# MORE PEOPLE BUT LESS MIND: HOW NUMBER AFFECTS MIND PERCEPTION AND DECISIONS TO HARM

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A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Psychology.

Chapel Hill
2015

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## ABSTRACT

Erin Cooley: More People But Less Mind: How Number Affects Mind Perception and Decisions to Harm
(Under the direction of B. Keith Payne)

Most moral codes agree that harming another person is wrong. However, instances in which people cause widespread harm abound. One reason for this discrepancy between moral values and behavior may be that people have difficulty imagining groups of people experiencing suffering. In this research, I first propose that people sometimes harm groups more readily than individuals. Second I propose that greater harm for groups (versus individuals) may be driven by the perception that groups are less capable of mentally experiencing sensations such as pleasure and pain. In a Preliminary Study I tested whether people are more likely to harm many than one when the targets are outgroup members. Contrary to hypotheses, participants were more likely to harm one than many regardless of group membership. Next, in Study 1, I examined whether people perceive mind differently in groups of people as compared to individuals from those groups. As predicted, across 19 categories, groups were perceived as having less mental capacity for experience than individuals. Study 2 extended these findings to examine whether reduced perceptions of experience among groups is driven by cues to being a group and to evaluate implications for decisions to harm. Results revealed that participants attributed less experience to a group described as a single entity as compared to a group described as a collection of individuals, or an individual. Interestingly, however, participants were most likely to harm the group described as a collection of individuals, and perceptions of experience did not mediate decisions to harm. Results suggest that people sometimes are more likely to harm many than one,

and that groups are attributed less of a capacity to experience than individuals. Future research should explore the mechanisms behind these seemingly independent effects.

## ACKNOWLEDGEMENTS

Completing a doctoral program is not easy. I want to thank the following people for giving me the support, strength, and guidance to make it to this point. I am honored and grateful to have had the opportunity to go through this process surrounded by such awe-inspiring people.

- Keith Payne, for your patient mentoring throughout the past six years. I honestly could not imagine having a better mentor throughout this journey. As I mentor my own students, I often notice that the words that I use, and the research strategies that I share, come directly from lessons you have taught me. Your guidance about how to evaluate whether an idea will advance theory and how to write simply about complex topics are indispensable. In addition to giving me advice about how to be a good academic, you have always provided a morale boost when I most needed it. I look forward to continuing to bounce ideas off of you and learning from you for the rest of my career.
- Chet Insko, for being a patient and open mentor who taught me an immense amount about the research process. Your research was some of the first that really hooked me into social psychology and sparked my interest in studying ideas I am passionate about (i.e., intergroup conflict). Thank you for helping to shape me into a better researcher and scholar.
- Barbara Fredrickson, for being a role model for how to be a world-renowned, distinguished professor, while also maintaining a genuine humbleness and concern for the well-being of those around you. You have made me feel cared for not only as a researcher, but also as a person. I aspire to self-actualize into someone just like you. I

hope I am lucky enough to have you as a life-long mentor as I continue to grow and develop as a researcher and as a person.

- Sara Algoe, Kurt Gray, Beth Kurtz-Costes, Melanie Green and Sophie Trawalter, for your guidance and support on my masters, dissertation, grant proposals, and general life as an academic. I admire you all greatly and feel honored to have been able to work with you. I am excited to continue learning from all of you and working together in the future.
- Barry Schlenker, for teaching my undergraduate methods course and inspiring me to pursue social psychology as a career. Our philosophical discussions about how to present research findings in a compelling, yet transparent, way stay with me to this day. I am extremely grateful that you empowered me to enter a doctoral program and pursue the research questions that I feel are so important.
- To my research assistants and students, not only for helping with the research process, but for helping me to become a better researcher, teacher, and mentor. Some research assistants and students who stand out are Jean Phillips, Jessica Curtis, Erika Scheib, Shilpi Misra, Michael Parrish, Brooke McKenna, Hannah Brown, Alexy Hernandez, and Morgan Lancaster.
- My fellow graduate student friends and colleagues, Jazmin Brown-Iannuzzi, Kristjen Lundberg, Kent Lee, Daryl Cameron, Heidi Vuletich, Patty Van Capellen, Carrie Adair, Elise Rice, Laura Kurtz, Keenan Jenkins, Lindsay Kennedy, Paul Miceli, Joe Simons, Jenna Clark, Brett Major, Tanya Vacharkulksemsuk, Zan Isgett, Jennifer MacCormack, Chelsea Schein, Neil Hester, and Yen-Ping Chang. I have so many cherished memories as we have all made this trek through a doctoral program. Some of my favorites are shared laughs during long car or plane rides to conferences, bus rides to Duke, happy

hours, random Davie hallway conversations, among many other memories. I have felt so grateful to be surrounded by such brilliant, yet warm and humble, people. You all motivate me to be a better academic and a better person.

- My unwavering supporters and friends Brooke Magnus and Jordy Carpenter for having been by my side for the weddings and the funerals, the struggles and the successes, and everything else that occurs in the span of 5 to 6 years of graduate school. I have not met such incredible and loyal friends before in my life and can't imagine finding anyone better to call life-long friends.
- Ankita Rao, for being a moral guide, an inspiration, and one of the most fantastic people I have ever met. Your mission, your values, and your dedication to making the world a better place are unrivaled. Although our journeys may keep us living in separate countries, I cherish our friendship. Honestly, I am honored to be your friend.
- My parents, Margaret and Guy Cooley, for giving me unwavering love and support—even at times when I am sure that was not easy. You are the most brilliant and kind people I have ever met: you inspire people, help others when they are in need, and you continuously give without seeming to ever take for yourselves. You have shaped my values of compassion, empathy, and perspective-taking. Everything that is good about me comes from you.
- My brother, Bryan Cooley, for having always inspired me as my older brother. I have tried to emulate you from early on--to know about the world as you do, to strive to make the world a better place as you have, to embrace different cultures and religions, and to try to find a way to a more peaceful world.

- My grandfather, Leo Nussbaum, for helping to shape my values of education, a global mindset, and attempting to mitigate inequality in all forms. Your dedication to racial equality at a time when racial prejudice was more socially acceptable than it is today serves as a continual source of inspiration. I hope to carry forward the best of your legacy.
- To all of my extended family, I could not be who I am without you all. I am so incredibly lucky and grateful to feel so supported and inspired by each of you.
- My husband, Joshua Wilson, for taking this journey of life by my side. You have been there to lift me up when stresses felt overwhelming and to empathize with the highs and the lows that can come with trying to navigate how to develop a fulfilling career. You supported me through the job search process even though the decisions we had to make were not always easy for either one of us. Your words of encouragement before all of my biggest hurdles helped to carry me through. You are thoughtful, loving, and genuinely push me to become the best person I can be. Thank you for being there for me. I am excited to grow alongside you as we enter this next phase of our journey together.

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# CHAPTER 1: INTRODUCTION

In 2011 Occupy Wall Street protesters spread from the confines of Wall Street to stage a country-wide protest against wealth inequality in America. A unifying theme behind the movement was that the greed and corruption of the wealthiest 1% led the majority of the wealth to remain in the hands of a few. Building from this rhetoric, reports concurrently began to surface that Wall Street workers (often considered to be among the wealthy 1%) scored higher on measures of psychopathy than the general population (Decovny, 2012; Silver, 2012). Despite ultimately being discredited (Grohol, 2012), this link between Wall Street and psychopathy was intuitively appealing. How else does one explain the behaviors of people such as Bernie Madoff or the executives behind the Enron scandal who caused widespread financial harm to many people with a seeming lack of remorse?

Like the financial harm visible at the national level, physical harm, too, is sometimes directed toward many people at once—especially in the context of global conflict. For example, when deciding to launch a military attack, leaders are making a decision that will physically harm groups of people rather than individuals. Thus, sources of conflict, both within our country and internationally, highlight the importance of understanding how people conceive of harming many people at once.

In the present research, I propose that harm directed toward groups of people, in most cases, is not driven by psychopathy, but rather by the basic workings of a healthy mind. I reason that while people may find it easy to think of an individual experiencing pain and suffering,

imagining the suffering of a group of people may be more difficult to do. An interesting implication of perceiving the mind of a group as less capable of experiencing pain and suffering is that harming a group may ironically feel more moral than harming an individual--despite the fact that more harm is objectively being caused. To test these ideas, I will first examine experimentally what seems to be the case from observation—that people are sometimes more likely to harm many than one. Next I will examine whether groups are attributed less capacity to experience sensations such as pleasure and pain, and whether this differential mind perception of groups leads to a greater likelihood of harming groups. Such a hypothesis is consistent with existing research on factors which influence moral decisions to help, described next.

## CHAPTER 2: LITERATURE REVIEW AND THEORETICAL BACKGROUND

### Moral Decision-Making and Number

Although no existing research has manipulated the number of potential victims in decisions to harm, research *has* examined the effect of number on another dimension of moral decision making: the choice to engage in helping behaviors. In deciding to help, number has a surprising effect. The more people who are suffering, the less people feel compassion or sympathy for their plight. This reduction in compassion as the number of victims rises has been called the "collapse of compassion" (Slovic, 2007). Because compassion helps motivate people to help (Batson et al. 1991), this collapse of compassion means that many suffering victims are ironically less likely to receive help than a single suffering individual (Slovic, 2007; Small, Loewenstein, & Slovic, 2007). This is why hearing about a single American soldier who was killed by a roadside bomb abroad can instill more compassion and distress than hearing statistics summarizing the thousands of Americans who died in the war in Iraq. Because the idea that people feel less compassion for many than for one is not intuitively obvious, much research has explored mechanisms that may explain this finding.

Some research has proposed that groups elicit less moral emotions than individuals because groups are more abstract (Schelling, 1968). Evidence for the role of abstraction in decisions to help comes from research on the identifiable victim effect. Holding the number of victims constant, people show more compassion toward a suffering identified individual (e.g., identified by name and photo) as compared to a suffering unidentified individual (Small & Lowenstein, 2003). If lack of identification inhibits emotional responses, then groups may

receive less compassion, not because of the number of victims, but because group members are not individually identified. More recent research, however, conflicts with this interpretation. Kogut and Ritov (2005) gave some participants information about multiple identified victims and others information about a single identified victim. Next they examined emotional responses and decisions to help. Interestingly, even when people received the same identifying information about groups as they had about an individual, insensitivity to mass suffering remained. Not only did participants show decreased compassion for an identified group as compared to an identified individual (Kogut & Ritov, 2005), but they also reported less blame for perpetrators who had harmed many identified victims as compared to one identified victim (Nordgren & McDonnell, 2011). Although these findings do not rule out the possibility that even identified groups are more abstract than identified individuals, it does indicate that the collapse of compassion is not fully accounted for by a lack of identification of groups. More recent research argues that reduced compassion for groups is not driven by the way that groups are mentally represented, but rather by the motivations of the perceiver.

Supporting a motivated account, Cameron and Payne (2011) compared reactions to a suffering identified individual and a suffering identified group and found that the collapse of compassion was contingent on the expectation of a request for help. In this research, participants only showed the collapse of compassion toward many suffering victims when they had the expectation that they would later be asked to donate. Those who did not expect to be asked for a financial commitment actually reported feeling more for many victims than for one. Further evidence for a motivated account came from the finding that the collapse of compassion was greatest among those who were most skilled at regulating their emotions.

If groups of suffering victims elicit less help than a suffering individual then groups may also elicit more harm than an individual. However, the differences between helping and harming are also important to consider. Most people actively work to avoid harming others (do-no-harm principle; Baron, 1995; Baron & Ritov, 2004; Hauser, Tonnaer, & Cima, 2009). In fact, harm is so undesirable that people struggle to harm one person even when that harm will result in saving many (Foot, 1967; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Petrinovich, O'Neill, & Jorgensen, 1993; Mikhail, 2002). Harm aversion even extends to fake harm (Cushman, Gray, Gaffey, & Mendes, 2012). In two studies, Cushman and colleagues (2012) found that participants exhibited higher levels of physiological stress both when imagining and enacting fake harm to another individual (e.g., slicing someone's throat with a fake knife) as compared to witnessing the same harmful actions done by others. Given this strong aversion to actively causing harm to an individual, why is it that harm still occurs? Research suggests that one of the central ways that people enact harm while maintaining their sense of moral integrity is through denying the experience of suffering to a potential victim. In essence, they deny the victim a human mind.

**Dehumanization Enables Harm**

In his exploration of the abuse at Abu Ghraib in Iraq, Zimbardo found a common theme among the American prison guards' descriptions of why they abused the Iraqi prisoners. Prison guards emphasized that the lack of a shared language made it particularly easy to view the Iraqi prisoners as less than human, and that this enabled them to do things they never thought they could to another human being (Zimbardo, 2007). Similar research conducted within the criminal justice system finds that executioners, as compared to other prison staff, report the greatest levels of dehumanization of those killed—perhaps as a moral justification of the harm they directly

cause (Osofsky, Bandura, & Zimbardo, 2005). Together this research suggests that dehumanization may enable moral disengagement such that causing harm no longer feels blameworthy (Bandura, 1999; Leidner, Castano, Zaiser, & Giner-Sorolla, 2010; Harris & Fiske, 2011). A more nuanced form of dehumanization is infrahumanization. Infrahumanization denies others uniquely human emotions such as guilt and shame but not emotions that are shared with animals such as anger and fear (Cortes, Demoulin, Rodriguez, Rodriguez, & Leyens, 2005; Leyens, Paladino, Rodriguez-Torres, Vaes, Demoulin, Rodriguez-Perez, & Gaunt, 2000; Leyens, Rodriguez-Perez, Rodriguez-Torres, Gaunt, Paladino, Vaes, & Demoulin, 2001; Haslam 2006). In effect, targets are denied a uniquely human essence making them indistinguishable from non-human species (Leyens et al., 2001). Importantly even this subtle dehumanization has big consequences. In one study, outgroups who were manipulated to be the most infrahumanized were discriminated against the most (Pereira, Vala, & Leyens, 2009). Similarly, recent research has linked ethnoreligious and political conflict to reduced perceptions of outgroups' ability to experience love (a secondary emotion) as compared to hate (a primary emotion; Waytz, Young, & Ginges, 2014).

