FRAMING EFFECTS IN PERSUASIVE MESSAGING

by

ALEXANDER GARINTHER

A DISSERTATION

Presented to the Department of Psychology
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

March 2021

DISSERTATION APPROVAL PAGE

Student: Alexander Garinther

Title: Framing Effects in Persuasive Messaging

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Psychology by:

Holly Arrow	Chairperson and Advisor
Paul Slovic	Core Member
Sara Hodges	Core Member
Dyana Mason	Institutional Representative

and

Kate Mondloch	Interim Vice Provost and Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

Degree awarded March 2021

DISSERTATION ABSTRACT

Alexander Garinther

Doctor of Philosophy

Department of Psychology

March 2021

Title: Framing Effects in Persuasive Messaging

Cooley, Payne, Cipolli, Cameron, Berger, and Gray (2017) found that subtle shifts in linguistic framing (saying "people in a group" instead of "a group of people") can enhance the amount of "mind" perceived in a target, and in turn increase feelings of sympathy toward that target. This project adds four studies designed to test if these findings generalize to new contexts.

Studies 1 and 2 perform conceptual replications of Cooley et al. (2017)'s Studies 2 and 3 in a different participant population (university students, instead of mTurk workers), and found largely consistent results: the group composition frame ("15 individuals who work for a small accounting company") evoked greater perceptions of experience and agency (the two components of mind perception), and more sympathy for the target, than the group frame ("a small accounting company comprised of 15 people").

Studies 3 and 4 then tested whether or not the group composition frame would lead to similar persuasive outcomes (increased mind perception, helping motivation, and donations) in a refugee aid context, but found limited evidence that it would. While the group composition frame appeared to result in increased perceptions of experience, it elicited levels of agency, helping motivation, and donation amounts no different from the group frame or from an individual. This project aims to deepen our understanding of

these framing effects and their boundaries so that those who wish to apply them, for instance charities or fundraisers helping refugees, may have a better sense of how and when they are likely to be effective. Note this dissertation includes not-yet-published co-authored material.

CURRICULUM VITAE

NAME OF AUTHOR: Alexander Garinther

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, OR.
Boston College, Chestnut Hill, MA.
University of Melbourne, Victoria, AUS.

DEGREES AWARDED:

Doctor of Philosophy, Psychology, 2021, University of Oregon
Master of Public Administration, 2021, University of Oregon
Master of Arts, Psychology, 2014, Boston College
Bachelor of Arts, Psychology and Communications, 2013, Boston College

PROFESSIONAL EXPERIENCE:

Research Analyst, Second Sight Training Systems, LLC., Jan 2017 – Present

DHS STEM Intern, US Naval Research Laboratory, June - Sept 2016

GRANTS, AWARDS, AND HONORS:

Committee for an Inclusive Community, Combating Racial Disparities in Medicine Grant, 2021

RISE (Researching Injustice and Social Equality) Award Winner, APS, 2020

Institute of Cognitive and Decision Sciences, Dissertation Research Award, 2019

Genocide Prevention Initiative, Research Grant Recipient, 2017

PUBLICATIONS:

Garinther, A., Arrow, H. (Registered Replication Report, forthcoming). Understanding the Generalizability of Group vs. Group-Composition Frames. *Journal of Experimental Psychology: General.*

Garinther, A., Arrow, H., & Razavi, P. (2021). Victim Number Effects in Charitable Giving: Joint Evaluations Promote Egalitarian Decisions. *Personality and Social Psychology Bulletin.*

Meehan, N., Strange, C. Garinther, A. (2020). It's the Walk, Not the Talk: Behavioral Indicators of Concealed and Unholstered Firearms Carrying. *The Police Journal.* doi:10.1177/0032258X20960777.

Ebersole, C., Mathur, M., … Garinther, A., et al. (2020). Many Labs 5: Can conducting formal peer review in advance increase improve reproducibility? *Advances in Methods and Practices in Psychological Science.* Preprint of results-blind MS available at https://psyarxiv.com/sxfm2/

Chartier, C., Arnal, J., … Garinther, A., et al. (2020). Many Labs 5: Registered Replication Report of Albarracin (2008) Study 5. *Advances in Methods and Practices in Psychological Science.*

Garinther, A., Mayorga, M., Vastfjall, D., Slovic, P. (2019). Information spotlighting in Americans' decisions surrounding refugee resettlement policy. *Journal of Refugee Studies,* https://doi.org/10.1093/jrs/fez068.

Oolman, M., Parker, M., Meehan, N., Garinther, A. (2019). Identifying Drug Couriers in Airports. *Journal of Airport Management, 13(3), 254-270.*

Meehan, N., McClary, M., Garinther, A. (2018). Behavioral Indicators of Drug Carrying in Open Spaces. *International Journal of Offender Therapy and Comparative Criminology, 63(3), 448–470.* https://doi.org/10.1177/0306624X18791954

Arrow, H., & Garinther, A. (2018). Thinking together about genocide: socially shared cognition in context. In Carter, J. A., Clark, A., Kallestrup, J., Palermos, O, & Pritchard, D. (Eds)., *Socially Extended Epistemology*, Oxford, UK: Oxford University Press.

LeBaron, V., Cooke, A., Resmini J., Garinther, A., Chow, V., Quiñones, R., Noveroske, S., Baccari, A., Smith, P.T., Peteet, J., Balboni, T.A., Balboni M.J.. (2015). Clergy Views on a Good Versus a Poor Death: Ministry to the Terminally Ill. *Journal of Palliative Medicine , 18(12), pp. 1000-7.* doi:10.1089/jpm.2015.0176.

TABLE OF CONTENTS

LIST OF FIGURES

Figure Page

LIST OF TABLES

Table Page

I: INTRODUCTION TO RESEARCH QUESTIONS

The way a message is framed can have important consequences on how it is perceived and the response it elicits (Levin, Schneider, & Gaeth, 1998; Nelson, Oxley, & Clawson, 1997; Tversky & Kahneman, 1981). Psychologists, economists, and others have studied framing effects for several decades, and the application of these techniques in an appropriate manner can lead to persuasive outcomes, sometimes at low cost and with relative ease on the part of the communicator (Scheufele & Iyengar, 2012). Deepening our understanding of specific framing effects, and their utility across contexts, is therefore an important goal and one in line with recent calls for solution-oriented social science (Watts, 2017). The goal of the current investigation is to improve our understanding of one particular framing effect, including some of its boundaries and contingencies.

Cooley, Payne, Cipolli, Cameron, Berger, and Gray (2017) conducted three studies investigating how subtle shifts in framing can influence the way people perceive groups—in particular, the amount of mind perceived in a group. This work fits into a broader literature on the links between mind perception and moral behavior (e.g., helping and harming), and on how framing techniques can be used to alter outcomes such as willingness to pay (for example, charitable contributions) or willingness to punish for wrongdoing. To introduce this work, the current section will first review Cooley et al. (2017)'s specific findings, and then discuss more broadly how these findings make important contributions to the psychological literature.

Findings from Cooley et al. (2017)

Cooley et al. (2017) present a series of three studies. Their Study 1 found that groups are on average perceived as having less "mind" than individuals. The perception of "mind" has emerged in recent years as an important variable influencing moral judgment and behavior (Gray, Young, & Waytz, 2012; Gray & Wegner, 2012). This construct is typically measured through the 18-item Mind Perception Questionnaire (Gray, Gray, & Wegner, 2007). Gray and colleagues (2012) proposed that mind perception is the essence of morality, and their theory states that much of moral behavior (helping, harming) is guided by subtle attributions of mind. To explain their theory succinctly, one could say that the more "mind" an entity is perceived to have, the more worthy that entity is of moral treatment. These mind attributions are not always stable; they can shift based on the way an entity is framed (Wegner & Gray, 2016). This understanding of mind perception—and in particular the finding that groups are generally seen as having less "mind" than individuals—sets the stage for Cooley et al. (2017)'s Studies 2 and 3.

In Studies 2 and 3, Cooley et al. (2017) use subtle framing techniques to shift the amount of mind perceived in a group. Having established that individuals tend to be seen as having more mind than groups (Study 1), their Study 2 evaluates how linguistic frames ("a group of people"—the group frame vs. "people in a group"—the group composition frame) can diminish or boost mind perception. Results indicate that the group frame evoked less mind perception than the group composition frame, which elicited levels of mind perception comparable to an individual. Cooley et al. (2017) Study 3 replicated this effect, and also showed that group composition frames increase sympathy compared to

the group frame, with mind perception mediating that link. The authors discuss the implications of this work for boosting moral behavior toward groups of suffering people, such as refugees (Cooley et al. 2017, p. 7). Understanding how to boost support for groups in need represents an important potential application of this work. Note this dissertation includes unpublished co-authored material; Holly Arrow, my advisor, helped with study design and interpretation of results.

Place in the Psychological Literature

Cooley et al. (2017)'s studies contribute to many active lines of research. The first is on the perception of "group mind," which has been studied by social psychologists (Wegner, 1987; Wegner & Gray, 2016), social neuroscientists (Jenkins, Dodell-Feder, Saxe, & Knobe, 2014), moral psychologists (Waytz & Young, 2012), experimental philosophers (Knobe & Prinz, 2008), and researchers in other cognitive sciences (Morewedge, Chandler, Smith, Schwarz, & Schooler, 2013). Applications of this work are of interest to organizational/industrial psychologists (Rai & Diermeier, 2015) and to scholars of business ethics (Jago & Pfeffer, 2018), who study the causes and consequences of so-called "corporate personhood" (Jago & Laurin, 2017).

Cooley and colleagues' work also informs research on the links between two dimensions of mind perception—the amount of experience and agency attributed to an entity—and moral propensities such as willingness to blame, harm, or help (for an extensive discussion, see Wegner & Gray, 2016). In this line of work, experience (the capacity to feel pain, hunger, sadness, pride) is often linked to sympathy and helping, while the second dimension of mind perception, agency (the capacity to do, control, act), is associated with blameworthiness and punishment after wrongdoing (Rai & Diermeier,

2015; Wegner & Gray, 2016). The relation between mind perception and moral worth has inspired considerable debate in social and moral psychology (with seminal theorizing from Gray, Young, & Waytz, 2012), and the links between mind perception and moral outcomes have been discussed heavily in contexts such as dehumanization (Haslam & Loughnan, 2014), objectification (Gray, Knobe, Sheskin, Bloom, & Barrett, 2011), perception of medical patients / psychopathology (Gray, Jenkins, Heberlein, & Wegner, 2011), and even human interactions with machines (Gray & Wegner, 2012).

Cooley et al. (2017)'s work also contributes to a growing literature on the psychology of compassion, and on how framing techniques can be used to increase support for groups in need. Studies in psychology, economics, and other fields have found that people typically respond more strongly to stories of individuals in need than to stories of groups in need, both in terms of empathy felt and donations offered (Slovic, 2007; Slovic & Slovic 2015; Västfjäll, Slovic, Mayorga, & Peters, 2014; see also Lee & Feeley, 2016). This phenomenon has been called "compassion fade" (Västfjäll et al., 2014), and studies on the subject have compared reactions to a single individual to reactions to two and eight people (Västfjäll et al., 2014), to five people (Dickert, Kleber, Västfjäll, & Slovic, 2016), or to statistical masses like "a million" (Small, Loewenstein, & Slovic, 2007). The current study, mirroring the design of Cooley et al. (2017)'s Studies 2 and 3, compares reactions to a single individual to reactions to groups of 15 people (Studies 1 and 3) and groups of 20 people (Studies 2 and 4). By including a range of outcome variables in this design (e.g., donations, motivation to help, and empathy), the results of my work may contribute to this area of study as well.

