An experimental approach to comparing similarity- and guilt-based charitable appeals

Jordan van Rijn*, Bradford Barham, Reka Sundaram-Stukel

University of Wisconsin-Madison, Department of Agricultural and Applied Economics, 427 Lorch Street, Taylor Hall, Madison, WI 53706-1503, U.S.A.

ARTICLE INFO

ABSTRACT

Non-profit organizations face the challenge of eliciting pro-social behavior (e.g., donations) amidst an increasingly competitive landscape. This study uses a dictator game experiment with undergraduate students to test how a positive charitable appeal video that highlights similarities between donors and recipients affects donor behavior relative to a traditional guilt appeal video that highlights differences. We find that both feelings of guilt and similarity are positively associated with donation behavior; however, only the guilt-appeal treatment has a statistically significant positive effect on donations relative to the control. Yet, we cannot reject the null hypothesis of equal donations between similarity- and guilt-based treatments. We also find major gender differences in pro-social behavior: average male donations in the control were 40% higher than female donations; whereas, this outcome is almost completely reversed in the guilt appeal treatment, where females donated over twice as much as males. In other words, guilt appeals appear to induce women's pro-social behavior but have the opposite effect on men. This difference may be partially explained by males' aversion to feelings of manipulation, which seemed to discourage their donations but had no impact on female donations.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

Are charitable appeals that exploit feelings of guilt an effective fundraising strategy in the increasingly competitive non-profit sector (Aldashev and Verdier, 2010)? How do they compare with positive appeals that emphasize similarities between donors and potential aid recipients? What emotions are triggered by each type of appeal, and how do these feelings predict donation behavior? This study uses a dictator game (DG) experiment with undergraduate students to attempt to answer these questions.

Students were randomly assigned to view a "guilt-appeal" charitable video, a similarity-based charitable appeal video and a "no-emotion" control, and then asked to donate a portion of the $20 they received for participating in the project to the respective charitable organization, with all donations dedicated to the same development effort: clean water in Africa. We find that both feelings of similarity and guilt are positively associated with donation behavior; however, only the guilt-appeal treatment had a statistically significant effect on donations relative to the control (with no significant differences between treatments). Furthermore, large differences were evident between males and females, with male students donating significantly more on average in the control ($6.50 versus $3.91) and females donating over twice as much as males in the guilt-appeal treatment ($7.96 versus $3.41).

In recent decades, social scientists have attempted to explain why people help others (i.e., engage in "pro-social" behavior). Some refer to this desire to help others as "altruistic capital" (Ashraf, 2013), and it is manifested in behaviors such as donations, volunteering, sharing, cooperating, and working in pro-socially minded organizations, such as non-profit organizations (Brief and Motowidlo, 1986; Ashraf et al., 2014). In the charitable giving context, explanations for pro-social behavior are manifold: James Andreoni (1989, 1990) proposed the "warm-glow" hypothesis that one receives utility simply from the act of giving without concern for the welfare of others. Although evidence of warm-glow is present in many studies (Palfrey and Prisbrey, 1997; Charness and Rabin, 2002; Imas, 2014), so is evidence for altruism that goes beyond the mere personal interest of giving and values the increased utility of the recipient (Bolton and Katok, 1998; Eckel et al., 2005). Based on an extensive literature review of over 500 articles, sociologists Bekkers and Wiepking (2010) create a framework with eight mechanisms that appear as the critical forces behind charitable giving: awareness of need, solicitation, costs and benefits, altruism, reputation, psychological benefits, values and efficacy. While our study contains some variation in the awareness of need across treatments, the primary focus is on the psychological benefits of

* Corresponding author.
E-mail addresses: vanrijn@wisc.edu (J. van Rijn), bradford.barham@wisc.edu (B. Barham), Reka.SundaramStukel@dhs.wisconsin.gov (R. Sundaram-Stukel).

giving, which Bekkers and Wiepking describe as "an almost automatic emotional response, producing a positive mood, alleviating feelings of guilt, reducing aversive arousal, satisfying a desire to show gratitude, or to be a morally just person" (p. 15).