In the existing research on both dehumanization and infrahumanization, outgroups are often represented by individual exemplars. For example, to assess dehumanization of homeless people, researchers have used images of individual homeless people (Harris & Fiske, 2006; Harris & Fiske, 2011). However, people are frequently encountered around others. Thus, it is important for research to parse apart the effect of viewing a single individual as compared to a group on dehumanization and mind perception more generally. This is especially important given the link between mind perception and decisions to harm. To better understand how mind perception of groups may underlie decisions to harm groups of people, I will draw from the

framework of Gray and colleagues' (2012) theory of dyadic morality. Within this theory, the authors argue that mind perception underlies all moral judgments—including, decisions to harm (Gray, Young, & Waytz, 2012; Gray & Wegner, 2011).

**Mind Attributions and Group Harm**

In their theoretical account of morality, Gray and colleagues (2012) argue that the perception of two interacting minds forms a stable template which underlies all moral judgments. This dyadic interaction of minds consists of both a moral agent who enacts help or harm and a moral patient who is the recipient of these behaviors. Importantly, these interacting minds are not one-dimensional. In a large internet survey of over 2000 people, mind perception was characterized by two distinct dimensions: experience and agency (Gray, Gray, & Wegner, 2007). Furthermore, central to the topic of the current proposal, this survey found that mind perception in terms of experience was more strongly correlated with desires to avoid harm than mind perception in terms of agency.

Although not explicitly discussed within their dyadic template of morality, groups, much like individuals, can be attributed minds (Bloom & Veres, 1999; Kashima et al., 2005; Waytz & Young, 2012; Knobe & Prinz, 2008). In fact, recent research indicates that groups not only can have minds, but that the mind attributed to a group can be completely independent of the mind attributed to individual members of that group (Jenkins, Dodell-Feder, Saxe, & Knobe 2014). In one study, Jenkins and colleagues (2014) demonstrated that under some circumstances, people will attribute mental states, which they operationalized as beliefs and preferences, to the group as a whole that they do not attribute to any of its members (and vice versa). As an example, imagine a group is choosing music for a fundraising event and that half of this group prefers classical music while the other half prefers heavy metal. As a compromise, the group chooses jazz for the

event. In this scenario, observers would likely say that the group as a whole prefers jazz but would not attribute this preference to any individual member of the group.

Other research has compared group mind to individual mind, but by operationalizing mind in terms of a capacity for agency rather than beliefs and preferences. In particular, Watyz and Young (2012) found that groups are attributed less agency than individual members of that group; however they also found evidence for a trade-off such that the more that the group as a whole was attributed a mind in terms of agency, the less agency that was attributed to individuals within that group. Furthermore, these authors found that groups who were most group-like or entitative (e.g., high in proximity, similarity and common fate; Campbell, 1958) were more likely to be attributed a unified group mind than less entitative groups. Together these findings, along with those of Jenkins and colleagues (2014), converge on the idea that groups can be attributed minds of their own. The present research will extend these findings to examine how perceptions of mind in terms of experience vary in response to groups as compared to individuals from those groups. I expect that groups, and especially entitative groups, will be perceived as having less of a capacity for mind in terms of experience than individuals from those groups. Furthermore, I expect this reduced perception of experience within groups to have potential implications for decisions to harm groups.

This hypothesis builds from existing research which has examined perceptions of experience for corporate groups. In particular, Knobe and Prinz (2008) found that sentences describing a corporate group as having experience (e.g., "Acme Corp. is experiencing great joy") were rated as sounding much more strange than those describing the same corporate group as having agency (e.g., "Acme Corp. intends to release a new product this January"). Although consistent with the present hypotheses, this work has been criticized for the potential influence of

experimenter bias (Strickland & Suben, 2012; Phelan, Arico, & Nichols, 2012). In particular, the researchers who generated the sentences that were then rated on "strangeness" by participants were not blind to hypotheses. Furthermore, as others have pointed out, results may have been driven by participants' stereotypes of companies as being agentic rather than biased perceptions of mental capacities of groups in general (Rai & Diermeier, 2015).

Addressing some of the concerns with the work of Knobe and Prinz (2008), Rai and Diermeier (2015) recently compared mind perception of companies with individual entrepreneurs in terms of both experience and agency. This research also manipulated whether the target was a victim of a moral transgression or a perpetrator of a moral transgression. When couched as victims, companies were attributed less experience than individual entrepreneurs; when couched as villains, companies and individual entrepreneurs were attributed similar levels of agency. However, because experience was only measured among participants assigned to the victim condition (but not the perpetrator condition), this research does not test how experience is attributed to groups as compared to individuals from those groups in a neutral context. Additionally, this existing research does not control for stereotypes of companies. Although stereotypes of companies and entrepreneurs are likely similar, it is still possible that companies were stereotyped as higher in competence and lower in warmth than entrepreneurs and that this drove perceived differences in perceptions of mental capacities for experience. Such a possibility is consistent with some of my previous research that demonstrates that groups elicit stereotypes more strongly than individuals from those groups (Cooley, Payne, & Insko, under review). To address this possibility, in the present research, I will directly measure stereotypes of companies as well as stereotypes of company members. By doing so, I will be able to statistically control for

stereotypes in analyses examining mind perception in order to establish the unique effects of being a group on mind perception beyond the influence of stereotypes.

In summary, existing research and theory suggest that groups can be perceived as having a mind. The present research will build from this existing research to examine whether group mind is systematically different than individual mind. In particular, I will measure mind attributions of experience and agency to groups as compared individuals from those groups. I predict that groups and especially entitative groups will be perceived as having less mental capacity for experience as compared to individuals. Given that attributions of experience are related to decisions to harm (Gray et al., 2007), if groups are not attributed mind in terms of experience to the same degree as individuals, then groups may be more vulnerable to harm than individuals. For this to be the case, attributions of group mind should conflict with the ability to perceive individual suffering.

## CHAPTER 3: OVERVIEW OF STUDIES

Across three studies I will examine differences in mind perception of groups as compared to individuals as well as its consequences for decisions to harm groups of people. First, in a Preliminary Study, I aimed to experimentally establish that groups are sometimes more likely to be harmed than individuals. To do this, I tested whether people are more likely to harm groups of outgroup members as compared to individual outgroup members in the context of global warfare. Results did not support hypotheses. Instead results revealed two main effects such that people were less likely to harm ingroup members than outgroup members and less likely to harm many than one. Because these results ran counter to my hypothesis that outgroup groups would be harmed more than outgroup individuals, I next focused on my second hypothesis that groups may be attributed less of an ability to experience sensations such as pleasure and pain than individuals. In particular, in Study 1, I examined how people attribute mind to groups of people as compared to individuals from those groups. Supporting hypotheses, across 19 categories, groups were attributed less mental capacity for experience than individuals from those groups. Consistent with prior work (Waytz & Young, 2012), groups were also attributed less agency than individuals. Finally, Study 2 tested whether an entitative group was attributed less mind than a group described as a collection of individuals (i.e., low entitativity). Study 2 also examined decisions to harm. Although groups were, indeed, attributed less capacity for experience than was a collection of individuals or an individual, participants were more likely to harm the less entitative group than the entitative group or a single individual. Together these results indicate

that groups are attributed low levels of experience and that, sometimes, people more readily harm many than one. However, contrary to expectations, variations in mind perception did not account for decisions to harm.

## CHAPTER 4: PRELIMINARY STUDY

In a Preliminary Study that motivated this dissertation project, I tested whether groups, and especially groups of outgroup members, were more likely to be harmed than individuals in the context of global warfare. In particular, participants reported their endorsement of launching a drone that would injure innocent groups or individuals that belong to an ingroup (i.e., Americans) or an outgroup (i.e., Afghans). I predicted that there would be a main effect of group membership such that people would be more likely to endorse harm toward the outgroup. This idea is supported by decades of research on love for the ingroup and biases toward outgroups (e.g., Brewer, 1999). However, I expected this main effect to be qualified by an interaction of number and group membership. In particular, when deciding to harm one's ingroup, I expected participants to be sensitive to number in an intuitive way: harming a group of ingroup members should be less likely than harming a single ingroup member. I reasoned that because ingroups are often perceived to be less homogenous than outgroups (Park & Rothbart, 1982; Linville, Fischer, & Salovey, 1989; Park & Judd, 1990; Ostrom, Carpenter, Sedikides, & Li, 1993), that ingroup groups may be perceived as multiple individuals with high levels of experience and, thus, difficult to harm. For outgroups, however, I expected number to be important in a counterintuitive way. Because outgroups are often perceived as homogenous they may be more likely to be attributed a group mind with low levels of experience. This should make harming an outgroup group easier than harming an outgroup individual.

Data collection for Study 1 had already begun at the time of my dissertation proposal. First I will report the pattern of findings that was apparent in the partial sample at the time of my proposal, then I will report the final results with the full sample.

## Method

### *Participants*

Participants were 297 students[1] in a marketing course at University of North Carolina at Chapel Hill who completed the study for course credit. I collected part of this sample ($N$ = 119) before my dissertation proposal and completed data collection in the following semester.

### *Design*

The design was a 2(Group Membership of Collateral Damage: ingroup vs. outgroup) X 2(Amount of Collateral Damage: 1 vs. 11 people harmed) factorial design with both factors manipulated between-subjects.

### *Procedure*

After agreeing to an electronic informed consent participants learned that there would be an attention check within the study. Next participants read a brief piece of information about the controversy of drone strikes launched by America abroad. They also learned that they would be asked to make a decision about a drone strike in a hypothetical scenario that would follow.

Participants were then given a scenario in which they had to decide whether to launch a drone strike in an area of Afghanistan. This strike would kill a known terrorist leader, but would also cause varying amounts of collateral damage. Some learned that the drone would kill 11 innocent Afghan civilians, some learned the drone would kill 11 innocent American civilians, some learned the drone would kill one identified Afghan civilian, and some learned the drone

[1]Although our target minimum sample size was 200 students, we continued collecting data until the end of the last week dedicated to data collection leading to a larger sample.

would kill one identified American civilian (see Appendix for wording). Identified single victims were identified through a first and last name. Participants indicated how much they supported the drone strike ("How supportive would you be of the decision to go ahead with this drone strike?) and how approving they would be of the drone strike ("How approving would you be of this drone strike?") on 1 (*not at all*) to 100 (*extremely*) sliding scales. Participants also were asked to imagine that the decision was time urgent and that they needed to make a forced choice of "*Yes*" or "*No*."

Directly after making this forced choice rating, participants were asked to report how similar Americans are to one another and how similar Afghans are to one another on a 1 (*not at all*) to 100 (*extremely*) sliding scale as a measure of group homogeneity. Participants completed the study by indicating whether they identified as an American and reported other demographic information such as gender, overall political conservatism, and separate items for social and economic conservatism. Finally, they completed the attention check which instructed them to ignore the actual statements on that survey page ("This study was easy to complete," "This study was worthwhile," and "This study was confusing") and instead respond with 1 (*strongly disagree*) to all questions.

## Results

### *Preliminary Analyses*

Endorsement of launching the drone was calculated as the average of three items: approval for launching the drone, support for launching the drone, and the forced choice of whether to launch the drone (-1 = *no*; 1 = *yes*). Before averaging these variables together they were standardized; thus, endorsement is expressed in *z* scores. These three items were highly reliable ($\alpha$ = .93).

***Main Analyses Partial Sample (N = 119)***

At the time of the proposal I had collected about half of the desired sample. To test my main hypothesis on the partial sample, I conducted a 2 (Group Membership of Collateral Damage: ingroup vs. outgroup) X 2 (Number of Collateral Damage: 1 vs. 11) between-subjects ANOVA predicting endorsement of harm. First, a main effect of group membership of the target revealed that participants were less likely to harm American targets ($M$ = -.19; 95% CI [-.42, .05]) than Afghani targets ($M$ = .20; 95% CI [-.04, .44]), $F(1, 115) = 5.17$, $p = .03$, $\eta_p^2 = .04$. The predicted interaction was not significant but the means were in the predicted direction, $F(1, 115) = 1.31$, $p = .25$, $\eta_p^2 = .01$ (see Figure 1). In particular, means indicated a diverging effect of number of people harmed based on group membership. Groups of Americans were less likely to be harmed ($M$ = -.29; 95% CI[ -.42, .05]) than an individual American ($M$ = -.08; 95% CI[-.42, .26]). This pattern was reversed for outgroup members. In particular, groups of Afghan civilians were descriptively more likely to be harmed ($M$ = .29; 95% CI [.05, .63]) than an individual Afghan civilian ($M$ = .12; 95% CI[-.23, .45]). This pattern of effects was consistent with my hypotheses.