II: THE CURRENT INVESTIGATION: REPRODUCTION AND EXTENSION

Studies 2 and 3 of Cooley et al. (2017) found that a group composition frame (one that describes "people in a group") elicits more mind perception and sympathy than a traditional group frame (i.e., "a group of people"). My studies investigate the generalizability of their findings across different participant populations and messaging stimuli. My Studies 1 and 2 seek to reproduce the results of Cooley et al. (2017)'s Study 2 and 3 in a different participant population (university students compared to mTurkers). My Studies 3 and 4 then attempt to extend these findings into a new stimulus context (refugees in need). My hope is that work presented here will improve our understanding of the original phenomena and test some boundary conditions that might allow or obstruct linguistic framing effects in different contexts.

Studies 1 and 2 adhere closely to the original authors' methods, as the goal of these studies is to reproduce the original findings with no changes other than a new participant population. My Studies 3-4 then test whether these subtle framing techniques increase sympathy and helping via enhanced mind perception when applied to other groups in need—not just accountants/accounting firms. Table 1 overviews these four studies and their characteristics.

Table 1. Overview of Four Studies

Study No.	Message Format (Model Study)	Message Target (Individual/Group)	Goal of Study
1	Short Text Phrases (Cooley et al. Study 2)	Accountant/ Accounting Firm	Generalizability to New Participant Population
2	Text Vignettes (Cooley et al. Study 3)	Accountant/ Accounting Firm	Generalizability to New Participant Population
3	Short Text Phrases (Cooley et al. Study 2)	Refugee/ Group of Refugees	Generalizability to New Stimuli or Target Group
4	Text Vignettes (Cooley et al. Study 3)	Refugee/ Group of Refugees	Generalizability to New Stimuli or Target Group

Rationale and Areas of Interest

Given recent concerns in social science related to reproducibility, I believe the current investigation has value in its general goal of attempting to reproduce a new finding in psychology. Using a high-powered preregistered report, I attempt to reproduce and extend the findings from Cooley et al. (2017) Studies 2 and 3 with a series of experiments that systematically assess questions of generalizability. Preregistration helps to limit researcher degrees of freedom and protects against capitalizing on chance results, and therefore having a preregistered follow-up investigation of novel findings from a separate group of researchers helps strengthen the field as a whole.

The main driver behind the current project is to improve our understanding of group composition frames and how they operate so that psychological science can be of greater benefit to those who may put these ideas to practice—communicators, marketers, and fundraisers (cf. Mason, 2013). Given the potential interest these practitioners may have in applying Cooley et al. (2017)'s findings, it would be useful to know their generalizability and boundaries, both at the level of population and of stimuli. Further detail on the

specific rationale behind my study designs is organized into the following three sections: generalizability across populations, generalizability across stimuli, and general methodological extensions.

Generalizability Across Populations. Cooley et al. (2017) collected their data from Amazon Mechanical Turk at some point in time prior to 2017. The population of mTurk workers has been fairly well described by social scientists (see, for example, Huff and Tingly, 2015), and represents a reasonable population on which the authors draw their conclusions. It is also possible that American mTurk samples may differ from other samples in meaningful ways (Goodman, Cryder, & Cheema, 2013; Smith, Roster, Golden, & Albaum, 2016), some of which might be related to repeated exposure to experimental surveys (Chandler, Mueller, & Paolacci, 2014). In my Studies 1 and 2, I assess the extent to which Cooley et al. (2017)'s findings also appear in a different sample—in this case, university students, a population readily available to the current researchers and many others. This effort allowed us to assess the extent to which the effects described by Cooley et al. (2017) generalize from the mTurk world in which they first observed them to a population that differs from the original in several ways (e.g., age, education, geographic location).

Generalizability Across Stimuli. My Studies 3 and 4 focus on the generalizability of the stimuli, or target groups, associated with these frames. Cooley et al. (2017) mention refugees as a target group of interest, but their studies examine group frames in the context of an accounting company. Sections of their discussion and secondary reporting on their work (Resnick, 2017) extrapolates their findings to refugee groups, groups of

orphans, and others in need.[1] Whether or not the effects of their linguistic manipulation translate to these other contexts remains untested. Testing the applicability of their findings to refugee groups as part of a high-powered, preregistered report is thus an important goal of the current project, and the primary focus of my Studies 3 and 4.

General Methodological Extensions. Studies 3 and 4 of my investigation, which vary more freely from the original authors' work, include a set of features I have categorized as general methodological extensions.

Additional Outcome Variables. I include additional outcome variables related to helping and generosity. As noted above, Cooley and colleagues suggest that careful linguistic frames may boost support for people in need (e.g., refugees, orphans); however, the original report does not measure helping, helping intentions, or charitable behavior. My studies supplement Cooley et al. (2017)'s original outcome measures (mind perception and sympathy) by adding measures of self-reported helping motivation, a hypothetical donation amount, empathy toward the target(s), as well as exploratory measures on perceived responsibility to help, feelings of distress, and the perceived impact of a donation. More detail on these measures and their ordering is provided in the Methods section of this report.

Attention Checks. Cooley et al. (2017)'s findings are based on a self-described "small change in linguistic framing" (p. 4)—indeed, the rearrangement of a few simple

[1] In their discussion, Cooley et al. (2017) note: "Such framing may be a key facet predicting support for policy decisions involving groups of people. For example, in the context of intergroup conflict, people may perceive the morality of launching a drone to be quite different if the potential victims are framed as the people of Afghanistan [group composition] versus Afghan people [group]. Likewise, if a group wants to elicit sympathy for their victimization, this research provides a simple way for doing so" (p. 7). Picking up on this suggestion, Brian Resnick of Vox promoted Cooley et al. (2017)'s findings as a simple way of generating support for refugees in need. My Studies 3 and 4 test these predictions.

words—and so it is possible that some percentage of participants simply overlook the linguistic frame entirely. The authors do mention an attention check that took place at the very start of their Study 2, but it is not described in detail, and their report does not provide information on how responses to the attention check measure influenced exclusion criteria or other aspects of their analysis plan. At the end of my Studies 3 and 4, I include two check questions that test participants' ability to remember specific information from the study using multiple-choice response options. Full details of these questions are provided in Methods.

Two Versions of Group Frames. Cooley et al. (2017)'s materials contained a small inconsistency between the group frame and group composition frames in Study 3: while the group composition frame specifies a number of people ("20 employees who compose a small company"), their group frame omits the mention of number ("a small company"). This is not the case in Cooley et al. (2017)'s Study 2, which provides a number in both the group composition ("15 people who…") and group frame ("…comprised of 15 people") conditions.[2] To investigate any differences that might result from the inclusion/omission of number, this investigation ran two versions of the group frame condition: one that contained no mention of number (as in Cooley et. al (2017) Study 3), and one that included the number.

[2] The reason for this discrepancy in Cooley et al. (2017) Study 3 is due to the authors' desire to build on the work of Rai and Diermeier (2015). In Cooley et al. (2017) Study 3, the individual and group frame conditions mirrored Rai and Diermeier (2015)'s materials exactly, and therefore Cooley et al. (2017) did not change them (i.e., did not add a number to the group frame condition, as it had not been included in the past work). As part of this Study 3, Cooley et al. (2017) also added their own third condition, the group composition frame (which had not been part of Rai and Diermeier (2015)'s work). In adding this group composition frame condition in Study 3, Cooley et al. (2017) chose to include mention of a specific number, which is consistent with how the group composition frame was presented in their Study 2 (both framing conditions mentioned the number). However, this decision did lead to a confound in Study 3: the group composition frame condition specifies a number of people while the group frame condition does not.

III: METHODS

This section outlines the four studies of the current investigation, which are closely modeled after Cooley et al. (2017) Studies 2 and 3. Studies 1 and 2 are designed to mirror Cooley et al. (2017)'s Studies 2 and 3, respectively, as fairly close replications that depart from their method only in participant recruitment (using undergraduate students instead of mTurkers). Studies 3 and 4 then model the same design framework once again, but this time depart in two ways: participant recruitment (undergraduate students) and stimulus materials (refugee aid). Studies 3 and 4 also include an expanded set of outcome measures. As a whole, this series of four studies allowed us to perform comprehensive and systematic tests of my questions of generalizability, as outlined above.

The four studies described here share many of the same features. However, because of the differences that do exist, some subsections below present material for each study separately. All materials, supplemental information, data and code are available via OSF at https://osf.io/zteck/?view_only=1ef180a0b10f49959166bd4975bb2a21.

Participants and Inclusion Criteria, Studies 1-4

I conducted a power analysis for sample size estimation based on findings from Cooley et al. (2017). Using a MANOVA test, Cooley et al. (2017) Study 2 reports an effect of framing on perceived experience (η_p^2=.20) and agency (η_p^2=.05); their Study 3 reports similar results (η_p^2=.12, framing on experience; η_p^2=.06, framing on agency). Based on the smallest effect size reported (η_p^2=.05), I calculated an *a priori* analysis using somewhat conservative parameters (α=.05, 1-β=.95) to estimate the sample size needed to detect an effect across three groups and with three response variables in a

MANOVA framework. This analysis suggests a total sample size of N=348 for three-condition studies (my Studies 1, 3 and 4), or N=464 for four-condition studies (my Study 2), in order to detect an effect of the described magnitude (small-to-intermediate, $f^2(U)=.05$).

Based on the power analysis above, each study recruited a sample of undergraduate students at the University of Oregon to participate in an online survey for course credit. I set out to include at least N=410 participants in Studies 1, 3, and 4 and N=520 in Study 2 in order to buffer against potentially dropped cases. Using a randomization feature in Qualtrics, each participant was randomly assigned to one experimental condition: individual, group-frame, (group-frame number added, if Study 2) or group composition-frame. All studies excluded any participants who completed their survey in less than one third of the median response time, as I deemed these entries too quick for thoughtful responding. I also excluded from any analysis participants who did not complete measures relevant to that analysis. I also used my two attention check questions to test the extent to which excluding participants based on correctness to those questions influenced the results of the study.

Design and Manipulation

Study 1. This study is a conceptual replication of Cooley et al. (2017) Study 2, using a different participant population. In a between-subjects design with three experimental conditions, I investigated how participants responded to three different messages, which referred to: "an individual," "an accounting company comprised of 15 people," or "15 people who compose the accounting company." These appeals included a

short text description, copied word-for-word from Cooley et al. (2017)'s work. The only difference between conditions was the change in wording just noted.

Study 2. This is a conceptual replication of Cooley et al. (2017) Study 3, using a different participant population. In a between-subjects design with four experimental conditions, I investigated how participants responded to four different messages, which referred to: an individual, a small company, a small company comprised of 20 employees, or 20 employees who compose a small company. These appeals included short vignettes (plain text) that tell the story of a firewall breach, copied word-for-word from Cooley et al. (2017). The only difference between conditions was the change in wording underlined below. The exact wording of these experimental conditions is as follows:

[Individual] Take a moment to imagine a man who was quite successful. Now imagine that, recently, the man's electronic security firewalls were breached and his private accounts were hacked, and as a result he went bankrupt.

[Group Frame] Take a moment to imagine a small company that was quite successful. Now imagine that, recently, the company's electronic security firewalls were breached and its private accounts were hacked, and as a result the company went bankrupt.

[Group Frame – Number Added] Take a moment to imagine a small company comprised of 20 employees that was quite successful. Now imagine that, recently, the company's electronic security firewalls were breached and its private accounts were hacked, and as a result the company went bankrupt.