Evoking guilt is one of the most commonly used strategies for motivating donations (Huhmann and Brotherton, 1997). Numerous studies demonstrate that emotional message appeals can use guilt to motivate both purchasing behavior (Coulter and Pinto, 1995; Dahl et al., 2003; Chun-Tuan, 2011) as well as pro-social behavior (Basil et al., 2008; Renner et al., 2013). For example, one recent experimental study tests whether story-telling by non-profits can create negative emotions, which can then be converted into positive emotions through the opportunity to help a person in need (Merchant et al., 2010). The authors find that negative emotions can indeed be overcome by offering a donation. Nonetheless, other studies show that high levels of guilt can also create an opposite effect (Coulter and Pinto, 1995; Brennan and Binney, 2010), as can a perceived manipulative intent on the part of the advertiser (Cotte et al., 2005). In fact, there is evidence that potential donors — especially youth — develop an "immunity" to charitable appeals as they become increasingly common and predictable (Dalton et al., 2008; Wiepking, 2008).

Feelings guilt can stem from an awareness of extreme differences in well-being, and a sense of responsibility to help those less fortunate (Burnett and Lunsford, 1994; Hoffman, 1982; Ruth and Faber, 1988). Thus, in order to create the moral context in which one feels inclined to give, guilt appeals necessarily focus on the differences between donors and potential donation recipients (Brañas-Garza, 2006; Aguiar et al., 2008). This may take the form of emphasizing the extreme poverty of the recipient, poor-health, lack of education, or other disparities relative to the prospective donor. In the economics literature, experiments have confirmed that participants give in order to reduce perceived inequalities (this is commonly known as "inequity aversion" or "inequality aversion") (Pelligra and Stanca, 2013). However, recently, several non-profit organizations are finding success with fundraising strategies that focus more on the *similarities* between donors and recipients instead of the differences and inequalities.

One example is Mama Hope, a US-based non-profit organization that fundraises for development projects by utilizing videos where Africans share—in a joyful and humorous manner—everyday things they enjoy in life, such as their favorite sport or movie (Sutter, 2013).[1] The focus on seemingly trivial yet common interests makes the Africans easy to identify with. One Mama Hope video shows Africans dancing and singing alongside people from around the world (ibid.). Their videos not only focus on feelings and interests that potential donors can easily relate to—and develop feelings of affinity or similarity to—but they also eschew information regarding the poor state of the donation recipients and do not directly exploit negative feelings of shame or guilt. Thus, the Mama Hope videos represent a "similarity-based" charitable appeal, an alternative fundraising strategy to the traditional guilt-based appeal.

Founded in 2006, Mama Hope has grown tremendously since its inauguration: in addition to completing 34 projects in 4 countries that serve over 150,000 people, the organization has garnered significant media attention from, among others, the New York Times, Washington Post, Al Jazeera International, and MSNBC. Their video "African Men. Hollywood Stereotypes." —which was featured on CNN International by Cristiane Amanpour—had received over 1.5 million views on YouTube as of March 7, 2017, one of the highest counts for a non-profit organization working in Africa.

Significant research in the areas of social and evolutionary psychology supports the theory that emphasizing similarities elicits pro-social behavior (Batson et al., 1981; Park and Schaeler, 2005; Bekkers, 2010). The tendency to like and favor others that are similar to one's self is sometimes referred to as the "similarity principle" (Bekkers, 2010; Wiepking and Bekkers, 2012). In the economics literature, Rotemberg (2009, 2014) incorporates similarity theories into models of utility maximization and finds that they help explain altruism in charitable giving and voting behavior. Another study indicates that compassion is positively associated with perceived self-other similarity, particularly to weak or vulnerable others (Oveis et al., 2010). Other empirical studies provide support for pro-social behavior occurring when the potential aid recipient is viewed as similar in terms of attire (Hensley, 1981; Nelson, 2009), name (Gueguen, 2003; Gueguen, Pichot and Le Dreff, 2005; Bekkers, 2010), cultural background (Stürmer et al., 2006), race (Gaertner and Bickman, 1971; Bickman and Kamzam, 1973; List and Price, 2009), social status (Goodman and Gareis, 1993; Keasey and Keasey, 1971), political attitudes (Suedfeld et al., 1972; Karabenick et al., 1975), spoken language (Nelson, 2009) and even soccer team affiliation (ibid.). Nonetheless, as far as we are aware, our study is the first laboratory experiment to compare the effectiveness of similarity- and guilt-based fundraising appeals.