***Main Analyses Full Sample (N = 297)***

After the proposal, data collection was completed. Using the full sample, I again ran the 2(Group Membership of Collateral Damage: ingroup vs. outgroup) X 2(Number of Collateral Damage: 1 vs. 11) between-subjects ANOVA predicting endorsement of harm. Results of this analysis now revealed two main effects but the predicted interaction was not significant (see Figure 2). A main effect for group membership indicated that participants were less likely to endorse the drone strike when potential victims were from America ($M$ = -.22; 95% CI [-.37, -.08]) as compared to from Afghanistan ($M$ = .23; 95% CI [.08, .38]), $F(1, 291) = 18.14$, $p < .001$,

$\eta_p^2$= .06. The main effect of number indicated that participants were less likely to endorse the drone strike when it would harm many people (*M* = -.12; 95% CI [-.27, .02]) as compared to a single individual (*M* = .13; 95% CI [-.02, .28]), *F*(1, 291) = 5.64, *p* = .02, $\eta_p^2$ = .02. The predicted interaction of group membership X number was not significant, *F*(1, 291) = .11, *p* = .74, $\eta_p^2$= .00. Thus, inconsistent with the pattern in the partial sample, group membership did not moderate the effect of number of potential victims on endorsement of harm. Instead, participants showed an ingroup bias, avoiding harming ingroup members more so than outgroup members. Furthermore, reflecting predominantly utilitarian motives, participants seemed motivated to minimize harm overall.

**Discussion**

In a Preliminary Study, I tested whether, in the context of outgroups, people may be more likely to harm many than one. Results revealed two intuitive main effects, but not the predicted interaction of group membership and number. In particular, participants were *less* likely to harm groups as compared to individuals and showed a general preference for the ingroup such that drone strikes were less likely to be endorsed when the collateral damage would be people from America as compared to people from Afghanistan. These findings are consistent with research on harm aversion (Baron, 1995) such that participants were more reticent to harm many than one as well as intergroup biases such that participants were more averse to harming ingroup members than outgroup members (Brewer, 1999).

Although my prediction that outgroup groups may elicit greater harm than outgroup individuals was not supported in Study 1, there are a variety of reasons why I may not have found evidence for my hypothesis. One possibility is that the very political nature of the scenario means that many motivations (e.g., utilitarian motives, views on war, social

liberalism/conservativism, etc.) were likely operating. For example, it is possible that only those with high levels of prejudice toward people from Afghanistan, positive attitudes toward drone strikes, or who are in support of the war in Afghanistan would be motivated to harm many outgroup members more than one. Because I did not measure these factors, I was unable to examine their potential role as moderators. Furthermore, because people in general have such a strong aversion to causing physical harm, utilitarian motives may, under most circumstances, overwhelm factors that may otherwise lead people to harm groups of people. Perhaps more subtle sources of harm, such as reputational or financial harm, would be more susceptible to motives distinct from utilitarianism.

Because the Preliminary Study did not support my hypothesis that outgroup groups would be harmed more than individuals, in Study 1, I tested my second hypothesis that people would exhibit differential mind perception of groups as compared to individuals from those groups. Previous research on mind perception has found that mind perception can be explained by two distinct factors: experience and agency. In the following study, I thus examined perceptions of experience and agency for groups and individuals from a variety of categories. I expected that people may find it more difficult to consider groups having a mind in terms of experience and thus, groups may be attributed lower capacities for experience than individuals from those groups. For individual targets I included both identified (by name) and unidentified individuals. Because groups are often unidentified (i.e., individual members are not referenced by name) this allowed me to test whether any differences in mind perception between groups and individuals is driven by differences in identification rather than being perceived as a group.

Finally, previous research indicates that motivations can affect what type of mind people tune into when evaluating outgroups. In particular, Waytz and Young (2014) found that giving

people motivations to affiliate with an outgroup, such as China, led people to preferentially focus on China's capacity for mind in terms of experience. Conversely, when given motivation to predict China's behaviors, which they term effectance motivation, people preferentially focused on understanding China's capacity for mind in terms of agency. To extend upon these findings I tested whether motivations in the form of prejudice toward particular social categories might bias perceptions of an outgroup's capacity for different types of mind. In particular, I reasoned that people may be particularly likely to perceive groups as having less mind than individuals when prejudice toward the overarching category is high. If this is the case, then future research could test whether such systematic dehumanization may serve to justify widespread harm that people desire to enact because of their prejudice.

## CHAPTER 5: STUDY 1

In Study 1 I examined perceptions of experience and agency of groups and individuals from 19 different categories (e.g., companies, national groups, racial/ethnic groups etc.). Overall, I predicted that groups would be attributed less mind in terms of experience than either identified or unidentified individuals from those groups.

Additionally, for the racial/ethnic categories, I included measures of prejudice in order to examine whether greater prejudice moderates reduced ascription of mind to groups as compared to individuals from those categories. I reasoned that perceiving disliked groups as low in the capacity to experience could be one way that people justify widespread harm toward disliked groups. Other recent research has found that motivations can affect which types of mind people attend to (Waytz & Young, 2014). Here, I attempted to extend these existing findings to examine how motivations affect perceptions of an underlying capacity for different types of mind.

### Method

#### *Participants*

Participants were 177 workers[2] collected through Amazon Mechanical Turk (Mturk) who received $.55 in exchange for completing the study. Participants were, on average, in their early 30s (*M* = 33), a majority female (60%), and White (81%).

[2]Although we posted enough payments for 180 workers, three participants did not submit valid completion codes. Thus, they were paid, but did not appear to have completed the study.

### *Design*

Participants made ratings of a randomly selected type of target (group, identified individual, unidentified individual) on mind attributions in terms of both agency and experience across 19 categories. Each participant made ratings of all 19 categories; however for each category, participants only rated either an individual or a group.

### *Procedure*

After signing an informed consent and completing a brief attention check, participants learned that they would read about a variety of social targets and be asked to rate to what degree each target is capable of things such as self-control or pain and pleasure. Next, participants rated 19 different social targets. Seven of these targets were taken from previous work on mind perception of individuals (Gray et al., 2007; i.e., dog, wild animal, baby, young girl, dead woman, robot, person in vegetative state), five targets represented companies (i.e., accounting company, advertising agency, Google, Facebook, investment firm), and six targets were racial/cultural groups (i.e., Afghans, Americans, Canadians, Russians, Black Americans, and White Americans). Finally, one target was a sports team. Participants rated each of these targets on 8 items which assessed different perceptions of mind on 0 (*not at all*) to 100 (*extremely*) sliding scales. Four items assessed capacities for experience (i.e., perceived capacity for hunger, physical or emotional pain, physical or emotional pleasure, and fear) and four items assessed capacities for agency (i.e., perceived capacity for planning, exercising self-control, remembering, and acting morally). Participants were randomly selected to rate either a group, unidentified individual or identified individual separately for each of the 19 categories.

Participants completed the study by reporting their attitudes toward Arabs, Afghans, Canadians, Black Americans and White Americans using feeling thermometers. In particular

participants rated their feelings toward each target from 0 (*cold/unfavorable*) to 100 (*warm/favorable*). Participants concluded the study by reporting demographic information and receiving a randomly generated completion code to enter on Mturk in order to receive their subject payments.

## Results

### *Preliminary Analyses*

First, I calculated perceptions of agency and experience separately for each type of target by averaging responses across the four items assessing agency ($\alpha$ = .94) and the four items assessing experience ($\alpha$ = .95). Higher numbers on both experience ($M$ = 70.75, $SD$ = 35.79) and agency ($M$ = 61.87, $SD$ = 33.30) indicate greater mind perception.

### *Main Analyses*

**Mind Perception across Targets.** First I collapsed across type of target and plotted the means and 95% confidence intervals separately for ratings of agency and experience for groups, unidentified individuals, and identified individuals. As can be seen in Figure 3, results revealed the predicted effect of type of target on mind perception. In particular, overall, groups were rated as significantly lower in experience ($M$ = 58.89; 95% CI [56.85, 60.94]) and agency ($M$ = 55.41; 95% CI [53.48, 57.35]) than either identified or unidentified individuals. However ratings of identified individuals on both experience ($M$ = 76.71; 95% CI [74.67 78.74]) and agency ($M$ = 65.07; 95% CI [63.14, 66.99]) did not differ from ratings of unidentified individuals on experience ($M$ = 76.63; 95% CI [74.59, 78.68]) and agency ($M$ = 65.07; 95% CI [63.13, 67.01]). As can be seen in Figure 3, reduction of mind attribution to groups as compared to individuals was particularly strong for perceptions of experience. In sum, across the 19 categories, groups

were rated as significantly lower in experience than either identified or unidentified individuals. Identified and unidentified individuals did not significantly differ from one another.

Interestingly, when I looked at the 95 % confidence intervals separately for each type of target, the predicted pattern of reduced mind attribution to groups, especially in terms of experience, was particularly apparent and consistent toward the five different types of companies that were included in the study (see Figure 4). In particular, for each company, the company as a whole was rated as significantly lower in experience and agency than either the identified or the unidentified individuals. Consistent with hypotheses, this reduced mind perception of companies, as compared to individual company members, was significantly stronger for perceptions of experience. (Summary statistics of mind perception for non-company categories appear in Table 1.)

**Motivated Mind Perception of Groups Versus Individuals.** Next, I examined whether greater levels of prejudice toward the different national/racial categories moderated the effect of type of target (i.e., group, unidentified individual, identified individual) on perceptions of mind. In particular, I hypothesized that those with the highest levels of prejudice toward the category may be most likely to attribute lower experience to groups as compared to individuals from those categories. I tested this hypothesis by conducting separate one-way (Type of Target: group, identified individual, unidentified individual) ANOVAs for each national/racial category predicting perceptions of experience and agency. To examine moderation by prejudice, I added responses on a feeling thermometer (coded so that higher values indicate greater prejudice or feeling "cold" toward the target) as a continuous covariate. This continuous covariate was allowed to interact with condition.

Results of these analyses revealed that for ratings of Black Americans, White Americans, Canadians, and people from Afghanistan, the Type of Target X Prejudice interaction did not significantly predict perceptions of experience or agency, all *F*s > 1. This finding conflicts with my hypothesis that people with higher levels of prejudice toward a particular social category may be motivated to ascribe less experience to groups from that category as compared to an individual from that category as a way to justify widespread harm.

Interestingly, there was a main effect of level of prejudice on perceptions of both experience and agency for each category. In particular, across all national/racial categories, people with higher levels of prejudice toward that category also perceived less experience and agency in the mind of that social category regardless of the type of target (see Table 2). In sum, although prejudice did not lead to reduced mind attribution to groups more than individuals, prejudice did decrease perceptions of both agency and experience for all of the national/racial categories examined.

**Discussion**

Across 19 different categories, results indicated that groups were perceived as having different types of minds than individuals. In particular, groups were attributed significantly less experience and agency than individuals from those groups regardless of whether those individuals were identified by name. Critically, as predicted, reduced mind perception of groups was particularly strong for perceptions of experience. Together, these findings indicate that participants found it particularly difficult to consider groups in general as having experiences such as pleasure and pain and that differences in mind perception for groups as compared to individuals was not driven by whether individuals were identified by name.

In Study 1, I also tested whether prejudice toward social categories may drive reduced ascription of mind to groups from those categories as compared to individuals from those categories. I reasoned that such a pattern of findings would be consistent with motivated mind perception such that people with greater prejudice may be motivated to ascribe less mind to groups in order to justify harming more people from disliked categories. I did not find evidence for this hypothesis. Instead there was simply a main effect of prejudice such that greater prejudice toward the category led to less ascriptions of mind in terms of both experience and agency regardless of the type of target (i.e., group or individual). This is consistent with other research which finds that people engage in motivated mind perception. For example, research has indicated that when participants learned that their ingroup engaged in a massive killing of outgroup members, they subsequently denied that outgroup emotional experiences—especially emotional experiences that had been linked to humanity in previous research (Castano & Giner-Sorollo, 2006).

Although I examined many different types of categories, the pattern of reduced mind perception for groups was particularly strong among the five categories that were companies. These companies included specific companies such as Google and Facebook as well as generic companies such as an "accounting company." An interesting implication of this finding is that, despite the fact that the U.S. government has decided that corporations should have some of the rights traditionally reserved for individuals (Citizens United v. Federal Election Commission, 2010), it appears that people do not ascribe mental capacities to companies as a whole. Because of the topical relevance of mind perception of companies, and the consistent pattern of effects for companies, in Study 2, I focused on mind perception of a company and attempted to link this to decisions to harm the company. In particular, I expanded upon my Study 1 findings in three ways.

First, I attempted to replicate the finding that groups are attributed less mind in terms of experience than individuals. However in addition to comparing perceptions of a group with an individual, I also added in another group condition that altered the focus of participants from the group as a whole to the collection of individuals that compose the group. This subtle manipulation stems from some of my related research which has found that entitative groups (i.e., those described as high in proximity, similarity, and common fate; Campbell, 1958) are attributed less mind in terms of experience than less entitative groups. In particular, in previous unpublished data I have found that 5 colleagues headed to the same business meeting (an entitative group) are rated as significantly lower in experience than 5 people headed to separate business meetings (a non-entitative group; Cooley & Payne, unpublished data). Thus, it seemed possible that reduced attributions of experience for groups as compared to an individual would be strongest when participants were led to focus on the group as a whole as compared to the individuals that compose the group.

A second purpose of Study 2 was to ascertain whether reduced mind perception for companies as compared to individuals within those companies was driven by stereotypes that people hold about companies in general. For example, some have argued that companies tend to be stereotyped as cool and calculating and that this may drive differences in mind perception (Phelan, Arico, & Nichols, 2012; Rai & Diermeier, 2015). Consistent with this possibility, in previous research, I have found that groups tend to accentuate the activation of stereotypes more than individuals (Cooley, Payne, & Insko, under review). Thus, it is possible that companies as a group were perceived more stereotypically than individuals from those groups and that this was driving differences in mind perception in Study 1. Despite these arguments, I did not expect that stereotypes would account for differences in mind perception of companies. Instead, it seems

more likely that mind perception is a prerequisite for stereotyping to occur. For example, if someone does not have the capacity to experience emotional pleasure or pain, it should be unlikely that judgments of emotional warmth will be relevant. However, to statistically rule out this alternative explanation, Study 2 directly measured and controlled for stereotyping of companies. In particular, I measured stereotyping along two dimensions under which previous research indicates that all stereotypes can be organized: warmth and competence (Fiske, Cuddy, & Glick, 2007). These two dimensions of stereotyping are particularly appropriate in the present research because of the surface similarity of stereotypes of warmth with mind attributions of experience and stereotypes of competence with mind attributions of agency. Because of the surface similarity of these constructs, demonstrating that differences in mind perception of companies occur above and beyond stereotypes would provide strong support for my hypotheses.