[Group Composition Frame] Take a moment and imagine 20 employees who compose a small company and who were quite successful. Now imagine that, recently, the 20 employees' electronic security firewalls were breached and their private accounts were hacked, and as a result the company went bankrupt.

Study 3. This study is both a conceptual replication of Cooley et al. (2017) Study 2, and an extension of my Study 1. Using a between-subjects design with three experimental conditions, I investigated how participants responded to three different messages, which referred to: an individual refugee, refugees in a group, a group of refugees. These appeals included a short text description, modeled after Cooley et al. (2017)'s materials, but adapted to a refugee-aid context. The only difference between conditions was the change in wording seen in these text descriptions. The individual refugee condition reads: "There is a refugee in South Sudan who lacks basic necessities like food, water, and shelter." The group-frame condition reads: "There is a group comprised of 15 refugees in South Sudan who lack basic necessities like food, water, and shelter." And the group composition frame reads: "There are 15 refugees who compose a group in South Sudan who lack basic necessities like food, water, and shelter."

Study 4. This study is both a conceptual replication of Cooley et al. (2017) Study 3, and an extension of my Study 2. Using a between-subjects design with three experimental conditions, I investigated how participants responded to three different messages, which referred to: an individual refugee, a small refugee group comprised of 20 South Sudanese people, or 20 South Sudanese people who compose a small refugee group. These appeals included a short vignette (plain text) telling the story of the person(s) in need. The only difference between conditions was the change in wording

shown below. These vignettes were adapted from those originally employed by Cooley et al. (2017) Study 3 to refer to South Sudanese persons in need, instead of people in an accounting company.

[Individual] Take a moment to imagine an individual refugee who had been living in Melut, an area in the Upper Nile region of South Sudan. Now imagine that, due to recent violent conflict in the country, the individual's life and livelihood were no longer safe or secure in this place that used to be home. As a result, this person had no choice but to leave everything behind and search for a new home somewhere else in the world.

[Group Frame] Take a moment to imagine a group comprised of 20 South Sudanese refugees who had been living in Melut, an area in the Upper Nile region of South Sudan. Now imagine that, due to recent violent conflict in the country, the group's lives and livelihood were no longer safe or secure in this place that used to be home. As a result, they had no choice but to leave everything behind and search for a new home somewhere else in the world.

[Group Composition Frame] Take a moment to imagine 20 South Sudanese refugees who compose a group and who had been living in Melut, an area in the Upper Nile region of South Sudan. Now imagine that, due to recent violent conflict in the country, the 20 people's lives and livelihood were no longer safe or secure in this place that used to be home. As a result, they had no choice but to leave everything behind and search for a new home somewhere else in the world.

Procedure and Measures, Study 1

Participants first completed an informed consent and then clicked through to a page that asked them to read about a small accounting company in New York or an individual from that company (based on random assignment to experimental conditions). The text presented on these pages was printed in the same manner as it was in Cooley et al. (2017)'s Study 2 (the same sentences, as described above), with no additional features included.

Measures, Study 1. This study measured mind perception and warmth and competence in exactly the same manner as Cooley et al. (2017) Study 2. To maintain consistency with Cooley et al. (2017)'s method, the 16 total items related to mind perception (8 items) and warmth and competence (8 items) were compiled into a single response block that presented each item in a randomly-generated order (p.4).

Mind Perception. Mirroring Cooley et al. (2017)'s Study 2, this measure was an abridged version of the full MPQ, and included four items assessing perceived capacities for experience (perceived capacity for hunger, physical or emotional pain, physical or emotional pleasure, and fear) and four items assessing perceived capacities for agency (perceived capacity for planning, exercising self-control, remembering, and acting morally). As seen in the original study, these responses were made on a -10 (*not at all*) to 10 (*extremely*) scale.

Warmth and Competence. Judgments of the targets' warmth (how unfriendly, insensitive, sociable, caring) and competence (how skilled, capable, disorganized, lazy) were presented across eight total items. Note that certain items in this set are reverse

scored. As seen in the original study, these responses were made on a -10 (*not at all*) to 10 (*extremely*) scale.

Demographics. Finally, participants answered questions about age, gender, ethnic/racial identity, and political ideology.

Procedure and Measures, Study 2

As in my Study 1, participants first completed an informed consent and then clicked through to a page that asked them to read about a small accounting company in New York or an individual from that company (based on random assignment to experimental conditions). The text presented on these pages was printed in the same manner it was in Cooley et al. (2017)'s Study 3 (the same vignettes, as described above), with no additional features included.

Measures, Study 2. This study measured mind perception and sympathy in exactly the same manner as Cooley et al. (2017) Study 3.

Mind Perception. Participants rated the target on its capacity for "experiencing pain and suffering" (experience item) and for "having intentions and goals" (agency item). These items were presented on scales from 0 (*not at all capable*) to 100 (*extremely capable*).

Sympathy. Participants then rated sympathy for the target on a 0 (*not at all sympathetic*) to 100 (*extremely sympathetic*) scale. This question was presented using a sliding scale with the cursor resting at the midpoint (50) to start.

Demographics. Finally, participants completed questions about age, gender, racial identity, and political ideology.

Procedure and Measures, Studies 3-4

After giving informed consent, participants proceeded to a page presented one of three possible appeals based on experimental condition. This appeal consisted of a short single sentence description (Study 3) or plain text vignette (Study 4); the linguistic manipulation embedded in these text descriptions was the only difference between experimental conditions. After reading these appeals, participants completed a set of primary outcome measures, exploratory questions, attention checks, and demographics. The details of these measures and their ordering is discussed below.

Measures. Studies 3 and 4 incorporated a broad set of outcome measures. Some were included in Cooley et al. (2017)'s original report (experience, agency, and sympathy), and others were new additions (self-reported helping motivation, hypothetical donation amount, empathy, entitativity perception). Two blocks of measures were randomized across two different orderings: order 1 presented self-reported helping motivation and the hypothetical donation immediately after the manipulation text; order 2 presented the mind perception measures immediately after the manipulation text. Randomizing the order of mind perception and helping motivation/donations allowed us to check for potential order effects.[3] All other measures followed the order printed below, using a 1 to 7 response scale unless otherwise noted.

Helping Motivation and Donations. These two variables appeared in the same block in a fixed order (helping motivation first, then donations). The three helping motivation items were: (1) "I feel motivated to help right now", (2) "I feel motivated to

[3] Order 1 presented: helping motivation and hypothetical donation amount, mind perception (experience and agency), sympathy, empathy, entitativity, exploratory questions, attention checks, and demographics. Order 2 presented: mind perception (experience and agency), helping motivation and hypothetical donation amount, sympathy, empathy, entitativity, exploratory questions, attention checks, and demographics.

help the specific [people/person] I read about," and (3) "I am not all that motivated to help in this situation" (reverse coded). Participants responded using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Participants then chose how much they would like to donate to the people they read about, given a hypothetical budget of $25. The $0-25 response scale helped avoid the non-normal distributions that are typical of open-ended donation measures, as well as issues related to the personal wealth of the donor. Specifically, this question asked: "Think back to the message you just read. If you had a budget of $25 that you set aside to give to charity, how much money would you be willing to donate in this case?" Responses were made on a sliding scale from $0-25, with the cursor set at $0. The analysis section of this document outlines a plan for addressing potential skewness and other issues unique to this variable.

Mind Perception. Participants made judgements about the target's capacity for experience and agency. This measure was an abridged version of the full MPQ, and included four items assessing perceived capacities for experience (perceived capacity for hunger, physical or emotional pain, physical or emotional pleasure, and fear) and four items assessing perceived capacities for agency (perceived capacity for planning, exercising self-control, remembering, and acting morally).

Sympathy and Empathy. Participants rated sympathy for the target(s) on a 1 (*not at all sympathetic*) to 7 (*extremely sympathetic*) scale, based on the sympathy measure in Cooley et al. (2017) Study 3. In an extension of their design, I also included a three-item measure of empathy, which is generally associated with altruism and helping. These empathy items were adopted from Erlandsson, Björklund, and Bäckström, (2015) and

derived from the theoretical work of Batson, Fultz, and Schoenrade (1987). They are: "I feel intense compassion," "I feel strong empathic feelings," and "I feel emotionally touched." Participants rated these items on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Entitativity.[4] The group and group composition frame conditions included a 7-item measure of entitativity adapted from Carpenter and Radhakrishnan (2002). Past work suggests the amount of entitativity perceived in a group can affect donation amounts offered toward that group (Smith, Faro, Burson, 2013; Västfjäll, et al., 2014, Study 3), and so including this measure allows us to investigate its role as a potential mechanism using exploratory analyses. The seven items for this measure are: (1) "If something good or bad happens to one member, it affects all members" (2) "This group is a coherent entity, rather than just a bunch of individuals" (3) "Group members are interdependent, depending on each other" (4, reverse coded) "They seem like an unrelated collection of people." (5) "The group has an organized structure." (6) Group members stick together and remain united." (7) "The group resists any forces attempting to disrupt it" (Carpenter & Radhakrishnan, 2002). Participants rated each item on a 7-point Likert-type scale with anchors that read: "Does not describe them at all" and "Describes them very well." This measure was not included in the individual condition as it is only applicable to groups.

[4] Two studies to date have demonstrated the potential of enhanced entitativity (Campbell, 1958) to bring donations to groups up to levels comparable to donations to individuals (Smith, Faro, Burson, 2013; Västfjäll, et al., 2014, Study 3). For example, Smith, Faro, and Burson (2013) found that describing six individuals as "6 siblings" instead of "6 children" resulted in more than double the monetary contributions. The frames Cooley et al. (2017) use may similarly manipulate entitativity, and including this measure allows us to explore how group vs. group composition frames affect perceived entitativity, as well as whether perceived entitativity might mediate the impact of different frames on mind perception, helping motivation, and/or donations.

Check Questions. After exploratory measures and before demographics, participants completed two check questions designed to gauge the extent to which they were attending to detail as they moved throughout the survey. Both check questions were presented *after* the appeal and all other outcome measures. The first question read: "When we asked you to make a donation earlier, what was that donation going toward?" with response options being: (a) To protect the environment; (b*) To help [refugees / a refugee]; (c) To support cancer research; (d) To promote democracy. A second question asked, "When we asked you to make a donation earlier, how much money was in your hypothetical budget?" Response options included: (a) $1; (b) $10; (c*) $25; (d) $100. These measures allowed us to test the extent to which excluding participants based on inaccurate responding to attention checks influenced outcomes in any meaningful way.

Demographics. Participants answered questions about age, gender, ethnic/racial identity, and (because refugee aid is a politically-sensitive topic) political ideology. Political ideology was assessed on a self-reported, 5-point scale (1=very liberal, 2=liberal, 3=moderate, 4=conservative, 5=very conservative).

Planned Analyses and Predictions, Study 1

I established a plan to use a one-way MANOVA to test for the effect of my between-subjects manipulation (frame: individual, group, group composition) on the two primary outcome variables in this study: experience and agency. Cooley et al (2017) used a MANOVA in their Study 2 analysis, which makes it the obvious choice for this follow-up. The appropriateness of MANOVA is also justified based on the presumption that my dependent measures (which are two facets of the same larger variable) are likely to correlate with each other in the moderate range (i.e., from roughly .20 - .60; Meyers,

Gampst, & Guarino, 2006). In conducting this analysis, I attend both to the omnibus test, as well as tests of univariate effects on each variable individually.

Planned Contrasts. Within this MANOVA framework I also examined the specific contrasts outlined in Table 2 below. These tests allowed us to assess the extent to which group and group composition frames differ from one another, as well as the extent to which each frame differs from the individual condition. I predicted that the group composition frame would elicit levels of mind perception comparable to the individual, both of which should differ from the group frame (which I predicted would evoke the least mind perception). These predictions are consistent with what Cooley and colleagues found.