2. Material and methods

2.1. Experimental research design

The research experiment was conducted with University of Wisconsin-Madison undergraduate students and utilized a dictator game (DG) experimental design, with students as the "dictators" and the "recipient" being one of two charitable organizations. Similar to Etang et al. (2012) and Fong and Luttmer (2011), dictators received a minimal but not insignificant sum of money ($20) to complete a survey, watch short videos of charitable appeals and then decide whether to donate none, some or all of the funds to the charitable organization presented (they were allowed to keep any funds not donated). The funds were provided in the context of earned income in exchange for participating in the study, which included a pre- and post-survey. Framing the funds as "earned income" more closely mimics a real-world situation as previous research shows that experimental participants are less generous with earned money than with windfall gains (Cherry et al., 2002; Cherry and Shogren, 2008).

The experiment included a positive charitable appeal using a Mama Hope video that highlights similarities among donors and recipients, as well as a more traditional guilt-based appeal that shares basic information regarding the (poor) well-being of the potential donation recipients. The guilt appeal video was an edited version of an appeal created by World Vision, an Evangelical Christian humanitarian aid and development organization founded in 1950 that works in over 90 countries and had revenues of over $1 billion in 2014, making it #11 on the 2015 Forbes Largest U.S. Charities list.[2] The World Vision video was chosen for the experiment as it includes all of the elements that we consider to define a "guilt-appeal." These include: story-telling (Merchant et al., 2010), a focus on differences (Brañas-Garza, 2006), presentation of an explicit need (Pelligra and Stanca, 2013; Aguiar et al., 2008; Brañas-Garza et al., 2006) and the stimulation of negative emotions that may be overcome by a donation (Merchant et al., 2010; Basil et al., 2008). The Mama Hope video includes none of these elements and instead focuses on similarities and positive emotions. A more elaborate description of the two videos is available in Appendix F.

---

[1] Mama Hope's videos can be viewed at http://www.mamahope.org/videos/

[2] http://www.forbes.com/companies/world-vision/

Despite the fact that both organizations raise funds for clean water projects in Africa, their approaches to fundraising are distinct. Our study aims to determine which feelings each approach elicits, and how these feelings translate into donations. Furthermore, to compare both Mama Hope (MH) and World Vision (WV) videos against a baseline, we include a "neutral" control group where participants view a series of slides including background music and narration. The control video was created with the intent of sharing information on clean water issues in Africa in an even spoken manner without explicit attempts to elicit either feelings of similarity or guilt.

To control for the use of donations, all of the videos are followed by a brief series of identical slides with pictures and text that motivate the need for clean water and describe how the funds will be used to secure clean water in Africa. Only the name of the organization varies ("Mama Hope" versus "World Vision", depending on the treatment). In the control group, the "appeal" is exactly the same as in the two treatments except that participants were randomly divided into one of two groups based on the appeal using the name "Mama Hope" or "World Vision" as the donation recipient. The only difference between the control videos is the name of the charitable organization, which serves to control for any previous bias based on more familiarity or experience with one organization or the other. Also, because the appeal is identical in all groups (except for the organization name), the design controls for bias towards a particular region or development project. With respect to the Bekkers and Wiepking framework, this experimental design helps control for the typical effects of solicitation, awareness of need, costs and benefits, and efficacy, while varying the potential psychological effects. Nonetheless, the WV video does provide the viewer with more statistics and direct observations of the ill-effects of lack of access to clean water on African children. So, in our theory and empirical results, we are attentive to the potential for the WV video to provide the observer with a greater awareness of need. Finally, after the experiment all donated funds were sent to the respective organizations for the intended use.[3]

Participants were randomly divided into 4 groups:

- *MH Treatment*: Participants viewed the Mama Hope video followed by the appeal
- *WV Treatment*: Participants viewed the World Vision video followed by the appeal
- *MH Control*: Participants viewed the neutral presentation with the appeal using name of Mama Hope
- *WV Control*: Participants viewed the neutral presentation with the appeal using name of World Vision

The study was conducted at UW-Madison's Behavioral Research Insights through Experiments (BRITE) Lab from November 2 - 6, 2015. The BRITE Lab assisted in recruiting undergraduate students, who totaled 307 participants with 103 in MH Treatment, 104 in WV Treatment, 50 in MH Control and 50 in WV Control. This range of sample sizes is similar to or larger than other comparable DG experiments, such as Etang et al. (2012), and Brañas-Garza (2006, 2007). The goal was to create roughly equal numbers of participants in each treatment group and the combined control group (MH Control plus WV Control). As participants entered the lab for each experiment, they were randomly assigned to different computers that were pre-programmed with one of the four videos.