Finally, I examined whether differences in mind perception of groups, leads people to be more likely to endorse harm of groups. In particular, I predicted that a company described as an entitative group would be attributed less experience than a company described as a collection of individuals or a single individual working for the company. Because perceptions of experience have been shown to be negatively correlated with decisions to harm in previous research (Gray et al., 2007), I further predicted that people would be most likely to endorse harm of the company described as an entitative group. Such a finding would be interesting because it would mean that sometimes people are more likely to endorse harm of many than one.

## CHAPTER 6: STUDY 2

In Study 2, I had multiple goals. First, I examined whether decreased perceptions of experience for companies in Study 1 was driven by cues to being an entitative group. To do this, Study 2 compared mind perception of a company as a whole (group-focus) with mind perception of a collection of individuals who comprised the company (group-composition-focus) or an individual working for the company (individual-focus). I hypothesized that the company in the group-focus condition would be rated as the lowest in experience due to the perception of a single group mind, while the company in the group-composition focus would be rated as the highest in experience due to the perception of multiple individual minds. I expected perceptions of the experience of an individual to fall between these two conditions. Second, I examined whether decreased mind perception of groups in terms of experience mediated greater harm of groups. Finally, I attempted to differentiate mind perception of experience and agency from stereotypes of warmth and competence (Fiske, Cuddy, & Glick, 2007) by measuring and then controlling for stereotypes in analyses of mind perception.

### Method

#### *Participants*

For the analyses examining mind perception, I eliminated one participant who did not complete the items measuring mind in terms of experience. The final sample consisted of 249 workers from Mturk who were paid $.55 for completing the study. On average participants were 31 years of age, a majority female (46%) and White (84%).

### *Design*

Study 2 was a one-way (Type of Target: group-focus, group-composition focus, individual-focus) between-subjects design. The main dependent variables were the same items measuring perceptions of experience and agency as in Study 1 as well as decisions to cause reputational harm.

### *Procedure*

After signing an electronic informed consent, participants completed a brief attention check and then were randomly assigned to read about a small accounting company in New York or an individual from that company. Those who read about the company read one of two descriptions of the company that varied only slightly in focus. The group-focus condition emphasized the company as a group (i.e., "an accounting company comprised of 15 people") and the group-composition focus emphasized the multiple individuals that composed the company (i.e., "15 people who compose the accounting company"). Next participants rated their randomly assigned target on the same four items assessing experience and agency as used in Study 1 as well as four items assessing stereotypes of warmth (i.e., unfriendly, insensitive, sociable, caring) and four items assessing stereotypes of competence (i.e., skilled, capable, disorganized, lazy). Ratings of mind and stereotypes appeared in a randomly generated order and were answered on -10 (*not at all*) to 10 (*extremely*) scales.

To assess decisions to harm, participants were next given a hypothetical scenario involving the accounting company. In particular, participants learned that the randomly assigned type of target had made an error that would allow the participant to financially benefit in a completely legal way. Critically, the participant also learned that the more that he or she chose to financially benefit, the more reputational harm would be caused to the randomly assigned target.

The participant was then asked to choose how much he or she would decide to financially benefit from the mistake. In particular, the participant could choose to benefit $15,000 and cause *severe* reputational damage (1), benefit $10,000 and cause *moderate* reputational damage (2), benefit $5,000 and cause *mild* damage (3), or take no action (4). Finally participants reported how similar they thought employees of the accounting company were to one another, a measure of implicit emotions, and demographic information before being debriefed (see Appendix for all materials).

## Results

### *Preliminary Analyses*

As in Study 1, one of the main dependent variables was perceptions of mental capacities for agency and experience. I calculated perceptions of agency and experience by calculating the average response across the four items assessing agency ($\alpha$ = .87) and the four items assessing experience ($\alpha$ = .93). Higher numbers on both experience ($M$ = 5.57, $SD$ = 4.71) and agency ($M$ = 6.02, $SD$ = 3.10) indicate greater perceptions of experience and agency. Next, I calculated average stereotypes of warmth ($M$ = 2.28, $SD$ = 3.06) and competence ($M$ = 4.46, $SD$ = 2.95) so that I could examine the effect of condition on mind perception above and beyond the influence of stereotypes. Both measures of warmth and competence were relatively reliable ($\alpha$ = .73; $\alpha$ = .75 respectively). The other dependent variable was one item assessing decisions to harm which was reverse coded so that higher numbers indicated greater harm ($M$ = 1.99, $SD$ = 1.12).

### *Main Analyses*

**Mind Perception.** First I tested my hypothesis that participants in the group-focus condition would attribute less experience to the company as compared to those in the group-composition focus or the individual-focus conditions. I tested this hypothesis with two one-way

(Type of Target: group-focus, group-composition focus, individual-focus) ANOVAs predicting average mind perception in terms of experience and agency separately. These analyses revealed that the type of target affected both perceptions of experience, $F(2, 246) = 30.34$, $p < .001$, $\eta_p^2 = .20$, as well as agency, $F(2, 246) = 6.36$, $p = .002$ (see Figure 5). Thus, I next explored the difference in perceptions of experience and agency for each pairwise contrast.

First I compared mind perception in the group-focus condition with mind perception in the group-composition focus or the individual-focus conditions. Consistent with hypotheses, and with Study 1, the group-focus condition yielded lower ratings of experience ($M = 2.67$; 95% CI[4.40, 5.71]) than the group-composition focus condition ($M = 7.53$; 95% CI[6.60, 8.46]), $F(1, 161) = 46.81$, $p < 001$, $\eta_p^2 = .23$), or the individual-focus condition ($M = 6.56$; 95% CI[5.66, 7.46] ), $F(1, 167) = 29.18$, $p < .001$, $\eta_p^2 = .15$. Interestingly, the group-focus condition also led to lower ratings of agency ($M = 5.05$; 95% CI [4.40, 5.71]) than the group-composition focus ($M = 6.41$; 95% CI [5.74, 7.08]), $F(1, 161) = 7.80$, $p = .006$, $\eta_p^2 = .05$), or the individual focus ($M = 6.59$; 95% CI [5.94, 7.23] ), $F(1, 167) = 10.21$, $p = .002$, $\eta_p^2 = .06$. Thus, consistent with hypotheses, companies, when described as a group, were attributed less experience than the same company construed as multiple individuals. Replicating the results of Study 1, companies, described as a group, were also attributed less experience than a single individual from the company. Interestingly, this pattern of findings replicated for perceptions of agency. However, as can be seen in Figure 5, the effect of reduced mind attribution for companies was most pronounced for perceptions of experience. This was confirmed by a one-way (Type of Target: group-focus, group-composition-focus, individual-focus) repeated measures ANOVA predicting ratings of experience and agency as a within-subjects factor. This analysis revealed a significant Type of Target X Type of Mind interaction, $F(1, 246) = 7.33$, $p = .001$, $\eta_p^2 = .06$. Thus,

consistent with predictions, companies described as an entitative group were particularly likely to be attributed low levels of mind, especially in terms of experience.

Next I compared mind attribution in the group-composition focus condition with mind perception in the individual-focus condition. Interestingly, the group-composition focus condition yielded significantly greater ratings of experience than the individual-focus condition, $F(1, 164) = 3.45$, $p = .07$, $\eta_p^2 = .02$. However, ratings of the agency did not differ between these two conditions, $F(1, 164) = .15$, $p = .70$, $\eta_p^2 = .00$.

In sum, leading people to focus on the 15 people that composed the company led to the greatest amount of mind perception in terms of experience. However, leading people to focus on the company as a whole led to the least amount of mind in terms of both agency and experience.

**Stereotypes and Mind Perception.** Next I examined the possibility that decreased attributions of experience and agency to the company as a whole may be driven by greater application of corporate stereotypes to groups as compared to individuals. To test this I re-ran separate one-way (Type of Target: group-focus, group-composition-focus, individual-focus) between-subjects ANOVAs predicting mind perception in terms of both agency and experience; but, this time, added warmth and competence into the model as standardized covariates. These analyses revealed the same pattern of effects when controlling for stereotyping. In particular, condition predicted both perceptions of experience $F(2, 244) = 34.47$, $p < .001$, $\eta_p^2 = .22$, and agency, $F(2, 244) = 5.48$, $p = .005$, $\eta_p^2 = .04$. Critically, the pattern of effects remained identical to the model without warmth and competence added as covariates (see Table 3). These findings indicate that variations in mind perception are occurring independently from stereotypes.

**Harm.** Finally, I examined whether groups were more likely to be harmed than individuals in a one-way (Type of Target: group-focus, group-composition focus, individual-

focus) ANOVA predicting decisions to harm. Results revealed a significant effect of condition on decisions to harm, $F(2, 246) = 5.04$, $p = .007$, $\eta_p^2 = .04$. As can be seen in Figure 6, participants in the group-composition focus condition were significantly more likely to cause harm ($M = 2.31$; 95% CI [2.07, 2.56]) than participants in the group-focus condition ($M = 1.87$; 95% CI [1.64, 2.12]) or the individual-focus condition ($M = 1.80$; 95% CI [1.57, 2.04]). Thus, although a group described as a collection of 15 people was attributed the greatest amount of experience, they were also most likely to be harmed-- even more so than a single individual. In fact, contrary to hypotheses, this greater harm for 15 people was completely independent of mind attributions such that neither ratings of experience [$r(1, 249) = -.07$, $p = .27$] nor agency [$r(1, 249) = .00$, $p = .98$) predicted decisions to harm.

**Discussion**

In Study 2, as in Study 1, I found that a group was attributed less mind in terms of both agency and experience, but especially experience, as compared to an individual from that group. Furthermore, I found that reduced mind perception of the group was driven by considering the group as an entitative whole rather than a collection of individuals. In particular, describing the company as a "company composed of 15 people" led to significantly lower ratings of experience and agency than describing the same company as "15 individuals who comprise the company." In fact, the latter description led to significantly higher perceptions of experience as compared to ratings of a single individual. Thus, even a very minor manipulation of focus, either on the company as a whole or all of the individuals that compose the company, had big effects on mind perception in terms of experience.

In Study 2, I also extended Study 1 findings by directly testing whether reduced mind perception of groups is driven by stereotypes of the particular type of group in question. This

possibility is consistent with other research which indicates that groups accentuate the activation of stereotypes (Cooley, Payne, & Insko, under review). Thus, companies described as a group may be perceived more stereotypically than a single individual or multiple individuals who compose the company, and this may drive differences in mind perception. Critically, I found that even when I controlled for perceptions of the warmth and competence of the target, companies described as a group continued to be attributed significantly lower levels of experience and agency than the company described as multiple individuals or an individual.

Although results supported my hypotheses regarding differences in mind perception for groups, results were more complicated for decisions to harm. Consistent with hypotheses, overall participants caused more harm to many than one. However, inconsistent with hypotheses, this finding was driven by the fact that participants endorsed the most harm toward the company described a collection of individuals. This pattern of results indicates that, indeed, people are sometimes more likely to harm many than one. However, decisions to harm were completely independent of perceptions of mind in terms of experience. In fact, participants were most likely to harm the target that was attributed the most experience.

In sum, the results of Study 2 provide evidence for two separate phenomena. First, entitativity drives reductions in mind perception such that an entitative group is attributed less capacity for experience than a group described as a collection of individuals or a single individual. Second, under certain conditions, people seem more willing to harm many than one. These finding are interesting because other research has argued that high entitativity groups, as compared to low entitativity groups, are more likely to be perceived as a single entity whose behavior is driven by intentions (O'Laughlin & Malle, 2002) and perceived as having greater mind in terms of agency (Waytz & Young, 2012). I am finding that a group described as a single

unit, is attributed *less* mind in terms of both experience and agency than a group described in a less entitative way. Importantly reduced mind for the entitative group was particularly strong for attributions of experience.

## CHAPTER 7: GENERAL DISCUSSION

Mind perception is central to morality (Gray, Young, & Waytz, 2012). To be compelled to help another person one must first perceive that person as being capable of experiencing physical or emotional pain or struggle. Similarly, to perceive that one has caused harm, one must first perceive a mind to experience that harm. In the present research I tested whether groups of people are attributed less mind than individuals, especially in terms of the ability to have experiences such as pleasure and pain. Given the link between mind perception and moral decision making, and the link between perceptions of experience and harm more specifically, I further tested whether reduced attributions of experience to groups leads people to harm groups of people--sometimes more readily than a single individual.

First, in a Preliminary Study, I tested whether people are more likely to endorse harm of many than one. In particular, I hypothesized that groups, and especially groups of outgroup members, might be more vulnerable to harm than an individual. Although I did not directly measure mind perception in this Preliminary Study, my reasoning was that outgroup groups may be perceived as more homogenous and thus more likely to be perceived as having a unified group mind rather than multiple individual minds. Because I expected that group mind would be perceived as particularly low on experience, I reasoned that outgroup groups might be more likely to be harmed than an outgroup individual. For ingroups I expected decisions to be driven by utilitarian motives such that participants would be less likely to harm many than one. Although preliminary data were supportive of this pattern of results, the full sample was not.

