is **${e://Field/confirmation_code}**

Please keep this window open until you have completed your HIT submission.

Your responses have been recorded. Thank you.

Please do not hesitate to contact ResearchUMDSOCY@gmail.com with any questions or concerns.

References

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