Table 2. Planned Contrasts

	Individual	Group Frame	Group Composition Frame
G vs. GC	0	-1	1
GC vs. I	1	0	-1
G vs. I	-1	1	0

G = Group frame condition; GC = Group composition frame condition; I =Individual condition

Planned Analyses and Predictions, Study 2

Study 2 again uses a MANOVA framework to test for the effect of my between-subjects manipulation (frame: individual, group, group-number added, group composition) on the three outcome variables in this study: experience, agency, and sympathy. As in the previous analysis, I attend both to the omnibus test as well as tests of univariate effects on each variable individually, and conducted the same set of planned contrasts described above [G vs. GC, GC vs. I, and G vs. I]. I again predicted the group

composition frame would elicit levels of mind perception comparable to the individual, both of which should differ from the group frame, which I predicted would evoke the least mind perception.

Study 2 contained two versions of the group frame condition: one that mentions the number "20 employees" and one that does not. I established a plan to check and report on any differences observed between these two conditions (group frame vs. group frame number added).

Mediation Model. In keeping with Cooley et al. (2017), I also set out to test the mediation model presented in their Study 3, which found that the relationship between framing condition (*X*) and sympathy (*Y*) was mediated by differences in mind perception in terms of experience (*M1*) and agency (*M2).* I predicted this analysis would lead to the same findings as Cooley et al. (2017).

Planned Analyses and Predictions, Studies 3 and 4

Accounting for Political Ideology. Issues surrounding refugee aid can be politically polarizing. The current investigation is primarily interested in the effects of group vs. group composition frames, but the effectiveness of both—when applied to a refugee context—could be influenced by participants' attitudes toward refugee aid in general. In order to account for role of political ideology in Studies 3 and 4, I established a plan to treat political ideology (self-reported, continuous variable) as a covariate in the analyses outlined below, which allows for a clearer understanding of how the framing effects themselves influence helping toward refugees while controlling for participants' political inclinations.

Predicting Mind Perception. Studies 3 and 4 first use a one-way MANCOVA to assess the extent to which framing condition affects mind perception (experience and agency), which is the original variable of interest from Cooley et al. (2017). This gauges the extent to which the authors' original findings generalize to refuges, before testing the extent to which these framing effects can also influence other variables beyond mind perception (namely helping motivation and donations). I use the same set of planned contrasts outlined above [G vs. GC, GC vs. I, and G vs. I] to test for mean-level differences in this variable.

Predicting Helping Motivation and Donations. I then test the extent to which framing condition affects helping motivation and donation amounts in two separate ANCOVAs using the same set of planned contrasts above. Helping motivation and donations are of ultimate interest as these variables may be the best indicators of the extent to which certain frames can actually generate material support for groups in need when applied in the real-world.

Working with Donation Outcomes. Donation outcomes when measured in the real-world tend to be non-normally distributed and subject to large percentages of nondonors (e.g., Whillans & Dunn, 2018). Note that my design utilizes a hypothetical $0-25 donation budget in order to protect against these two concerns; however, it is possible that I still observe extreme skewness or nondonors in this outcome measure, and therefore I established a special analysis plan if such circumstances arose. If skewness was more extreme than -1 (i.e., a highly left-skewed distribution), I planned to utilize a square transform procedure on raw donation amounts. Square transformations represent a simple means of addressing left-skewness (Kuhn & Johnson, 2013), which is the more

likely direction of skew given the hypothetical $0-25 scale used. If I observed more than 25% of participants donated $0, I planned to utilize a Tobit regression that accounts for non-donors by left-censoring the data. Tobit regression is one of the most common parametric models used to account for the skewed distributions that can result from a large percentage of nondonors (Andreoni & Miller, 2002; Whillans & Dunn, 2018). In the absence of either of the above two conditions (i.e., extreme skewness or > 25% nondonors), I planned to proceed with a conventional Analysis of Covariance with raw donation amounts the outcome variable. In all cases, I planned to report these donation analyses in accompaniment with the aforementioned contrasts [G vs. GC, GC vs. I, and G vs. I].

Contingent Analysis: Mediation Models. Following the logic of Cooley et al. (2017), if the prior analyses both produced significant results, I planned to then test the extent to which mind perception variables (experience, *M1* and agency, *M2*) mediate the impact of framing condition (*X*) on helping motivation (*Y*) and donations (*Y*) using separate mediation models for these two outcomes. If either of these mediation models appeared consistent with my predictions and the suggestions of the original authors—that group composition framing increases helping motivation and/or donations via enhanced mind perception—then I may go on to explore further the particular relations among outcome variables using different structural configurations.

IV: RESULTS

Study 1

Exclusions and Sample Characteristics. I recruited 570 undergraduate students to participate in this online study for course credit. I excluded 10 participants who did not complete key dependent measures, and another 19 participants who spent less than one third of the median response time taking the survey, which resulted in a final sample of N=541. The sample was 66.9% female, consisted of individuals from multiple ethnic backgrounds (66% Caucasian, 11.8% Hispanic, Latinx or Spanish Origin, 11.5% Asian, 3.1% Black or African American), and ranged in age from 18 to 47, but with 96.1% of participants under the age of 24.

Preliminary Analyses. I first calculated the reliability of scale for the four items that constitute experience ($\alpha = .85$) and agency ($\alpha = .84$).

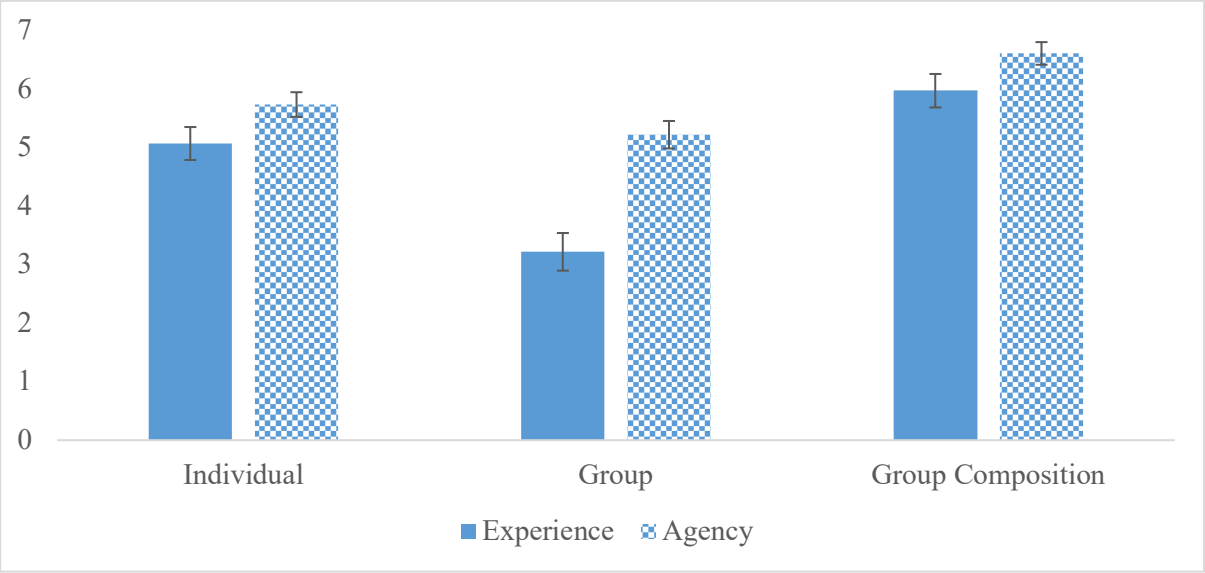
Analysis of Variance: Experience and Agency. Per the analysis plan, I conducted a MANOVA to test for the effect of framing condition (individual, group, or group composition) on mind perception using the two dependent variables experience and agency. These variables were positively correlated with one another (r [541] = .604) in a range indicating the appropriateness of a MANOVA (Meyers, Gampst, & Guarino, 2006). This analysis revealed an omnibus effect of framing condition on mind perception (F [4, 1074] = 12.01, $p < .001$; Wilk's $\Lambda = 0.916$, $\eta_p^2 = .043$), and univariate ANOVAs corroborate the between-subjects effect of framing condition on experience (F [2, 538] = 22.45, $p < .001$, $\eta_p^2 = .077$) and agency (F [2, 538] = 10.79, $p < .001$, $\eta_p^2 = .039$) independently.

Contrast tests indicate that participants in the group composition condition ("15 people who compose the accounting company") perceived their targets as having greater experience ($p < .001$, 95% CI [1.93, 3.57]), and greater agency ($p < .001$, 95% CI [.79, 1.98]) than participants in the group condition ("an accounting company comprised of 15 people"). My second contrast revealed the group composition frame also evoked greater perceptions of experience than the individual frame ($p = .033$, 95% CI [-1.73, -.07]) and greater perceptions of agency ($p = .004$, 95% CI [-1.47, -.27]). My third contrast, which compared the individual and group frame conditions, revealed that participants perceived greater levels of experience in the individual compared to the group ($p < .001$, 95% CI [-2.67, -1.02]), but not greater levels of agency ($p = .089$, 95% CI [-1.11, .08]). Table 3 presents the pattern of means and other descriptive statistics associated with these results.

Table 3. Descriptive Statistics for Dependent Measures in Study 1 Based on Framing Condition

Condition	**M**	**SD**	**95% CI Lower Bound – Upper Bound**		**N**
Experience (1-7)					
Individual	5.07	3.75	4.51	5.62	178
Group	3.22	4.36	2.58	3.85	184
Group Composition	5.97	3.83	5.40	6.53	179
Agency (1-7)					
Individual	5.73	2.81	5.32	6.15	178
Group	5.22	3.19	4.75	5.68	184
Group Composition	6.61	2.59	6.22	6.99	179

Figure 1. Perceptions of Experience and Agency by Framing Condition in Study 1



Note: Error bars represent the standard error of the mean.

Study 2

Exclusions and Sample Characteristics. I recruited 639 undergraduate students to participate in this online study for course credit. No participants were excluded for failure to complete key dependent measures, but I did exclude 18 participants who spent less than one third of the median response time taking the survey, which resulted in a final sample of N=621. The sample was 68.4% female, consisted of individuals from multiple ethnic backgrounds (66.7% Caucasian, 11.9% Asian, 8.7% Hispanic, Latinx or Spanish Origin, 3.9% Black or African American), and ranged in age from 18 to 47, but with 95.6% of participants under the age of 24.

Analysis of Variance: Experience, Agency, and Sympathy. I conducted a MANOVA to test for the effect of framing condition (individual, group, group number-added, group composition) on the three outcome variables in this study—experience, agency, and sympathy—all of which were measured using a single item on a 1-100 scale.

These three variables are positively correlated with one another in the range of r (621) = .408 – .614, which indicates their appropriateness for a MANOVA (Meyers, Gampst, & Guarino, 2006). The MANOVA revealed an omnibus effect of framing condition on this set of outcomes (F [9, 1496.89] = 7.79, $p < .001$; Wilk's $\Lambda = 0.895$, $\eta_p^2 = .036$). Univariate ANOVAs corroborate the effect of framing condition on these outcomes independently: experience (F [3, 617] =11.81, p < .001, $\eta_p^2 = .054$), agency (F [3, 617] = 7.11, p < .001, $\eta_p^2 = .033$), and sympathy (F [3, 617] = 8.51, p < .001, $\eta_p^2 = .04$).