Instead, results revealed that people were more likely to harm outgroups than ingroups and more likely to harm an individual than a group. Thus, participants indicated a preference for the ingroup (Brewer, 1999) and for minimizing harm (Baron, 1995)—two well-known effects. Because the results of the Preliminary Study did not support hypotheses, in the following study (Study 1) I directly tested my second hypothesis: that groups may be attributed less mind, especially less experience, than individuals.

To measure mind perception in Study 1, I examined perceptions of both agency and experience of groups and individuals from a broad range of categories. In particular, participants were randomly assigned to rate either a group, an identified individual, or an unidentified individual from each of 19 categories. Overall, supportive of hypotheses, groups were attributed less capacity to experience than individuals. Interestingly, this pattern of reduced mind perception of groups was apparent for perceptions of both experience and agency, but the effects were particularly strong in terms of ratings of experience.

Study 1 findings were noteworthy in that they were the first to show reduced mind perception of groups in terms of both agency and experience across many different types of categories and to compare mind perception of groups with both identified and unidentified individuals from those groups. Results revealed that reduced mind perception of groups does not seem to be driven by the fact that individuals are often identified. Instead, as predicted, groups were rated as significantly lower in experience, than either an identified or an unidentified individual from that group. Furthermore, mind perception of identified and unidentified individuals did not tend to differ. Thus, although research indicates that identifying a victim affects moral decisions to help (Jenni & Loewenstein, 2003), identifying an individual does not seem to affect mind perception.

Interestingly, reduced mind perception for groups as compared to individuals was particularly strong for the five categories that represented companies. Such a finding is noteworthy for both practical and theoretical reasons. Practically, understanding how people perceive mind in companies is directly relevant to the common "corporations are people" rhetoric that has been popular since the Citizens United v. Federal Election Commission (2010) ruling that corporations would be granted individual rights. Theoretically, these findings indicate that something about companies in particular might drive reduced mind perception of companies as compared to individuals from those companies. In Study 2, I addressed two plausible reasons for the strong and consistent effects for companies. One possible explanation is that companies tend to be perceived as a particularly entitative, or unified, group. This possibility is consistent with my reasoning that the more entitative a group, the more likely it will be to be attributed a group mind and thus low levels of experience. A second potential explanation is that people hold stereotypes of companies as cold and calculating, and that these stereotypes lead people to perceive companies as particular low in experience. To test both of these possibilities in Study 2, I directly manipulated whether the company was construed as an entitative group and measured its effects on perceptions of experience; furthermore, I directly measured stereotyping of companies.

In Study 2 participants were randomly assigned to either rate a company described as a group [i.e., an accounting company (comprised of 15 people)], a company described as a collection of individuals [i.e., 15 people (who work for an accounting company)], or an individual on dimensions on experience and agency. Additionally I measured stereotyping of the randomly assigned target on dimensions of warmth and competence (Fiske, Cuddy, & Glick, 2007). Results revealed, as predicted, that the company described as a group was rated as

significantly lower in experience than the company described as multiple individuals or the individual. The same pattern of results held for perceptions of agency. However, as in Study 1, reduced mind perception of groups was much stronger for perceptions of experience than agency. This finding is consistent with my hypothesis that entitative groups may be particularly likely to be considered as having a group mind that is low in experience. In fact, the company described as a collection of individuals was rated as significantly higher in experience than the company described as an entitative group or an individual. These findings are consistent with the hypothesis that entitative groups will be attributed a group mind (which I find is perceived as low in experience), but that collections of individuals may actually be perceived as multiple individual minds and thus higher in perceptions of experience.

Critically, results did not change when I controlled for stereotypes in my statistical analyses. Thus, it does not seem that reduced perceptions of experience for companies as a whole are driven by stereotypes of companies as low in warmth. Instead, I would propose that the perception that an entity has the mental capacities for experience and agency might be a necessary prerequisite for developing stereotypes, but not an indication of whether stereotypes will form. After all, if an entity does not have a mind then it does not make much sense to attribute stereotypes such as "caring" or "conscientious" to that entity. Similarly, having the capacity to understand others' emotions does not mean someone will be caring, nor does having the capacity to plan mean that someone will be "conscientious."

Interestingly, Study 2 also revealed that sometimes people do harm many more readily than one. In particular, participants were more likely to harm the company described as a collection of individuals than the company described as an entitative group or a single individual. Thus, unlike in the Preliminary Study in which people strove to minimize harm, participants in

Study 2 were more likely to harm multiple individuals than a single individual. One reason for this discrepancy may be that the Preliminary Study examined a more extreme form of harm (i.e., killing) versus the less extreme reputational harm in Study 2. Perhaps, then, the extremity of the harm to be caused moderates the effect of number of victims on decisions to harm.

Interestingly, although the Study 2 finding of greater harm for many than one supported the hypothesis that sometimes people will behave in a non-utilitarian way, it also diverged with my hypothesis that that the company as a group would be most likely to be harmed due to decreased perceptions of experience for groups. Instead participants were most likely to harm the target that was attributed the greatest amount of experience---the collection of individuals. In fact, decisions to harm were completely independent of mind perception. What, then, might have driven greater harm of many than one?

**Alternative Mechanisms for Greater Harm of Many than One**

Although mind attributions, especially in terms of experience, have been linked to decisions to harm in previous research (Gray et al., 2007), mind perception is only one of many factors that could influence decisions to cause harm. After all, decisions to harm many and decisions to harm one differ in myriad ways. This leaves open the possibility for multiple mechanisms that may be simultaneously or individually operating to enable people to make decisions to cause harm to multiple people at once. Some possible mechanisms include motivated emotion regulation, stronger prejudice toward groups as compared to individuals, and differences in the way that harm is conceptualized when directed toward collections of individuals, groups, and individuals.

First, just as people regulate their compassion to avoid the costly effects of helping (Cameron & Payne, 2011) people may also regulate empathy or distress to enable themselves to

engage in behaviors that would otherwise challenge their morality—such as harming multiple others. Evidence for motivated emotion regulation would come from the finding that those who are the least skilled at regulating their emotions are also the most likely to experience more distress and/or empathy toward harming many outgroup members as compared to harming one. Additionally, those who have the highest levels of intergroup bias (and thereby the most motivation to enact intergroup harm) may show lower levels of on-line distress and/or empathy when deciding whether to harm a group of outgroup members as compared to an individual outgroup member. In this case, people may down-regulate their experience of distress in order to justify the widespread harm that they desire to enact. In the context of Study 2, this means that people may have down-regulated their experience of distress toward multiple individuals in order to justify taking money for the self at the reputational cost of the individuals. Harming a company described as a single entity or a single individual may not have elicited these same emotion regulation strategies.

Another plausible explanation for greater endorsement of harm toward many as compared to one is that groups may both relax normal motivations to control prejudice as well as enhance negative affect elicited by outgroups. Both of these possibilities are supported by previous research which indicates that groups more effectively elicit stereotypes and prejudice associated with their social category than do individuals (Cooley, Payne, & Insko, under review; Cooley & Payne, in preparation). In this research, enhanced stereotyping for groups was particularly pronounced on an explicit measure (as compared to an implicit measure). Because explicit measures are vulnerable to the effects of social desirability, high levels of explicit bias toward groups indicates that people do not feel pressure to temper their overt intergroup hostility when the targets are groups. If groups exacerbate stereotyping and prejudice and also loosen

normal constraints of social desirability, then this would lead to a greater possibility of harming groups as compared to individuals. This mechanism can be tested by examining whether groups (or collections of individuals) elicit greater prejudice and whether this prejudice mediates decisions to harm many more readily than one. Although this potential mechanism is worth testing in future research, it does not fit perfectly with the pattern of findings in Study 2. In particular, this explanation would predict that groups would trigger greater prejudice than collections of individuals, thus leading to the greatest harm of a group. However, Study 2 revealed that the company described as a group elicited *less* harm than the company described as a collection of individuals.

A final compelling explanation of my findings stems from the theoretical perspective that entitative groups are conceptualized in a way that is more similar to individuals than less entitative groups (Hamilton & Sherman, 1996). Under this conceptualization, reputational harm of an entitative group and an individual may both be construed as harm to a single entity which may seem more concentrated. In contrast, reputational harm toward a collection of individuals may be construed as more diffuse. In particular, if a company described as group is considered to be a single unified entity, much like an individual, then reputational harm may seem particularly intense when concentrated on a single entity. As a result, people may have avoided harm. However, for those who read of the company described as collection of individuals it may have been easier to think of the reputational harm as being spread across multiple individuals and thus affecting each individual less. Although decisions to harm reflected a similarity in how people conceived of an entitative group and an individual, mind perception did not. In particular, the mind of entitative groups was perceived to be quite distinct from the mind of an individual.

**Understanding Mind Perception of Groups**

Given that mind perception is integral to morality (Gray, Young, & Waytz, 2012), it is important to understand variables that influence how we perceive mind in others. Previous research on denying others a mind has found that people are particularly likely to dehumanize those who belong to outgroups. Building from this work, I also predicted that differential mind perception of groups as compared to individuals might be exacerbated for outgroups. Because outgroups tend to be perceived of as more homogenous than ingroups (Park & Rothbart, 1982; Linville, Fischer, & Salovey, 1989; Park & Judd, 1990; Ostrom, Carpenter, Sedikides, & Li, 1993), I reasoned that outgroup groups may be more likely to be perceived as having a group mind while ingroup groups might be perceived as multiple individual minds. As a result, I predicted that outgroup groups may be attributed particularly low levels of experience and agency as compared to ingroup groups and thus may be particularly likely to be harmed. However, results did not support this hypothesis in a Preliminary Study. Instead, people showed an overall effect of group membership such that they avoided harming ingroup members more than outgroup members regardless of the number of potential victims.

Although reduced mind perception of groups did not seem to depend on whether that group was an ingroup or an outgroup, the degree to which the group was perceived as particularly homogenous or entitative did matter. In fact, in Study 2, even an extremely minor manipulation of focus, either on the company as a whole, or the multiple individuals that comprise it, had meaningful effects on mind perception and especially attributions mind in terms of experience. While entitative groups were perceived as much lower on experience than an individual from that group, less entitative groups were perceived as higher in experience. I interpret the latter finding as indicating that focusing on multiple individuals leads to increased perceptions of mind, as if people are adding together the individual minds of all group members.

This builds upon other research which has compared perceptions of agency (but not experience) in groups as compared to group members. In particular, Waytz and Young (2012) found that the more agency that is attributed to the group as a whole, the less agency that is attributed to its members. Furthermore, this research finds that the more entitative the group, the more agency it is ascribed. This finding is consistent with my finding that cues to entitativity increase the perception of a unified group mind (Waytz & Young, 2012); however, the meaning of a group mind in my research as compared to this previous research, varied in important ways. In particular, this previous research only measured mind in terms of agency and found that entitativity led to *higher* ratings of agency; I measured both agency and experience and found that entitativity led to *lower* ratings of agency, and especially low levels of experience as compared to a less entitative group or an individual. My findings are consistent with Waytz and Young (2012) in that they also found that the average group member was consistently attributed more mind than the group as a whole. However, while I found that entitativity decreased attributions of mind in terms of both experience and agency, Waytz and Young (2012) found that entitative groups were attributed greater agency than less entitative groups. One reason why my findings may have conflicted with those of Waytz and Young (2012) is differences in the motivations of the perceivers. For example, when Waytz and Young manipulated entitativity they used groups of fish, while I used companies. People's motivations in perceiving mind in these two distinct entities likely differ in a variety of ways that could account for the differences in mind perception.

Consistent with the potential moderating role of motivations in mind perception, other research indicates that the motivations of perceivers can affect which type of mind (agency versus experience) that perceivers tune into (Waytz & Young, 2014). This research found that

when participants were motivated to affiliate with an outgroup, they showed a preferential focus on mind in terms of experience; conversely, when motivations to predict behavior predominated, participants showed a preferential focus on understanding the outgroup's mind in terms of agency. Thus it is possible that motivations may also affect how people attribute basic mental capacities to groups. I found some evidence for this possibility in Study 1 in which I found that higher levels of prejudice toward a category led people to attribute both lower levels of experience and agency to groups or individuals from that category. Future research could also examine how motivations affect perceptions of different types of mental capacities.

In addition to motivational effects on mind perception, other research on dehumanization has found that certain types of stereotypes lead people to be more likely to deny others a mind. In particular, Fiske and colleagues' (2007) stereotype content model breaks stereotypes into two overarching dimensions of warmth and competence. Groups that are perceived as high in both competence and warmth tend to be ingroups, while all other quadrants of the 2-dimensional stereotyping space are reserved to different types of outgroups. Importantly, those outgroups that are judged to be both low on warmth and low on competence are the outgroups that are most vulnerable to dehumanization. For example, when people look at individuals from these social groups (e.g. homeless people) within a fMRI scanner, areas of the brain associated with human perception such as the medial prefrontal cortex do not activate above a significant threshold (Harris & Fiske, 2006). Related to the present work, some of this research argues that these neurological correlates of dehumanization may facilitate intense intergroup conflict such as torture and genocide (Harris & Fiske, 2011). Interestingly this research tends to focus on perceptions of a single individual from a stereotyped category (e.g., a single homeless man; Harris & Fiske, 2006). However in the present research, I find that being perceived of as a group,

independent of stereotypes of warmth and competence, leads to dehumanization. Thus, a more basic precursor to dehumanization may be whether I perceive a target as a group or an individual. Further research should examine how considering the mental capacities for agency and experience of groups versus individuals from particular social categories might lead to different neurological activation. For example thinking of a group of people being harmed may not activate portions of the brain associated with person perception to the same degree as thinking of an individual being harmed.