During the experiment, students completed a short survey on demographic and background information. The video then appeared and ran for about three minutes followed by the appeal, which ran for another minute or so. Although the two treatment videos are comparable in length, the control videos are slightly shorter than the treatment videos (by about a minute). After deciding how much to donate, participants completed a survey with follow-up questions related to motivations for giving, feelings of similarity, inspiration and guilt, perceptions of manipulation, trust in the organizations, and other feelings and motivations (see Appendices B - D), as in Carpenter, Connolly and Myers (2008), Etang et al. (2012), and Fong et al. (2011).

2.2. Theory and hypotheses

Previous DG studies demonstrate that student participants tend to give 10% to 15% of the total amount received (Camerer, 2003). Yet, in variations of DGs where there are clear recipients that are identified as needy, donations are often significantly larger. Students then give anywhere from 31% to 86% of the total (Eckel and Grossman, 1996; Small and Lowenstein, 2003; Carpenter et al., 2008; Aguiar et al., 2008; Fong et al. (2011)). Similar to our design, these experiments have identifiable uses of funds, such as support for victims of Hurricane Katrina (Fong et al., 2011) and medicine purchases for people in Africa, Asia and South America (Aguiar et al., 2008).

Given past experiments, it is reasonable to expect that participants in the WV Treatment group will be inspired by the potential to improve the well-being of the intended donation recipients, particularly considering the increased awareness of need from viewing the video. We also expect them to experience more feelings of guilt, since the video focuses on the poor well-being of African children. There is also more potential for donor fatigue in the WV Treatment—since guilt-based appeals are particularly prevalent—possibly discouraging donations among some participants who view the video as manipulative, or who are simply no longer inspired by traditional charitable appeals (Dalton et al., 2008; Cotte et al., 2005; Wiepking, 2008). We do not expect donor fatigue in the MH Treatment, since it is distinct from most appeals by being uplifting, humorous and joyful. Furthermore, the MH video is likely to generate more feelings of similarity, since it simply presents a young boy enthusiastically relating the details of his favorite movie—an activity that most Western donors can easily identify with—while de-emphasizing any notion of poverty or differences. Therefore, we hypothesize that students are motivated by both similarity- and guilt-based appeals, and will give significantly larger amounts to both MH and WV treatments relative to the neutral control groups. However, we also hypothesize that overall giving will be greater in the MH treatment, since these donors will not be discouraged by donor fatigue.

In the Bekkers and Wiepking, (2010) framework, the WV treatment generates more awareness of need, and both treatments create psychological benefits: WV by allowing the participants to overcome feelings of guilt by offering a donation, and MH by creating positive moods, which are generally associated with higher donations. Nonetheless, the potential psychological benefits in the WV treatment may be reduced by feelings of manipulation and donor fatigue. We control for the mechanisms of solicitation, costs and benefits, and efficacy by creating similar appeals after each video, and by sending donations to the same development initiative in Africa (clean water). In other words, the solicitation for donations is the same in each group, and the benefits and efficacy of the donation is also the same. We also control for reputation by creating an anonymous experiment, so donors should not expect any praise or criticism for their donation. Finally, we control for values and altruism by randomly assigning students to the var-

---

[3] The four edited videos can be viewed at the following links: *MH Treatment:* https://www.youtube.com/watch?v=rN17ow0ckIA *WV Treatment:* https://www.youtube.com/watch?v=Web4fyohCz8 *MH Control:* https://www.youtube.com/watch?v=Rg1phoX4tY8 *WV Control:* https://www.youtube.com/watch?v=vS_0orsip-o The original videos may be viewed at: Mama Hope: https://www.youtube.com/watch?v=pLix4QPL3tY World Vision: https://www.youtube.com/watch?v=bg1iLMnKD-4

ious treatment and control groups. By random assignment, we do not expect students in one group to have different prosocial values than students in another group, on average, or to be particularly more altruistic.