I performed the contrast tests outlined in Table 2 and found that participants in the group composition condition ("20 employees who compose a small company") responded to their targets with greater perceptions of experience (p < .001, 95% CI [8.90, 19.32]), greater perceptions of agency (p = .003, 95% CI [2.52, 12.13]), and more sympathy (p <.001, 95% CI [5.20, 16.18]) than participants who saw the group frame ("a small company"). My second contrast found the group composition frame evoked comparable perceptions of experience (p = .392, 95% CI [-7.50, 2.95]) and agency (p = .382, 95% CI [-6.97, 2.67]) to the individual frame, but significantly more sympathy (p < .001, 95% CI [-17.23, -6.22]) than the individual did. My third contrast, which compared the individual and group frame conditions, revealed that participants perceived greater levels of experience (p < .001, 95% CI [-17.07, -6.60]) and agency (p = .036, 95% CI [-10.00, -0.34]) in the individual, but did not sympathize more with the individual than the group (p = .714, 95% CI [-4.48, 6.55]).

Group Frame vs. Group Frame Number Added. This study tested for differences between the group frame ("a small company") and group frame number added ("a small company comprised of 20 employees") conditions and found no

meaningful differences across the three dependent measures. Contrasts show no differences in perceived experience (p = .060, 95% CI [-0.20, 10.19]), agency (p = .268, 95% CI [-7.51, 2.08]), or sympathy (p = .645, 95% CI [-6.77, 4.19]) between the group frame and group frame number added conditions. See Table 4 for descriptive statistics.

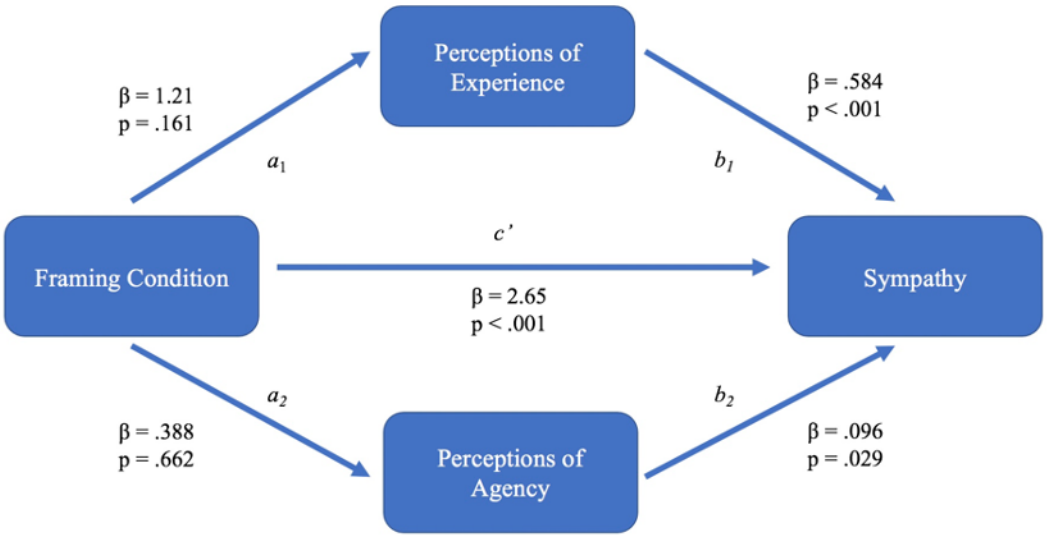
Table 4. Descriptive Statics for Dependent Measures in Study 2 Based on Framing Condition

Condition	M	SD	95% CI Lower Bound – Upper Bound		N
Experience (1-100)					
Individual	80.17	20.67	76.87	83.47	153
Group	68.34	25.77	64.25	72.42	155
Group (Number Added)	73.33	25.25	69.35	77.31	157
Group Composition	82.45	21.37	79.07	85.83	156
Agency (1-100)					
Individual	83.86	18.79	80.86	86.86	153
Group	78.68	23.58	74.94	82.43	155
Group (Number Added)	75.97	23.37	72.29	79.66	157
Group Composition	86.01	20.14	82.82	89.19	156
Sympathy (1-100)					
Individual	67.56	27.00	63.24	71.87	153
Group	68.59	24.90	64.64	72.54	155
Group (Number Added)	67.30	26.52	63.12	71.48	157
Group Composition	79.28	19.50	76.20	82.37	156

Mediation Model. Using the PROCESS macro in SPSS (Hayes, 2017) and 5000 bootstrapped resamples, I conducted a mediation analysis to test the extent to which the relationship between framing condition (*X*) and sympathy (*Y*) was mediated by the perception of mind in terms of experience (*M1*) and agency (*M2).* In constructing this dual mediation model, I calculated the total effect of framing on sympathy (c) (b = 3.39, SE = .89, t [619] = 3.81, p = .0002) and the direct effect of framing on framing on sympathy (c') (b = 2.65, SE = .71, t [619] = 3.76, p = .0002), as well as the indirect effect of framing on sympathy (c – c') [b = .74] through experience (b = .71) and agency (b = .03). This indirect effect, driven primarily by perceptions of experience, accounts for

approximately 21.9% of the total effect of framing on sympathy, and suggests the possibility of a partial mediation; however, bootstrapped confidence intervals indicate little to no evidence of mediation based on experience (95% CI: -0.22, 1.68) or agency (95% CI: -0.13, .23). Examining the path coefficients in Figure 2 indicates that a_1 and a_2 ($X \rightarrow M1, M2$) are not significant although b_1 and b_2 ($M1, M2 \rightarrow Y$) are.

Figure 2. Mediation Model in Study 2



Study 3

Exclusions and Sample Characteristics. I recruited 465 undergraduate students to participate in this online study for course credit. I excluded 4 participants who did not complete key dependent measures, and another 15 who spent less than one third of the median response time taking the survey. This study included two attention check measures; 27 participants incorrectly answered the first question about the purpose of the donation (correct answer: "to help refugees"), and 65 participants incorrectly answered the second question about the cap on their hypothetical budget (correct answer: $25).

Some participants failed to meet more than one of these exclusion criteria. With all exclusions applied, the final sample consisted of N=378. The sample was 70% female, consisted of individuals from multiple ethnic backgrounds (68% Caucasian, 10.8% Hispanic, Latinx or Spanish Origin, 9.8% Asian, 3.2% Black or African American), and ranged in age from 18 to 40, but with 98.4% of participants under the age of 24.[5]

Political Ideology. I asked participants to self-identify their political ideology on a 5-point scale, and found that 20.4% identified as "very liberal," 43.9% identified as "liberal," 29.6% identified as "moderate," 5% identified as "conservative," and .8% as "very conservative." Political ideology operates as a covariate in the analyses below.

Preliminary Analyses. I first calculated reliability metrics for the four items that constitute experience (α = .68) and agency (α = .87). I also conducted this analysis on the three items that constitute helping motivation (α = .83) and the seven that constitute entitativity (α = .71).[6] Table 5 presents correlations for the key measures in this study.

Table 5. Correlation Matrix for Key Measures in Study 3

Measure	1	2	3	4	5	6
1. Experience	—					
2. Agency	.65**	—				
3. Donations	.09	.14**	—			
4. Helping Motivation	.09	.12*	.34**	—		
5. Entitativity+	.02	.07	.24**	.19**	—	
6. Political Ideology++	-.15**	-.15**	-.13**	-.35**	-.03	—

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
+ Correlations involving entitativity are based on n=250 cases because this variable was not measured in the individual condition; for all other correlations, N=378.
++Higher values on this variable are associated with a more conservative political ideology.

[5] To view a set of analyses *without* these attention check filters applied, please see my Online Supplement.
[6] Note that I do not present the results associated with the "entitativity" outcome in the main text; a formal report of this variable in Studies 3 and 4 is provided in the Online Supplement. I observed no differences in entitativity based on framing condition.

Analysis of Covariance: Mind Perception. Per my analysis plan I conducted a MANCOVA to test the effect of framing condition (individual, group, or group composition) on mind perception using the two variables experience and agency and accounting for political ideology as a covariate. Political ideology revealed itself as a useful covariate in both the multivariate (F [2, 373] = 5.77, p = .003) and univariate tests (F [1, 374] = 9.03, p = .003; F [1, 374] = 9.97], p = .002).[7] The MANCOVA did not yield an omnibus effect of framing condition on mind perception (F [4, 746] = 1.53, p = .192; Wilk's Λ = 0.98, η_p^2 =.008). Univariate tests similarly yielded no effects of framing condition on experience (F [2, 374] = 2.05, p = .130, η_p^2 =.011) or agency (F [2, 374] = 1.78, p = .169, η_p^2 =.009) independently.

Applying my three planned contrasts to both of these dependent variables individually, only one of six comparisons breached statistical significance: the group composition frame (M_{adj} = 7.49, SE = .24) evoked significantly greater perceptions of experience than the group frame (M_{adj} = 6.79, SE = .25; p = .043, 95% CI [0.02, 1.38]). These two conditions did not differ in their perceptions of agency (p = .115, 95% CI [-0.19, 1.78]). Table 6 presents descriptive statistics for Study 3.

Order of Presentation. Critically, the design of my Studies 3 and 4 randomly presented half of participants with experience and agency measures immediately after reading the appeals, while the other half of participants completed measures for helping motivation and donations immediately after the appeals (and experience and agency measures after these, but still before several other measures). Here I include this variable, "order," as a second IV in a new MANCOVA; this model has a 3 (framing condition:

[7] Political ideology constitutes a useful covariate in each of the models I present for Studies 3 and 4. Note that there were no covariate x predictor interactions observed in any of these studies.

individual, group, or group composition) x 2 (order: mind perception first vs. donations first) structure, and again accounts for political ideology as a covariate. The model did not yield a main effect of framing condition on mind perception (F [2, 740] = 1.43, p = .223; Wilk's Λ = 0.985, η_p^2 =.008), and this was also the case in univariate tests on experience (F [2, 371] = 1.84, p = .160, η_p^2 =.01) and agency (F [2, 371] = 1.61, p = .200, η_p^2 =.01). There was a significant main effect of order on mind perception (F [2, 370] = 5.83, p = .003; Wilk's Λ = 0.97, η_p^2 =.031), and in univariate tests for experience (F [1, 371] = 11.07, p = .001, η_p^2 =.029) and agency (F [1, 371] = 7.40, p = .007, η_p^2 =.02). The interaction between order and condition was not significant in either the multivariate (F [4, 740] = 0.99, p = .410; Wilk's Λ = 0.99, η_p^2 =.005) or univariate tests on experience (F [2, 371] = 1.34, p = .263) or agency (F [2, 371] = 0.82, p = .439).

The pattern of means in Table 6 aids interpretation of the main effect of order: participants who rated experience and agency immediately after the manipulation provided lower ratings overall for experience (M_{adj} = 6.68, SE = .19, n = 190) and agency (M_{adj} = 4.59, SE = .28), regardless of framing condition, compared to participants who rated experience and agency after making donation decisions and reporting helping motivation (M_{adj} = 7.61, SE = .19, for experience; M_{adj} = 5.69, SE = .28, for agency; n =188).

Simple Main Effects. Although I observed no interaction effect between framing condition and order of presentation, I decided to explore the pattern of outcomes with a greater degree of specificity by analyzing the simple main effects of framing condition within both orders of presentation. Examining all pairwise comparisons across both dependent variables, I observed no significant differences below the p < .05 level when

using Bonferroni adjustments (since tests involving order of presentation were not written into my analysis plan, I corrected for multiple comparisons). One comparison did approach significance: in the donations first order of presentation, participants who saw the group composition frame reported higher perceptions of experience (M_{adj} = 8.09, *SE* = .33) compared to participants in the group frame condition (M_{adj} = 6.96, *SE* = .36; p = .051, Bonferroni adjusted). This clarifies how the previously reported difference in perceived experience between the group and group composition conditions (contrast one) from my one-way ANCOVA was driven by the "donations first" condition (there was no difference in outcomes for the "mind perception first" condition). For a full report of all pairwise comparisons associated with these tests of simple main effects, and a table of all estimated marginal means from Study 3, please see the Online Supplement.