**Future Directions**

There are a variety of other interesting research questions that follow from the present series of studies. In particular, while the current research examines decisions to harm groups as compared to individuals, it does not explicitly address the way that people weight decisions to harm groups in pursuit of greater good. However, the prediction that groups may be perceived as lower in experience than individuals may have implications for the literature on explicit moral trade-offs. For example, in the well-known trolley dilemmas (Foot, 1967), participants learn of a runaway train that is about to kill five workers on a train track. Critically, participants have the option to push an individual onto the tracks which will kill this individual, but save the five workers by stopping the train. Within this dilemma, people struggle to personally kill one to save many (Greene et al., 2001). However, one factor that may be driving an aversion to kill one to save many may be the emphasis on killing a single individual. Perhaps, if participants were given the option to kill three to save ten they may be more likely to make the utilitarian decision. The current research also suggests that the portrayal of the three would matter. If the three people are conceived of as a group, they may be easier to harm, therefore encouraging a utilitarian choice more often than if the three people are conceived of as separate individuals. In this way,

attributions of group mind may affect the way people consider the morality of trading some lives in order to save many others. Future research could explore the implications of the present research for understanding variables that influence when people will choose utilitarian outcomes.

Research should also examine how different levels of mind perception in response to groups may affect decisions to help. In particular, research on the collapse of compassion finds that people down-regulate their experience of compassion when viewing many suffering victims as compared to salient individual who is suffering. However, it is less clear the strategies people use in order to down-regulate their compassion toward groups. One interesting possibility is that people may down-regulate compassion by attributing less experience to groups of people than individuals. Such a finding would provide a new perspective on how we think about the collapse of compassion: denying a target the ability to experience pain/suffering may precede, or enable, one's ability to down-regulate compassion toward that target. After all, to feel empathy or compassion for another we must first perceive that that other has a mind.

**Conclusion**

Harming others is something we learn early in our lives not to do without extreme justification. And, indeed, most people struggle to respond to moral dilemmas that involve deciding to harm one person even for the benefit of many (Foot, 1967; Petrinovich et al., 1993; Mikhail, 2002). Despite this aversion to harm, widespread harm often occurs both within the United States as well as abroad. Thus, it is important to understand subtle variables that may lead even psychologically healthy people to make decisions that harm many people at once. Previous research has linked decisions to harm to mind perception. Building from this finding, I predicted that groups of people may be attributed less mind than an individual and that this may lead people to sometimes harm many more readily than one. Consistent with hypotheses, groups, and

especially entitative groups, were attributed less experience than individuals. Also consistent with hypotheses, sometimes people were more likely to harm many than one. Thus, although the behavior of a Wall Street CEO who causes financial devastation to many may seem psychopathic, the present findings provide preliminary evidence that the fact that he/she is harming multiple individuals may actually make that harm easier to enact. Interestingly, however, greater harm of many than one was unrelated to reduced perceptions of experience for groups. Thus, future research is needed to illuminate the mechanisms behind a tendency to harm many more readily than one, even among psychologically healthy people.

## APPENDIX: MATERIALS

*Wording for moral scenarios, Preliminary Study:*

Imagine that you must decide whether to launch a drone attack on Afghanistan and that this decision is extremely time urgent:

Intelligence indicates that a leader of a local terrorist group is temporarily in a rural area outside of Kabul, Afghanistan. This influential leader is thought to be plotting an attack on America.

In the next few minutes you must decide whether to launch a drone that will kill this terrorist leader. This decision is time urgent (the terrorist is on the move) and you must decide now. The drone is in position and ready to launch.

*Individual Afghan Condition*

Intelligence also indicates that this drone attack will kill a single innocent Afghan civilian named Akhtar Muhammad. Travel documents indicate that this person is the only person staying in a local hostel and will be the only additional casualty to result from the drone strike.

Imagine that you must decide whether to launch a drone attack on Afghanistan and that this decision is extremely time urgent.

*Individual American Condition*

Intelligence also indicates that this drone attack will kill a single innocent American civilian named Brad Miller. Travel documents indicate that this person is the only person staying in a local hostel and will be the only additional casualty to result from the drone strike.

Imagine that you must decide whether to launch a drone attack on Afghanistan and that this decision is extremely time urgent:

*American Group Condition*

Intelligence also indicates that this drone attack will kill 11 innocent American civilians. Travel documents indicate that these 11 Americans are the only people staying in a local hostel and will be the only additional casualties to result from the drone strike.

Imagine that you must decide whether to launch a drone attack on Afghanistan and that this decision is extremely time urgent:

*Afghan Group Condition*

Intelligence also indicates that this drone attack will kill 11 innocent Afghan civilians. Travel documents indicate that these 11 Afghans are the only people staying in a local hostel and will be the only additional casualties to result from the drone strike.

Imagine that you must decide whether to launch a drone attack on Afghanistan and that this decision is extremely time urgent.

*Targets rated on mind perception, Study 1:*

Dog

Charlie is a 3-year-old Springer spaniel and a beloved member of the Graham family.
A 3-year-old Springer spaniel is a beloved member of the Graham family.
A group of ten 3-year-old Springer spaniels--beloved members of the Graham family.

Wild Animal

Toby is a two-year-old wild chimpanzee living at an outdoor laboratory in Uganda.
A two-year-old wild chimpanzee living at an outdoor laboratory in Uganda.
A group of ten two-year-old wild chimpanzees living at an outdoor laboratory in Uganda.

Baby

Nicholas Gannon is a five-month-old baby.
A five-month-old baby
A group of ten babies about five-months old

Young girl

Samantha is a five-year-old girl.
A five-year-old girl
A group of ten five-year-old girls

Dead person

Delores Gleitman recently passed away at the age of 65.
A woman recently passed away at the age of 65.
A group of ten women recently passed away at the age of 65.

Robot

Kismet is part of a new class of "sociable" robots that can engage people in natural interaction. To do this, Kismet perceives a variety of natural social signals from sound and sight and delivers his own signals back to the human partner through gaze direction, facial expression, body posture and vocal babbles.

A robot is a part of a new class of "sociable" robots that can engage people in natural interaction. To do this, the robot perceives a variety of natural social signals from sound and sight and delivers his own signals back to the human partner through gaze direction, facial expression, body posture and vocal babbles.

A group of ten robots is part of a new class of "sociable" robots that can engage people in natural interaction. To do this, the group of robots perceive a variety of natural social signals from sound and sight and delivers their own signals back to human partners through gaze direction, facial expression, body posture and vocal babbles.

Vegetative State

Gerald Schiff has been in a persistent vegetative state (PVS) for the past six months. Although he has severe brain damage--Gerald does not appear to communicate with others or make purposeful movements--his basic bodily functions (such as breathing, sleeping, and circulation) are preserved.

A man has been in a persistent vegetative state (PVS) for the past six months. Although he has severe brain damage--he does not appear to communicate with others or make purposeful movements--his basic bodily functions (such as breathing, sleeping, and circulation) are preserved.

A group of ten men have been in a persistent vegetative state (PVS) for the past six months. Although they have severe brain damage--they do not appear to communicate with others or make purposeful movements--their basic bodily functions (such as breathing, sleeping, and circulation) are preserved.

Sports Team

Brad Miller is a baseball player for a local team called the Eagles.
A baseball player for a local team called the Eagles.
A local baseball team called the Eagles.

Accounting Company

Todd Billingsly is an accountant who lives in New York.
An accountant who lives in New York
An accounting company in New York

Advertising Agency

Sharon Harvey, 38, works at an advertising agency in Chicago.
An advertiser, 38, who works at an advertising agency in Chicago.
An advertising agency in Chicago.

Google

Gary Wilson works for Google.
A man works for Google.
Google.

Facebook

Megan Brown works for Facebook.
A woman working for Facebook.
Facebook.

Investors

Patrick Young works at an investment firm on Wall Street.
A man working at an investment firm on Wall Street.
An investment firm on Wall Street.

Afghans

Ahktar Muhammad is a man from Afghanistan.
A man from Afghanistan.
A group of ten people from Afghanistan.

Americans

Evan Baker is a man from America.
A man from America.
A group of ten people from America.

Canadians

Thomas Williams is a man from Canada.
A man from Canada.
A group of ten people from Canada.

Russians

Anatolie Vetrov is a man from Russia.
A man from Russia.
A group of ten people from Russia.

Black Americans

Jamal Jefferson is a Black American living in Chicago.
A Black American living in Chicago.
A group of ten Black Americans living in Chicago.

White Americans

Greg Taylor a White American living in Washington D.C.
A White American living in Washington D.C.
A group of ten White Americans living in Washington D.C.

You

Now, imagine viewing yourself in a mirror.

*Measures of agency and experience, Study 1 and Study 2:*

(Four items from each factor with highest loading factor scores were chosen from Gray et al. 2007.)

Experience

How capable of feeling physical or emotional pleasure do you think [target] is?

How capable of feeling physical or emotional pain do you think [target] is?

How capable of feeling hunger do you think [target] is?

How capable of feeling fear do you think [target] is?

Agency

How capable of exercising self-control do you think [target] is?

How capable of acting morally do you think [target] is?

How capable of remembering do you think [target] is?

How capable of planning do you think [target] is?

*Measures of warmth and competence taken from Fiske et al., 2002, Study 2:*

Warmth

How sociable do you think [target] is?

How unfriendly do you think [target] is?

How caring do you think [target] is?

How insensitive do you think [target] is?

Competence

How capable do you think [target] is?

How disorganized do you think [target] is?

How skilled do you think [target] is?

How lazy do you think [target] is?

*Group-focus condition, Study 2*

In this study we will ask for your impressions of a small accounting company (composed of 15 people) located in New York City (NYC). Then you will make a decision in a hypothetical scenario.

This study will examine how people make decisions. However, first we would like your impressions of the accounting company in NYC (composed of 15 people) based only on the information you have right now.

Imagine now that you also work for a company in NYC. Furthermore, your company works with the accounting company described previously.

Recently it has come to your attention that the accounting company has made an error that would allow you to benefit financially. In particular the accounting company mistakenly disclosed some information that they intended to keep private. By using this information you can make a profit and it would be perfectly legal for you to do so. However, to the degree that you choose to financially benefit from this error, the accounting company will suffer damage to their reputation when the error (and its financial consequences) become publicly known.

Listed below are the possible decisions that you could make. On the next page we will ask you to choose one of these options.

1. Take advantage of the error and make a $15,000 profit for yourself and cause severe damage to the reputation of the accounting company.

2. Take advantage of the error and make a $10,000 profit for yourself and cause moderate damage to the reputation of the accounting company.

3. Take advantage of the error and make a $5,000 profit for yourself and cause mild damage to the reputation of the accounting company.

4. Take no actions and thus make no profit nor cause any damage to the reputation of the accounting company.

*Group-composition focus condition, Study 2*

In this study we will ask for your impressions of 15 individuals who work for a small accounting company located in New York City (NYC). Then you will make a decision in a hypothetical scenario.

This study will examine how people make decisions. However, first we would like your impressions of the 15 individuals who work for the accounting company in NYC based only on the information you have right now.

Imagine now that you also work for a company in NYC. Furthermore, your company works with the accounting company described previously.

Recently it has come to your attention that the 15 individuals who work for the accounting company have made an error that would allow you to benefit financially. In particular the 15 individuals working for the accounting company mistakenly disclosed some information that they intended to keep private. By using this information you can make a profit and it would be perfectly legal for you to do so. However, to the degree that you choose to financially benefit from this error, the 15 individuals who work for the accounting company will suffer damage to their reputation when the error (and its financial consequences) become publicly known.

Listed below are the possible decisions that you could make. On the next page we will ask you to choose one of these options.

1. Take advantage of the error and make a $15,000 profit for yourself and cause severe damage to the reputation of the 15 individuals working for the accounting company.

2. Take advantage of the error and make a $10,000 profit for yourself and cause moderate damage to the reputation of the 15 individuals working for the accounting company.

3. Take advantage of the error and make a $5,000 profit for yourself and cause mild damage to the reputation of the 15 individuals working for the accounting company.

4. Take no actions and thus make no profit nor cause any damage to the reputation of the 15 individuals working for the accounting company.

*Individual focus condition, Study 2*

In this study we will ask for your impressions of a man who works for a small accounting company (composed of 15 people) located in New York City (NYC). Then you will make a decision in a hypothetical scenario.

This study will examine how people make decisions. However, first we would like your impressions of the man who works for the accounting company in NYC based only on the information you have right now.

Imagine now that you also work for a company in NYC. Furthermore, your company works with the accounting company described previously.

Recently it has come to your attention that the man who works for the accounting company has made an error that would allow you to benefit financially. In particular the man who works for the accounting company mistakenly disclosed some information that the accounting company intended to keep private. By using this information you can make a profit and it would be perfectly legal for you to do so. However, to the degree that you choose to financially benefit from this error, the man who works for the accounting company will suffer damage to his reputation when the error (and its financial consequences) become publicly known.

Listed below are the possible decisions that you could make. On the next page we will ask you to choose one of these options.

1. Take advantage of the error and make a $15,000 profit for yourself and cause severe damage to the reputation of the man who works for the accounting company.

2. Take advantage of the error and make a $10,000 profit for yourself and cause moderate damage to the reputation of the man who works for the accounting company.

3. Take advantage of the error and make a $5,000 profit for yourself and cause mild damage to the reputation of the man who works for the accounting company.

4. Take no actions and thus make no profit nor cause any damage to the reputation of the man who works for the accounting company.

Table 1

*Mind perception across non-company targets, Study 1*

| Type of Target | *M* (Experience) | 95% CI (Experience) | *M* (Agency) | 95% CI (Agency) |
|---|---|---|---|---|
| *Dog* | | | | |
| Group | 81.78 | (77.01, 86.55) | 36.25 | (30.91, 41.60) |
| Individual (U) | 88.04 | (83.58, 92.50) | 38.95 | (33.95, 43,95) |
| Individual (I) | 88.16 | (83.44,92.89) | 38.51 | (33.21, 43.81) |
| *Wild Animal* | | | | |
| Group | 84.79 | (80.16, 89.41) | 39.47 | (33.58, 45.36) |
| Individual (U) | 88.41 | (83.94, 92.87) | 42.79 | (37.10, 48.48) |
| Individual (I) | 86.41 | (82.09, 90.73) | 48.5 | (43.00, 54.00) |
| *Baby* | | | | |
| Group | 84.62 | (79.57, 89.68) | 15.59 | (10.99, 20.20) |
| Individual (U) | 82.72 | (77.54, 87.91) | 17.35 | (12.75, 21.95) |
| Individual (I) | 81.32 | (76.13, 86.50) | 14.99 | (10.50, 19.48) |
| *Young Girl* | | | | |
| Group | 89.13 | (85.20, 93.07) | 53.87 | (48.94, 58.81) |
| Individual (U) | 89.45 | (85.16, 93.74) | 57.18 | (51.80, 62.56) |
| Individual (I) | 87.40 | (83.40, 91.40) | 51.8 | (46.78, 56.81) |
| *Dead Person* | | | | |
| Group | 5.70 | (.863, 10.54) | 4.88 | (.62, 9.15) |
| Individual (U) | 3.72 | (-1.12, 8.55) | 4.08 | (-.18, 8.35) |
| Individual (I) | 7.38 | (2.42, 12.35) | 6.86 | (2.49, 11.24) |
| *Robot* | | | | |
| Group | 11.05 | (5.36, 16.73) | 54.30 | (47.08, 61.52) |
| Individual (U) | 9.81 | (3.87, 15.74) | 53.04 | (45.51, 60.57) |
| Individual (I) | 11.50 | (5.77, 17.24) | 54.27 | (47.00, 61.55) |
| *Vegetative State* | | | | |
| Group | 38.36 | (30.70, 46.02) | 14.10 | (9.24, 18.96) |
| Individual (U) | 32.06 | (24.33, 39.78) | 12.64 | (7.74, 17.54) |
| Individual (I) | 38.18 | (30.58, 45.77) | 16.45 | (11.63, 21.27) |
| *Sports Team* | | | | |
| Group | 80.34 | (75.44, 85.23) | 75.02 | (69.92, 80.13) |
| Individual (U) | 87.60 | (82.70, 92.50) | 82.37 | (77.26, 87.48) |

| | | | | |
|---|---|---|---|---|
| Individual (I) | 89.45 | (84.60, 94.31) | 84.48 | (79.42, 89.54) |
| *Afghans* | | | | |
| Group | 87.52 | (82.81, 92.24) | 81.00 | (75.88, 86.12) |
| Individual (U) | 89.32 | (84.69, 93.96) | 80.24 | (75.21, 85.27) |
| Individual (I) | 89.02 | (84.58, 93.47) | 81.51 | (76.69, 86.34) |
| *Americans* | | | | |
| Group | 87.55 | (83.54, 91.56) | 78.43 | (74.13, 82.72) |
| Individual (U) | 92.43 | (88.42, 96.44) | 85.58 | (81.28, 89.87) |
| Individual (I) | 85.49 | (81.44, 89.53) | 80.33 | (74.13, 82.72) |
| *Canadians* | | | | |
| Group | 85.63 | (80.96, 90.30) | 82.64 | (78.29, 86.99) |
| Individual (U) | 89.46 | (84.91, 94.01) | 88.15 | (83.91, 92.39) |
| Individual (I) | 89.89 | (85.30, 94.48) | 85.2 | (80.92, 89.47) |
| *Russians* | | | | |
| Group | 88.19 | (83.79, 92.59) | 80.89 | (79.78, 88.08) |
| Individual (U) | 88.34 | (83.71, 92.97) | 84.59 | (80.22, 88.96) |
| Individual (I) | 86.61 | (82.06, 91.16) | 83.93 | (76.60, 85.18) |
| *Black Americans* | | | | |
| Group | 89.92 | (86.38, 93.45) | 79.62 | (74.94, 84.29) |
| Individual (U) | 92.98 | (89.44, 96.52) | 84.31 | (79.63, 88.99) |
| Individual (I) | 87.09 | (83.37, 90.81) | 83.60 | (78.67, 88.53) |
| *White Americans* | | | | |
| Group | 84.61 | (80.19, 89.04) | 78.71 | (74.25, 83.16) |
| Individual (U) | 87.46 | (83.25, 91.68) | 84.16 | (79.92, 88.39) |
| Individual (I) | 89.49 | (85.06, 93.91) | 84.13 | (79.67, 88.58) |
| *You* | 90.09 | | 84.30 | |

Table 2

*Associations between prejudice and mind perception, Study 1*

| | ***M*** **(Prejudice)** | ***SD*** **(Prejudice)** | ***r*** **(with Experience)** | ***r*** **(with Agency)** |
|---|---|---|---|---|
| *Target of Prejudice* | | | | |
| Black Americans | 28.08 | 21.12 | -0.23*** | -0.38*** |
| White Americans | 26.88 | 21.34 | -.21** | -.26*** |
| Canadians | 24.26 | 18.79 | -.19* | -.20** |
| Afghans | 40.88 | 24.21 | -.30*** | -.45*** |

*Note*. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

*Mind perception controlling for stereotypes of warmth and competence, Study 2*

| Type of Target | *M* (Experience) | 95% CI (Experience) | *M* (Agency) | 95% CI (Agency) |
|---|---|---|---|---|
| *Condition* | | | | |
| Company (comprised of 15 people) | $2.65_{a}$ | (1.78, 3.52) | $5.23_{a}$ | (4.66, 5.80) |
| 15 people (who compose a company) | $7.62_{b}$ | (6.74, 8.50) | $6.45_{b}$ | (5.87, 7.03) |
| Man (who works for the company) | $6.48_{c}$ | (5.63, 7.33) | $6.39_{b}$ | (5.82, 6.95) |

*Note*. Means with different subscripts within the same column are significantly different from one another at $p < .05$.

*Figure 1.* Endorsement of collateral damage based on number and group membership of victims. Error bars represent +/- 1 standard error from the mean, Preliminary Study, Partial Sample.

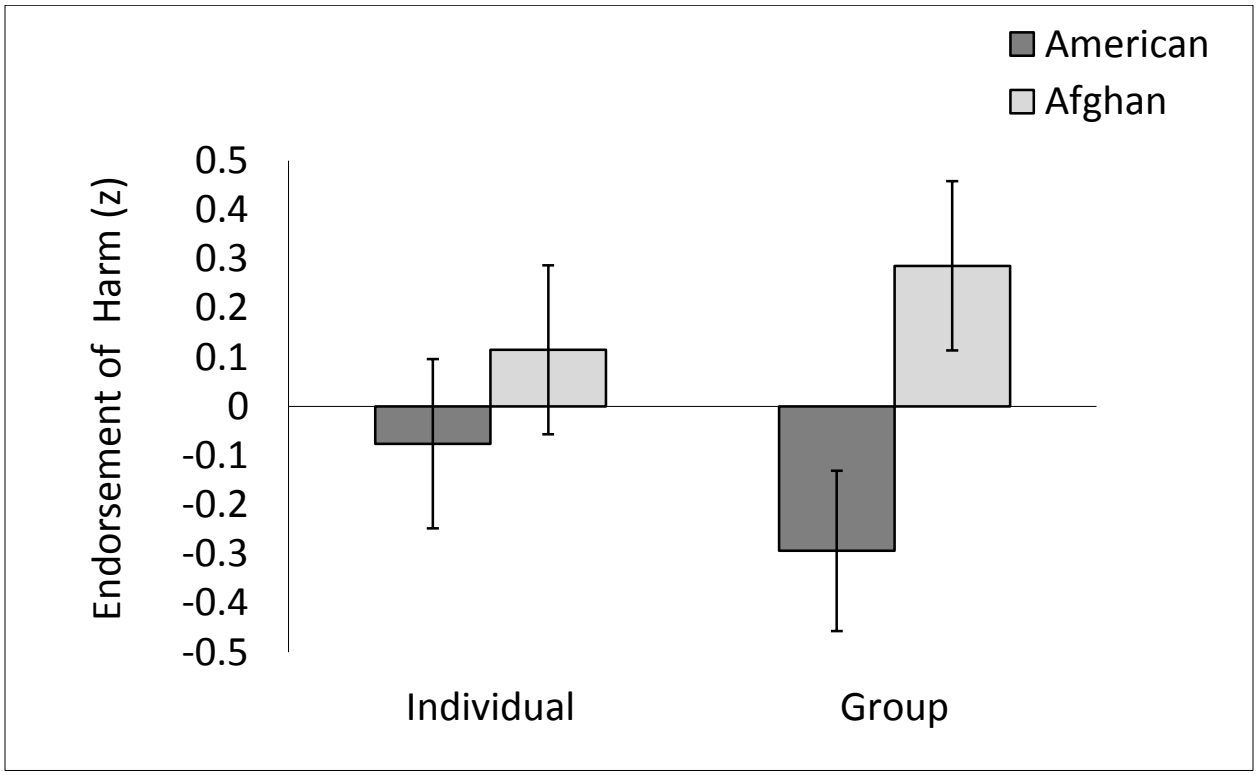


*Figure 2.* Endorsement of collateral damage based on number and group membership of victims. Error bars represent +/- 1 standard error from the mean, Preliminary Study, Full Sample.

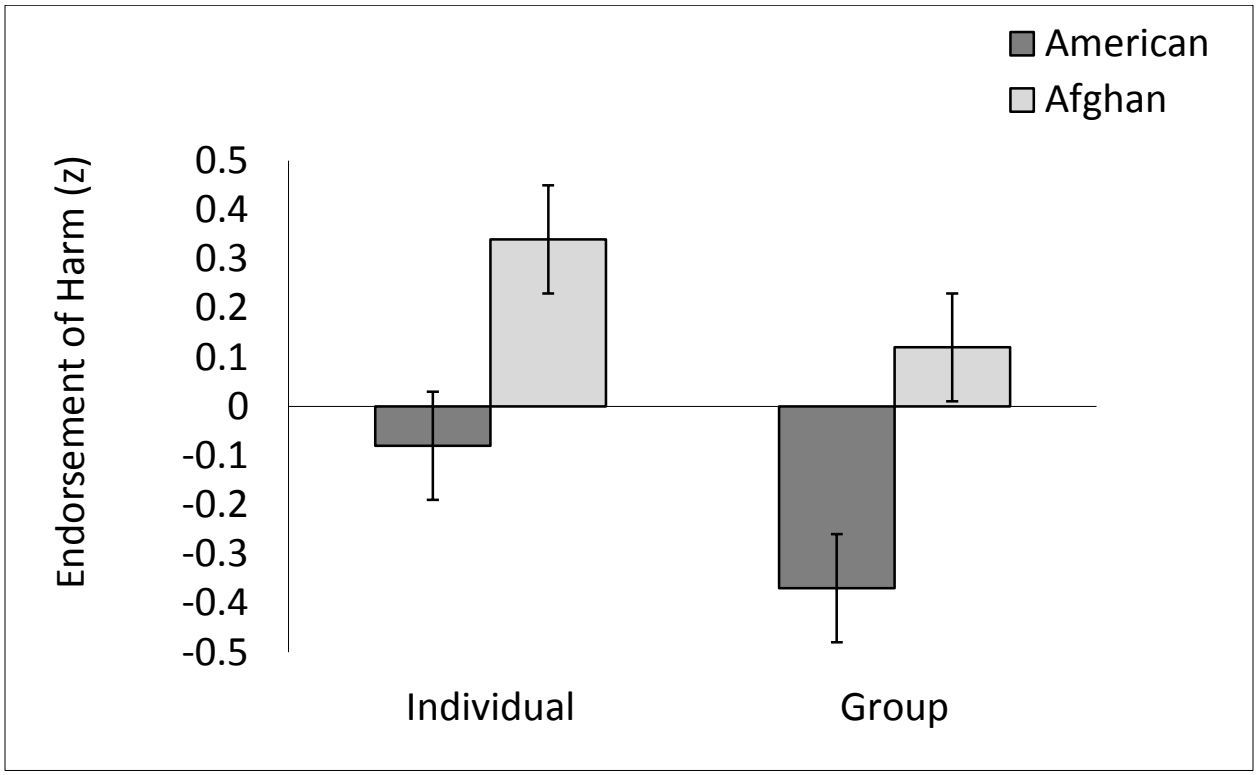


*Figure 3.* 95% Confidence intervals of experience and agency ratings across all groups, unidentified individuals, and identified individuals, Study 1.