Table 6. Descriptive Statistics for Mind Perception Measures in Study 3 Based on Framing Condition and Order of Presentation

	Overall		**Order of Presentation**			
			MP First		Donation First	
	M	*SD*	*M*	*SD*	*M*	*SD*
Experience (-10 to 10)						
Individual (N=128)	7.20	2.66	6.59	2.74	7.83	2.44
Group (N=121)	6.81	2.87	6.70	2.87	6.93	2.90
Group Composition (N=129)	7.44	2.77	6.72	3.00	8.09	2.38
Agency (-10 to 10)						
Individual (N=128)	4.91	4.04	4.02	4.23	5.83	3.65
Group (N=121)	4.91	3.91	4.70	3.85	5.16	3.99
Group Composition (N=129)	5.60	4.06	5.02	3.93	6.13	4.12
N						
	N=378		*N=190*		*N=188*	

Analysis of Covariance: Donations. Donations outcomes were not skewed beyond the threshold dictated in my analysis plan, so I analyzed the raw donation

amounts ($0-25 scale). I conducted an ANCOVA to test for the effect of framing condition (individual, group, or group composition) on donations when accounting for political ideology. Political ideology again proved a useful covariate ($F [1, 374] = 7.53$, $p = .006$). The ANCOVA revealed no omnibus effect of framing condition on donations ($F [2, 374] = 1.63$, $p = .198$). None of my planned contrasts were significant; contrast one, which compared the group vs. group composition frames, was the closest to approaching significance ($p = .088$, 95% CI [-0.23, 3.35]).[8]

Order of Presentation. To explore differences among framing conditions with a greater degree of specificity I added the second IV "order" to this ANCOVA and tested the extent to which the order of presentation affected donation outcomes or interacted with framing condition to affect donation outcomes. This 3 x 2 ANCOVA yielded no main effect of framing condition ($F [2, 371] = 1.66$, $p = .192$), no main effect of order ($F [1, 371] = 1.12$, $p = .291$), and no interaction between framing condition and order ($F [2, 371] = 0.96$, $p = .382$). I again followed up with tests of simple main effects, but found none. I present results of pairwise comparisons across framing conditions and orders of presentation in the Online Supplement.

Analysis of Covariance: Helping Motivation. Mirroring the analyses above I conducted another ANCOVA to test for the effects of framing condition (individual, group, or group composition) on helping motivation when accounting for political ideology. Political ideology was again a useful covariate ($F [1, 374] = 50.65$, $p < .001$).

[8] I also searched for differences based on framing condition using a set of alternative analyses that rescinds the attention check filters applied to Studies 3 and 4. These results are largely consistent with those reported here, although this one contrast test did change from null to significant when making that change: participants who saw the group composition frame offered more donations compared participants who saw the group frame (contrast one, $p = .039$), when attention check filtered were removed in Study 3.

This ANCOVA revealed no omnibus effect of framing condition on helping motivation (F [2, 374] = 1.36, p = .259), and none of my planned contrasts indicate significant differences between framing conditions (p*s* > .101).

Order of Presentation. I again added the second IV "order" to the ANCOVA to explore the extent to which order of presentation affected reported helping motivation or interacted with framing condition to affect helping motivation. This 3 x 2 ANCOVA revealed no main effect of framing condition (F [2, 371] = 1.29, p = .275), no main effect of order (F [1, 371] = 0.71, p = .401), and no interaction between the two (F [2, 371] = 0.97, p = .381). In an analysis of simple main effects, I found no significant pairwise comparisons (see Online Supplement for full report).

Table 7. Descriptive Statistics for Donations and Helping Motivation in Study 3 Based on Framing Condition and Order of Presentation

	Overall		**Order of Presentation**			
			MP First		Donation First	
	M	*SD*	*M*	*SD*	*M*	*SD*
Donations ($0-25)						
Individual (N=128)	17.39	7.50	18.43	6.86	16.32	8.02
Group (N=121)	16.98	7.39	16.89	7.80	17.09	6.96
Group Composition (N=129)	18.38	6.84	18.52	6.79	18.25	6.94
Helping Motivation (1-7)						
Individual (N=128)	5.42	1.25	5.57	1.03	5.28	1.44
Group (N=121)	5.27	1.20	5.25	1.23	5.29	1.18
Group Composition (N=129)	5.10	1.17	5.09	0.96	5.11	1.34
N						
	N=378		*N=190*		*N=188*	

Study 4

Exclusions and Sample Characteristics. I recruited 473 undergraduate students to participate in this online study for course credit. I excluded 6 participants who did not

complete key dependent measures, and another 8 who spent less than one third of the median response time taking the survey. This study also included two attention check measures; 29 participants incorrectly answered the first question about the purpose of the donation (correct answer: "to help refugees"), and 65 participants incorrectly answered the second question about the cap on their hypothetical budget (correct answer: $25). Some participants failed to meet more than one of these exclusion criteria. With all filters applied, the final sample consisted of N=385. The sample was 67.3% female, consisted of individuals from multiple ethnic backgrounds (69.1% Caucasian, 9.9% Hispanic, Latinx or Spanish Origin, 12.2% Asian, 3.4% Black or African American), and ranged in age from 18 to 43, but with 97.4% of participants under the age of 24.

Political Ideology. I asked participants to self-identify their political ideology on a 5-point scale, and found that 17.7% identified as "very liberal," 47% identified as "liberal," 28.6% identified as "moderate," 6.5% identified as "conservative," and none as "very conservative." Per my analysis plan, political ideology operates as a covariate in the analyses presented below.

Preliminary Analyses. I first calculated the reliability of scale for the four items that constitute experience ($\alpha = .77$) and agency ($\alpha = .85$). I also conducted this analysis on the three items that constitute helping motivation ($\alpha = .79$) and the seven that constitute entitativity ($\alpha = .72$). Table 8 presents correlations for the key measures in this study.

Table 8. Correlation Matrix for Key Measures in Study 4

Measure	1	2	3	4	5	6
1. Experience	—					
2. Agency	.69**	—				
3. Donations	.13**	.15**	—			
4. Helping Motivation	.18**	.16**	.40**	—		
5. Entitativity+	.14*	.06	.29**	.23**	—	
6. Political Ideology++	-.25**	-.25**	-.18**	-.27**	-.06	—

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
+ Correlations involving entitativity are based on n=256 cases because this variable was not measured in the individual condition; for all other correlations, N=385.
++Higher values on this variable are associated with a more conservative political ideology.

Analysis of Covariance: Mind Perception. I conducted a MANCOVA to test for the effect of framing condition (individual, group, or group composition) on mind perception using the two variables experience and agency and accounting for political ideology as a covariate. Political ideology was again a useful covariate in multivariate ($F [2, 380] = 15.37$, $p < .001$) and in univariate tests of experience ($F [1, 381] = 25.87$, $p < .001$) and agency ($F [1, 381] = 25.87$, $p < .001$). The MANCOVA showed an omnibus effect of framing condition on mind perception ($F [4, 760] = 2.68$, $p = .031$; Wilk's $\Lambda = 0.972$, $\eta_p^2 = .014$); however, univariate tests did not indicate significant effects of framing condition on experience ($F [2, 381] = 1.61$, $p = .201$) or agency ($F [2, 281] = 0.47$, $p = .625$) as independent outcomes. Contrast tests further corroborate a lack of significant differences between framing conditions in terms of experience (p*s* > .079) or agency (p*s* > .334). Table 9 presents descriptive statistics for these outcomes.

Order of Presentation. I added the second independent variable "order" to the MANCOVA just described to test the extent to which the order of presentation affected

mind perception or interacted with framing condition to affect mind perception in Study 4. This 3 x 2 MANCOVA revealed a main effect of framing condition on mind perception ($F [4, 754] = 2.56$, $p = .037$, Wilk's $\Lambda = 0.97$, $\eta_p^2 = .013$), no main effect of order ($F [2, 377] = 1.37$, Wilk's $\Lambda = 0.99$, $p = .254$), and no interaction between framing condition and order ($F [4, 754] = 0.91$, Wilk's $\Lambda = 0.99$, $p = .456$). Univariate 3 x 2 ANOVAs indicate no significant effects of condition, order, or their interaction on experience (p*s* > .110) or agency (p*s* > .173).

Table 9. Descriptive Statistics for Mind Perception Measures in Study 4 Based on Framing Condition and Order of Presentation

	Overall		**Order of Presentation**			
			MP First		Donation First	
	M	*SD*	*M*	*SD*	*M*	*SD*
Experience (-10 to 10)						
Individual (N=129)	6.93	2.85	6.53	3.15	7.40	2.40
Group (N=121)	7.07	2.98	7.11	2.87	7.02	3.11
Group Composition (N=135)	7.49	2.71	7.16	2.76	7.80	2.65
Agency (-10 to 10)						
Individual (N=129)	5.65	3.52	5.26	3.68	6.10	3.29
Group (N=121)	5.77	3.25	6.08	3.27	5.45	3.22
Group Composition (N=135)	5.38	4.03	5.02	4.02	5.71	4.05
N						
	N=385		*N=197*		*N=188*	

Based on the main effect of framing condition in the 3 x 2 MANCOVA, and the omnibus effect of framing condition in the one-way MANCOVA, I applied my planned contrasts to test for meaningful differences between framing conditions in terms of experience (p*s* > .106) or agency (p*s* > .328) but found none. I also explored the potential for simple main effects of framing condition within the two different orders of presentation but found no significant pairwise comparisons across either dependent

variable. A full report of these tests as well as estimated marginal means for all outcomes in Study 4 are provided in the Online Supplement.

Analysis of Covariance: Donations. Donations outcomes were again not skewed beyond the threshold dictated in my analysis plan, so I analyze the raw donation amounts (0-25 scale). I conducted an ANCOVA to test for the effect of framing condition (individual, group, or group composition) on donations when accounting for political ideology. Political ideology again constituted a useful covariate ($F [1, 381 = 12.51$, $p < .000$, $\eta_p^2 = .032$). The ANCOVA revealed no omnibus effect of framing condition on donations ($F [2, 381] = 0.17$, $p = .838$), and my planned contrasts show no meaningful differences in donation outcomes (p*s* > .561) based on framing.

Order of Presentation. I added the second IV "order" to the ANCOVA above to test the extent to which the order of presentation affected donation outcomes or interacted with framing condition to affect donation outcomes. This 3 x 2 ANCOVA yielded no main effect of framing condition ($F [2, 378] = 0.19$, $p = .828$), no main effect of order ($F [1, 378] = 0.02$, $p = .884$), but did reveal a significant interaction between framing condition and order on donations ($F [2, 378] = 3.49$, $p = .031$, $\eta_p^2 = .018$). No planned comparisons between framing conditions were significant (p*s* > .539); however, based on the significant condition x order interaction just reported, I decided to follow up with an analysis of simple main effects.

Simple Main Effects. I explored the possibility that framing condition affected donations in a predictable manner (G < GC, I) but only when the donation measure came soon after the manipulation. However, this analysis showed no simple main effect of framing condition within the donations first group ($F [2, 378] = 2.29$, $p = .103$, $n = 188$). I

also tested for but found no simple main effect of framing condition on donations within the mind perception first group (F [2, 378] = 1.38, p = .251, *n* = 197). Pairwise comparisons further corroborate a lack of meaningful differences between framing conditions for either order (p*s* > .130) despite the significant interaction in the 3 x 2 ANCOVA above. I report these tests of simple main effects in the Online Supplement.