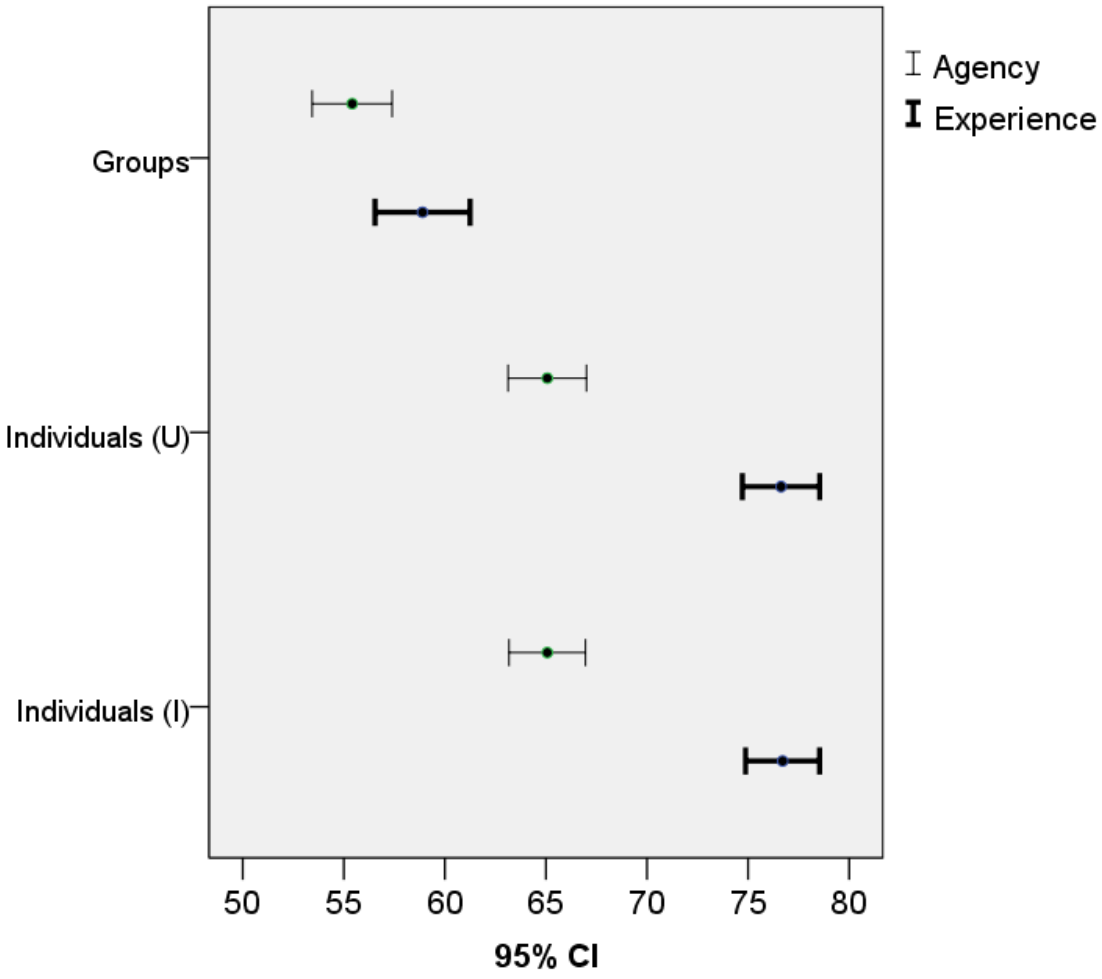


*Figure 4.* Mind perception of companies and individuals (I = Identified; U = Unidentified) from those companies, Study 1.

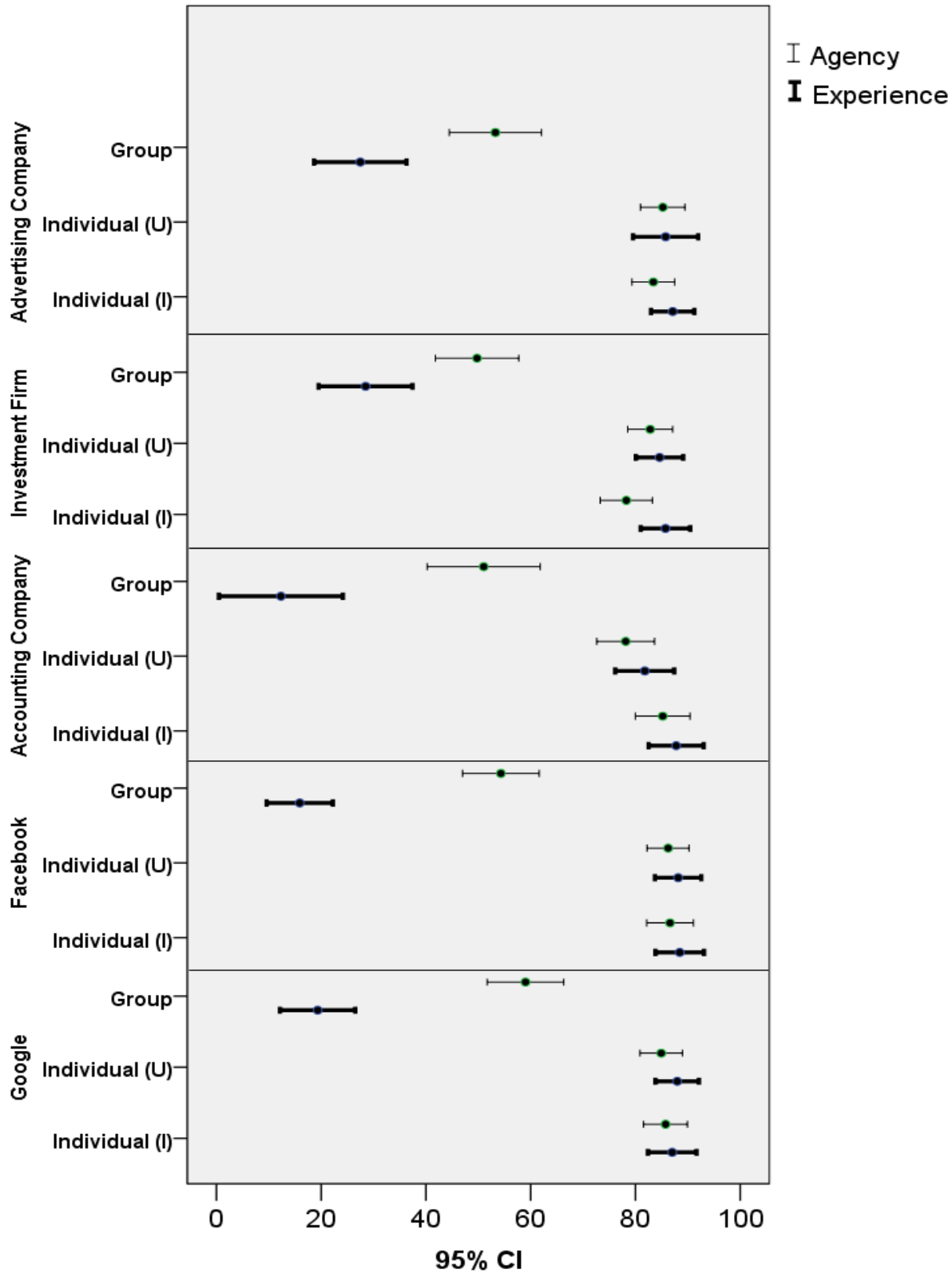


*Figure 5.* 95% confidence intervals of experience and agency ratings for an accounting company (comprised of 15 people), 15 people (who compose the accounting company), and a man who works for the accounting company, Study 2.

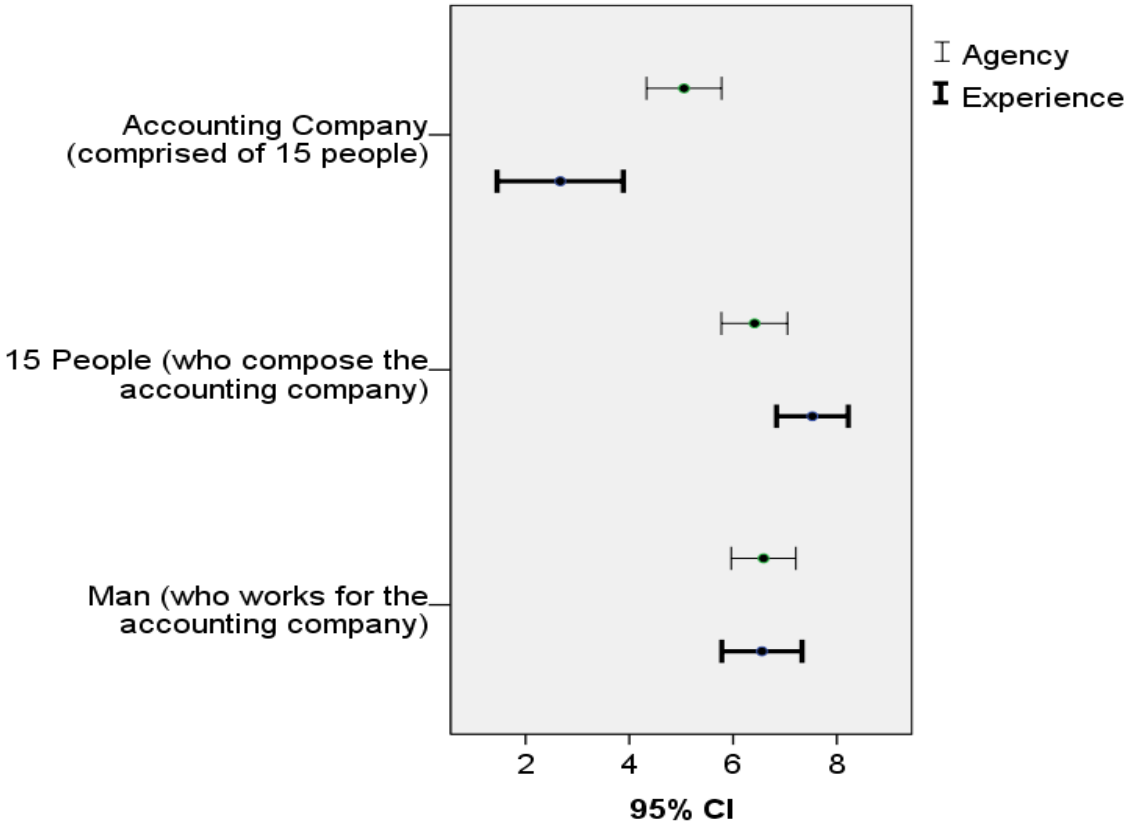
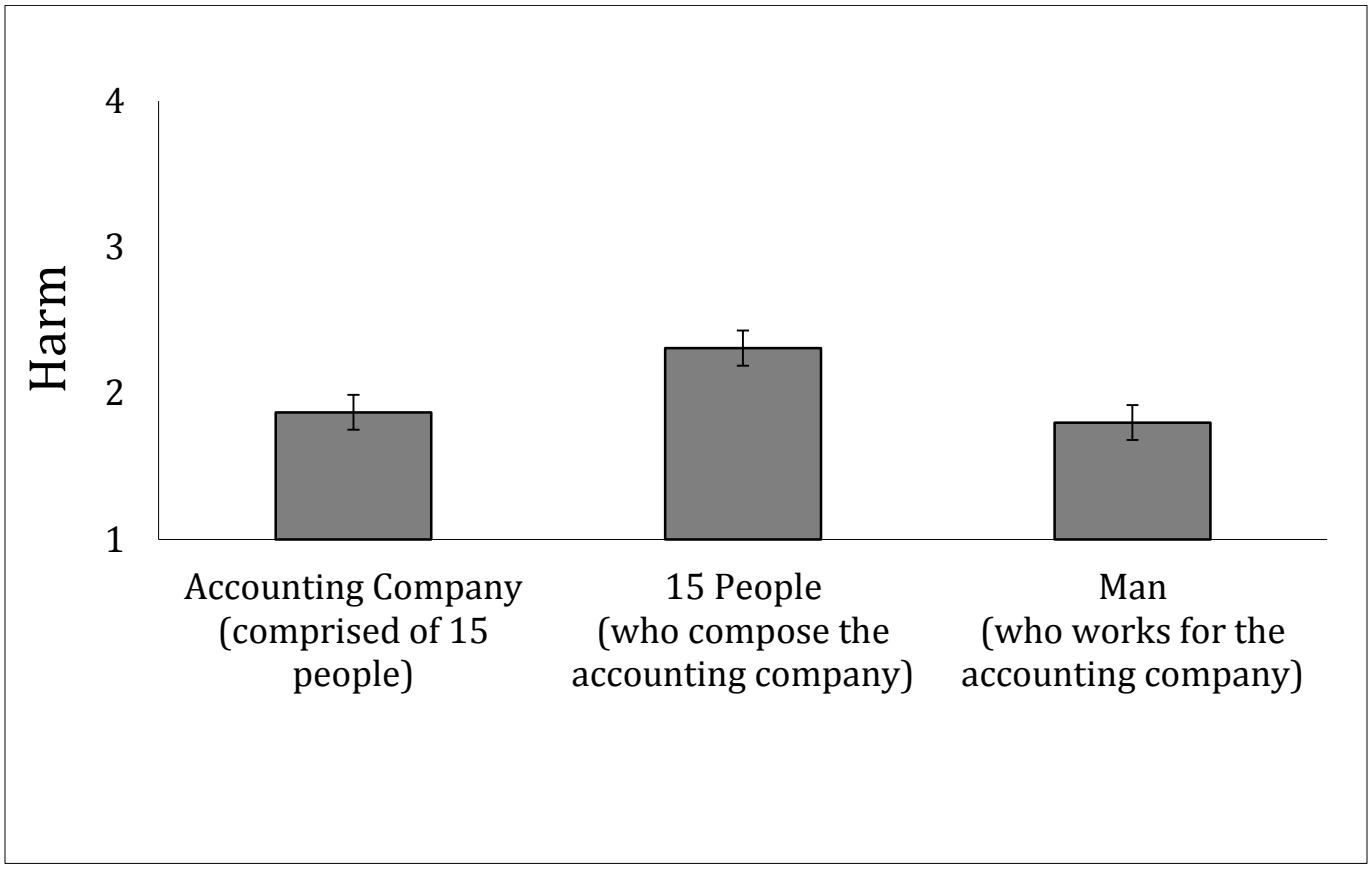


*Figure 6.* Decisions to harm based on condition. Error bars represent +/- 1 standard error from the mean, Study 2.



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