Analysis of Covariance: Helping Motivation. Mirroring the analyses above I conducted another ANCOVA to test for the effect of framing condition (individual, group, or group composition) on helping motivation when accounting for political ideology. Political ideology was again a useful covariate (F [1, 381] = 31.28, p < .000, η_p^2 =.076). This ANCOVA revealed no omnibus effect of framing condition on helping motivation (F [2, 381] = 0.52, p = .592), and none of my planned contrasts were significant (p*s* >.330).

Order of Presentation. I again added the IV "order" to this ANCOVA to explore the extent to which the order of presentation affected reported helping motivation or interacted with framing condition to affect helping motivation. This 3 x 2 ANCOVA showed no main effect of framing condition (F [2, 378] = 0.53, p = .591), no main effect of order (F [1, 378] = 1.37, p = .243), and no significant interaction between the two (F [2, 378] = 0.41, p = .665). There were no significant contrasts between levels of framing condition (p*s* > .340), and no simple main effects to report (see Online Supplement). Table 10 reports descriptive statistics for donations and helping motivation in Study 4.

Table 10. Descriptive Statistics for Donations and Helping Motivation in Study 4 Based on Framing Condition and Order of Presentation

	Overall		**Order of Presentation**			
			MP First		Donation First	
	M	*SD*	*M*	*SD*	*M*	*SD*
Donations ($0-25)						
Individual (N=129)	16.79	7.25	15.79	7.68	17.98	6.56
Group (N=121)	16.50	7.94	17.82	7.56	15.12	8.15
Group Composition (N=135)	17.09	7.41	16.94	7.83	17.23	7.06
Helping Motivation (1-7)						
Individual (N=129)	5.06	1.19	5.14	1.18	4.96	1.21
Group (N=121)	5.15	1.29	5.25	1.23	5.05	1.35
Group Composition (N=135)	5.02	1.16	5.02	1.21	5.01	1.12
N						
	N=385		*N=197*		*N=188*	

V: DISCUSSION

The aim of this investigation has been to replicate and extend the work of Cooley et al. (2017), who found that group composition frames ("people in a group") evoke higher perceptions of experience and agency, and in turn more sympathy, than group frames (i.e., saying "a group of people"). If generalizable, this framing technique may help bolster feelings of sympathy and even monetary support for people in need, like refugees. I tested this possibility here, first employing these frames in an accounting company context similar to the original report, and later in a charitable appeal to help refugees. In Studies 1 and 2, I successfully reproduced many of Cooley et al.'s findings related to enhanced experience and agency in the accounting company context. In Studies 3 and 4, I did not find convincing evidence of enhanced mind perception, helping motivation, or monetary contributions in a refugee aid context. The sections below elaborate on these findings, and Table 11 provides an overview of key results across all studies.

Table 11. Summary of Key Comparisons Between Framing Conditions for All DVs in All Studies

	Contrast 1 G vs GC	Contrast 2 GC vs. I	Contrast 3 G vs. I
Cooley et al. (2017), S2			
Experience	G < GC***	*ns*	G < I***
Agency	G < GC*	*ns*	G < I**
Cooley et al. (2017), S3			
Experience	G < GC***	*ns*	G < I***
Agency	G < GC*	*ns*	G < I***
Sympathy	G < GC***	*ns*	G < I***
Study 1			
Experience	G < GC***	GC > I*	G < I***
Agency	G < GC***	GC > I**	*ns*
Study 2			
Experience	G < GC***	*ns*	G < I***
Agency	G < GC**	*ns*	G < I*
Sympathy	G < GC***	GC > I***	*ns*
Study 3			
Experience	G < GC*	*ns*	*ns*
Agency	*ns*	*ns*	*ns*
Helping	*ns*	*ns*	*ns*
Donations	*ns*	*ns*	*ns*
Study 4			
Experience	*ns*	*ns*	*ns*
Agency	*ns*	*ns*	*ns*
Helping	*ns*	*ns*	*ns*
Donations	*ns*	*ns*	*ns*

Note that p values for Cooley et al. were derived from Tukey post-hoc tests in Study 2 and planned contrasts in Study 3; the p values presented here from my four studies were all derived from planned contrasts.
***Significant at the p < .001 level
** Significant at the p < .01 level
* Significant at the p < .05 level

Studies 1 and 2 Largely Reproduce Findings from Cooley et al. (2017), with Some Exceptions.

Studies 1 and 2 presented here, which closely mirrored the designs of Cooley et al. (2017)'s Studies 2 and 3, produced results largely consistent with what the original

authors found: the group composition frame led to greater perceptions of experience and agency, and more sympathy (Study 2), compared to the group frame. This comparison is captured in contrast one (see Table 11) and is of key interest to the original and current authors because it showcases the utility of employing the group composition frame in persuasive communication.

Studies 1 and 2 also found the group composition frame evoked either greater (Study 1) or statistically equivalent (Study 2) perceptions of experience and agency compared to the individual (contrast two). In my Study 2, the group composition frame evoked more sympathy than even the individual did; this was not the case for Cooley et al. (2017), who found statistically equivalent results for the group composition and individual conditions across all measures in their studies.

Comparing the individual to the group frame (contrast 3), I found results in Studies 1 and 2 that were partially consistent with Cooley et al. (2017). Perceptions of experience were higher for the individual compared to the group (Studies 1 and 2). Sometimes this was also the case for perceived agency (Study 2), although sometimes these conditions were no different in perceived agency (Study 1). There was no difference in sympathy for the group frame compared to the individual in Study 2, which departed from the results of Cooley et al. (2017), who found the individual condition evoked more sympathy. My mediation model was somewhat consistent with Cooley et al. (2017)'s, but I was unable to provide evidence of full mediation (i.e., that frames enhance sympathy by operating through enhanced mind perception) like they found.

Studies 3 and 4 Suggest Findings from Cooley et al. (2017) Do Not Clearly Generalize to Refugee Aid Context.

Studies 3 and 4 applied group and group composition frames to a refugee aid context and found little to no evidence that the group composition frame evoked greater perceptions of mind (especially in the case of agency), or greater helping motivation, or donations, compared to the group or individual frames. I observed no major differences between framing conditions across the majority of outcomes in these studies, with one exception (see Table 11): participants who saw the group composition frame in Study 3 perceived more experience in their targets than participants who saw the group frame ($p = .043$).[9] On the whole, I looked for differences based on framing condition across four key dependent measures (six pairwise comparisons for each measure, with order of presentation added) spanning two studies and 750 participants and found little evidence to support the notion that group composition frames meaningfully increased helping toward refugees.

General Takeaways

Studies 1 and 2 successfully reproduced the main findings from Cooley et al. (2017) showing that group composition frames reliably enhance mind perception and sympathy compared to group frames when used in a business setting. Knowing that these framing effects transfer to a new participant population, and that they emerge consistently in a business context, represents an important step forward for this line of work. Since

[9] When examining the simple main effects of framing condition for the two different orders of presentation (mind perception measures first vs. donation first) in Studies 3 and 4, one of 48 pairwise comparisons neared significance—it corresponds to the contrast described here (contrast one), and clarifies that enhanced perceptions of experience in the group composition condition in Study 3 were driven by participants in the donations first subgroup.

undergraduate students and mTurk workers are common pools from which social psychologists tend to sample, it is useful to know both of these populations can serve future research in this area. In Study 2, I also found that group composition frames ("20 employees who compose a small company") elicited more mind perception and sympathy than group frames with or without the "number added" ("a small company" or "a small company comprised of 20 employees"). This again helps solidify our understanding of these framing effects and provides added support for the persuasive utility of group composition frames in certain situations.

The findings in Studies 3 and 4 suggest that while group composition frames may constitute an effective way to enhance the mind perception of collectives within the original context of an accounting company, its generalizability to other situations may be limited. It is important, however, not to make definitive conclusions based on the null findings reported for Studies 3 and 4, as null findings can be difficult to interpret and can result from a number of reasons (Aberson, 2002). That Studies 3 and 4 failed to demonstrate the intended effects while Studies 1 and 2 did may speak to either the uniqueness of the business setting (e.g., the collective noun "company" may carry negative connotations that depresses responses for the group frame condition in comparison to the group composition frame), or the uniqueness of the refugee aid setting (e.g., the word "refugee" may spark psychological reactions that overpower the subtlety of the linguistic frames, rendering them null in this context). Experimentally testing whether or not the predicted outcomes would surface using different sets of groups—a

collection of school children, members of a soccer team, a local homeless family—would help clarify where exactly the effect's boundary lies.[10]

Limitations and Future Directions

These studies asked participants to make hypothetical donations as part of survey that also contained several other measures. A better avenue toward understanding the ability of group composition frames to elicit donations might be to tap into real-world situations where individuals are in a better position to donate money, and to measure true monetary donation amounts in those contexts. Conducting this work as part of a field study, or in collaboration with a group that already sends charitable appeals designed to help groups in need, may provide a clearer picture of these frame's real-world fundraising potential, and heighten the external validity of this work. Testing the effectiveness of these frames when they are included as part of a richer, more lifelike stimulus would also help clarify their likelihood of meaningfully influencing outcomes like donation amounts in the real world.

My studies recruited undergraduate students at the University of Oregon as participants with the goal of testing the extent to which the original findings from Cooley et al. (2017) would resurface in this new population, which differed from the original tests on Amazon Mechanical Turk. While the use of an undergraduate sample allowed us to recreate the original findings with relatively low research costs, it also resulted in a restricted age range and a liberal-dominated political orientation. Whether or not the

[10] It is worth nothing that in Studies 3 and 4, I did observe trends that were directionally consistent with Cooley et al. (2017)'s findings and my predictions (either GC, I > G, or GC > I, G) for some variables; however, these trends were inconsistent, not large enough to breach statistical significance in most cases, and appeared only for the experience and donation outcomes, not for outcomes related to agency or helping motivation.

results of Studies 3 and 4 may have differed if an mTurk sample were used, we simply do not know. Further studies that incorporate non-WEIRD samples (Henrich, Heine, & Norenzayan, 2010), or cross-cultural samples, may lead to important insights as this body of work expands. For example, past work suggests that collectivist cultures understand groups differently than individualistic ones, and this may in turn influence the effectiveness of group vs. group composition frames within these different cultural contexts (Kashima et al., 2005).

My studies tested these frames using only two target groups – the accountant/accounting company and the refugee/group of refugees. Moving forward, researchers should explore the extent to which these frames apply to other group contexts. As noted above, it is impossible to determine from the work presented here whether it is the business context that uniquely allows the GC > G effect to surface or the refugee context that uniquely denies it. It is also conceivable that details of the two situations play an important role in the observed outcomes: in the accounting context, my undergraduate participants in America may find the story of a data breach relatable as they complete the survey using a personal computer; the refugee aid situation may feel too foreign, emotionally overwhelming, or may activate preconceived notions among participants that render the subtle linguistic frames null in this context. Understanding the extent to which different results would come about from modified designs that apply group composition frames to new contexts and target groups, to the same groups but with new wording choices (e.g., "six refugees who comprise a family"), in spoken word vs. written word, or in applied contexts that measure human behavior immediately following exposure to such linguistic manipulations, all constitute promising avenues for future

research. Incorporating open-ended responses and analyzing those qualitative data using text analysis software may also bring to light subtle differences in the experiences of participants who witness either a group or group composition frame.

VI: CONCLUSIONS

A reasonable inference based on the results of Cooley et al. (2017) is that communicators might employ group composition frames ("people in a group") to elicit enhanced perceptions of mind and sympathy, and possibly even to increase monetary contributions for persons in need. The original authors and secondary reporters raised this very possibility. In the studies presented here, I directly tested hypotheses to this effect in a refugee aid context and ultimately found little to no evidence supporting the notion that group composition frames are likely to result in meaningfully different persuasive outcomes compared to group frames (or compared to individuals). These results notwithstanding, the quest to identify simple and low-cost strategies that might help communicators generate support for refugees or other psychologically distant collectives for which it can be difficult bridge the empathy gap (Slovic & Slovic, 2015) remains an important research mission, as does the task of modeling the cognitive and emotional processes behind each strategy's effectiveness. Promising developments are arising from neighboring lines of research (see, Hsee, Zhang, and Xu's (2014) "unit asking" method; or Smith, Faro, Burson (2013)'s entitativity frames), which suggests that experimenting with linguistic frames may not be a misguided path to continue down.[11]

[11] Hsee, Zhang, and Xu's (2014) "unit asking" method first asks participants how much money they would be willing to contribute to help a single person in need. After recording this response, researchers then ask about a larger collective (e.g., a group of 20 people), and they find that participants' contributions to the group of 20 are greater in this case compared to participants who are just asked about a group of 20 to begin with. A second technique involves framing multiple people in a way that highlights their "entitativity"—the extent to which they constitute a coherent, meaningful unit (Campbell, 1958). A study from Smith, Faro, Burson (2013) found that describing "6 children" instead as "6 siblings" resulted in more than double the amount of monetary contributions being offered to the cause. So far only two published papers that I am aware of have explored the effectiveness of entitativity frames in an aid context; both use relatively small groups of either six (Smith et al., 2013) or eight (Västfjäll, Slovic, Mayorga, & Peters, 2014, Study 3).

The null findings reported here do not rule out the possibility that framing a target through the group composition technique might bring them to life in a way that group frames do not. Indeed, my first two studies found this to be the case using relatively simple designs that asked participants to evaluate "a man," "a small company," or "20 employees who compose a small company." What my results do not show is consistent evidence that group composition frames meaningfully elicit increased helping motivation or monetary donations for refugees when presented in the style of a charitable appeal, although investigating this possibility again in another context, or in conjunction with other framing strategies, would be worth the effort. Until that time, communicators hoping to adopt this particular technique should be aware the evidence behind its applied utility is still developing.

REFERENCES CITED

Aberson, C. (2002). Interpreting null results: Improving presentation and conclusions with confidence intervals. *Journal of Articles in Support of the Null Hypothesis*, *1*(3), 36-42.

Andreoni, J., & Miller, J. (2002). Giving according to GARP: An experimental test of the consistency of preferences for altruism. *Econometrica*, *70*(2), 737-753.

Batson, C. D., Fultz, J., & Schoenrade, P. A. (1987). Distress and empathy: Two qualitatively distinct vicarious emotions with different motivational consequences. *Journal of Personality*, *55*(1), 19-39.

Batziou, A. (2011). Framing 'otherness' in press photographs: The case of immigrants in Greece and Spain. *Journal of Media Practice*, *12*(1), 41-60.

Bleiker, R., Campbell, D., Hutchison, E., & Nicholson, X. (2013). The visual dehumanisation of refugees. *Australian Journal of Political Science*, *48*(4), 398-416.

Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (don't expect an easy answer). *Journal of Personality and Social Psychology*, *98*(4), 550.

Campbell, D. T. (1958). Common fate, similarity, and other indices of the status of aggregates of persons as social entities. *Behavioral Science*, *3*(1), 14-25.

Carpenter, S., & Radhakrishnan, P. (2002). The relation between allocentrism and perceptions of ingroups. *Personality and Social Psychology Bulletin*, *28*(11), 1528-1537.

Chandler, J., Mueller, P., & Paolacci, G. (2014). Nonnaïveté among Amazon Mechanical Turk workers: Consequences and solutions for behavioral researchers. *Behavior Research Methods*, *46*(1), 112-130.

Cooley, E., Payne, B. K., Cipolli, W., III, Cameron, C. D., Berger, A., & Gray, K. (2017, April 3). The paradox of group mind: "People in a Group" have more mind than "a Group of People." *Journal of Experimental Psychology: General*. Advance online publication. http://dx.doi.org/10.1037/xge0000293

Dickert, S., Kleber, J., Västfjäll, D., & Slovic, P. (2016). Mental imagery, impact, and affect: A mediation model for charitable giving. *PloS one*, *11*(2), e0148274.

Erlandsson, A., Björklund, F., & Bäckström, M. (2015). Emotional reactions, perceived impact and perceived responsibility mediate the identifiable victim effect, proportion dominance effect and in-group effect respectively. *Organizational Behavior and Human Decision Processes*, *127*, 1-14.

Goodman, J. K., Cryder, C. E., & Cheema, A. (2013). Data collection in a flat world: The strengths and weaknesses of Mechanical Turk samples. *Journal of Behavioral Decision Making*, *26*(3), 213-224.

Gray, H. M., Gray, K., & Wegner, D. M. (2007). Dimensions of mind perception. *Science*, 315(5812), 619-619.

Gray, K., Knobe, J., Sheskin, M., Bloom, P., & Barrett, L. F. (2011). More than a body: Mind perception and the nature of objectification. *Journal of Personality and Social Psychology*, *101*(6), 1207.

Gray, K., Jenkins, A. C., Heberlein, A. S., & Wegner, D. M. (2011). Distortions of mind perception in psychopathology. *Proceedings of the National Academy of Sciences*, *108*(2), 477-479.

Gray, K., & Wegner, D. M. (2012). Feeling robots and human zombies: Mind perception and the uncanny valley. *Cognition*, *125*(1), 125-130.

Gray, K., Young, L., & Waytz, A. (2012). Mind perception is the essence of morality. *Psychological Inquiry*, 23(2), 101-124.

Haslam, N., & Loughnan, S. (2014). Dehumanization and infrahumanization. *Annual Review of Psychology*, *65*, 399-423.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, *466* (7302), p. 29-29.

Huff, C., & Tingley, D. (2015). "Who are these people?" Evaluating the demographic characteristics and political preferences of MTurk survey respondents. *Research & Politics*, *2*(3), 2053168015604648.

Jago, A. S., & Laurin, K. (2017). Corporate personhood: Lay perceptions and ethical consequences. *Journal of Experimental Psychology: Applied*, *23*(1), 100-113.

Jago, A. S., & Pfeffer, J. (2018). Organizations appear more unethical than individuals. *Journal of Business Ethics*, 1-17.

Jenkins, A. C., Dodell-Feder, D., Saxe, R., & Knobe, J. (2014). The neural bases of directed and spontaneous mental state attributions to group agents. *PLoS one, 9*(8), e105341. http://dx.doi.org/10.1371/journal.pone .0105341

Kashima, Y., Kashima, E., Chiu, C. Y., Farsides, T., Gelfand, M., Hong, Y. Y., . . . Yzerbyt, V. (2005). Culture, essentialism, and agency: Are individuals universally believed to be more real entities than groups? *European Journal of Social Psychology, 35,* 147–169.

Knobe, J., & Prinz, J. (2008). Intuitions about consciousness: Experimental studies. *Phenomenology and the Cognitive Sciences*, 7(1), 67-83.

Kuhn, M., & Johnson, K. (2013). Data pre-processing. In *Applied Predictive Modeling* (pp. 27-59). Springer.

Lee, S., & Feeley, T. H. (2016). The identifiable victim effect: A meta-analytic review. *Social Influence*, *11*(3), 199-215.

Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes*, *76*(2), 149-188.

Lindenberger, U., von Oertzen, T., Ghisletta, P., & Hertzog, C. (2011). Cross-sectional age variance extraction: What's change got to do with it? *Psychology and Aging*, *26*(1), 34-47. https://doi.org/10.1037/a0020525

Mason, D. P. (2013). Putting charity to the test: A case for field experiments on giving time and money in the nonprofit sector. *Nonprofit and Voluntary Sector Quarterly*, *42*(1), 193-202.

Meyers, L. S., & Gamst, G. Guarino (2006). *Applied multivariate research: Design and interpretation*. Sage.

Morewedge, C. K., Chandler, J. J., Smith, R., Schwarz, N., & Schooler, J. (2013). Lost in the crowd: Entitative group membership reduces mind attribution. *Consciousness and Cognition*, *22*(4), 1195-1205.

Nelson, T. E., Oxley, Z. M., & Clawson, R. A. (1997). Toward a psychology of framing effects. *Political Behavior*, *19*(3), 221-246.

Rai, T. S., & Diermeier, D. (2015). Corporations are cyborgs: Organizations elicit anger but not sympathy when they can think but cannot feel. *Organizational Behavior and Human Decision Processes*, *126*, 18-26.

Resnick, B. (2017, April 11). *This one small language tweak could change our views of refugees.* Retrieved from https://www.vox.com/science-and-health/2017/4/11/15220754/increase-empathy-strangers

Scheufele, D. A., & Iyengar, S. (2012). The state of framing research: A call for new directions. *The Oxford Handbook of Political Communication Theories.* Oxford University Press.

Slovic, P. (2007). ``If I look at the mass I will never act'': Psychic numbing and genocide. *Judgment and Decision Making*, *2*(2), 79–95.

Slovic, S., & Slovic, P. (2015). *Numbers and nerves: Information, emotion, and meaning in a world of data*. Oregon State University Press.

Small, D. A., Loewenstein, G., & Slovic, P. (2007). Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims. *Organizational Behavior and Human Decision Processes*, *102*(2), 143-153.

Smith, R. W., Faro, D., & Burson, K. A. (2013). More for the many: The influence of entitativity on charitable giving. *Journal of Consumer Research*, *39*(5), 961–976. https://doi.org/10.1086/666470

Smith, S. M., Roster, C. A., Golden, L. L., & Albaum, G. S. (2016). A multi-group analysis of online survey respondent data quality: Comparing a regular USA consumer panel to MTurk samples. *Journal of Business Research*, *69*(8), 3139-3148.

Tsakiris, M., Azevedo, R., De Beukelaer, S., Jones, I., & Safra, L. (2019). When the lens is too wide: The visual dehumanization of refugees and its political consequences. https://doi.org/10.31234/osf.io/y69sq

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*(4481), 453-458.

Västfjäll, D., Slovic, P., Mayorga, M., & Peters, E. (2014). Compassion fade: Affect and charity are greatest for a single child in need. *PLoS one*, *9*(6), e100115. https://doi.org/10.1371/journal.pone.0100115

Watts, D. J. (2017). Should social science be more solution-oriented? *Nature Human Behaviour*, *1*(1), 0015.

Waytz, A., & Young, L. (2012). The group-member mind trade-off: Attributing mind to groups versus group members. *Psychological Science*, *23*(1), 77-85.

Wegner, D. M. (1987). Transactive memory: A contemporary analysis of the group mind. In *Theories of group behavior* (pp. 185-208). Springer.

Wegner, D. M., & Gray, K. (2016). *The mind club: Who thinks, what feels, and why it matters*. Viking.

Whillans, A. V., & Dunn, E. W. (2018). Agentic appeals increase charitable giving in an affluent sample of donors. *PloS one*, *13*(12), e0208392.

Zhang, X., & Hellmueller, L. (2017). Visual framing of the European refugee crisis in Der Spiegel and CNN International: Global journalism in news photographs. *International Communication Gazette*, *79*(5), 483-510.