We divide our hypotheses and analysis into two main categories: "Design" hypotheses relate to whether the videos elicited the theorized feelings and emotions, and accurately reflect guilt- and similarity-based appeals; and "Behavioral" hypotheses compare the actual outcomes (donations) between treatment groups, and between the treatment groups and the control groups.

Design Hypotheses:

DH1: Participants in MH Treatment will experience more feelings of similarity relative to WV Treatment.

DH2: Participants in WV Treatment will experience more feelings of guilt relative to MH Treatment and the control groups.

DH3: Participants in WV Treatment will feel that the video is more manipulative than participants in MH Treatment and the control groups.

DH4: Participants in the WV Treatment will feel that the video is more inspiring than participants in the MH Treatment and the control groups.

Behavioral Hypotheses:

BH1: Participants in MH and WV Treatments will donate significantly more funds than participants in the control groups.

BH2: Participants in MH Treatment will donate significantly more funds than participants in WV Treatment.

3. Results and discussion

Table A.1 demonstrates that the randomization was successful in creating comparable treatment and control groups. There are four sets of comparisons: MH Treatment vs. WV Treatment, MH Treatment vs. MH Control, WV Treatment vs. WV Control, and MH Control vs. WV Control. In total, we compare 36 differences in means and find only two statistically significant differences with no more than one per set of comparisons. This is roughly what would occur given random chance at the 95% confidence level. The two statistically significant differences are for the variables *time outside of U.S.* and *student loan debt*, both of which were originally included as control variables but later removed as they had no bearing on the main results.

3.1. Design results

The design survey question most relevant to our analysis is: "To what extent did you feel the following after watching the video?" This question was asked for each of the following feelings: *happy, entertained, inspired, manipulated, sad, guilty* and *connected*. (Possible responses are "not at all," "a little," "somewhat," "quite a bit," and "a great deal.") The order of these choices were randomized in the survey to avoid priming and order bias.

To measure feelings of similarity, we asked participants to agree or disagree with the following statements (possible responses were "strongly agree," "agree," "disagree," and "strongly disagree"). (The name of the corresponding variable is in parentheses).

- "The children in the video remind me of my childhood." (*Childhood 1*)
- "The children in the video remind me of children where I grew up." (*Childhood 2*)
- "I can identify with the children in the video." (*Identify*)
- "I like how the children in the video were portrayed." (*Portrayal*)

These variables are highly correlated with each other (with correlation coefficients of 0.58 and higher), except for the last one—
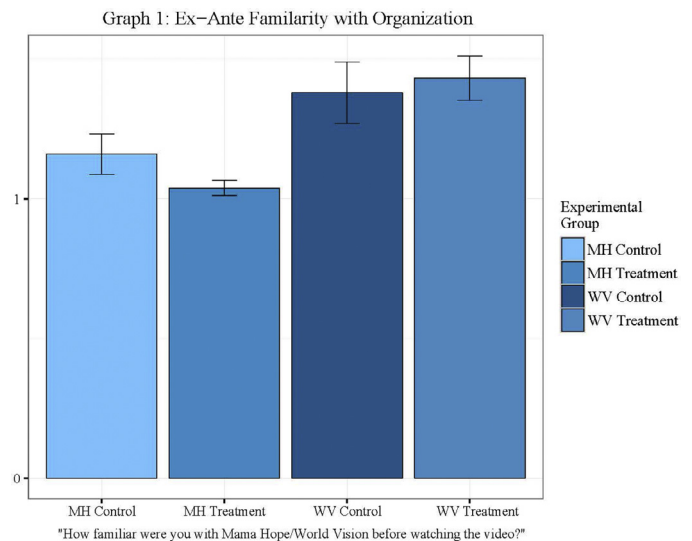

Graph 1. Ex-ante familarity with organization.

portrayal—which has correlation coefficients of less than 0.3 with the other three variables. Admittedly, *portrayal* gets at a slightly different concept than the similarity-principle, and may simply be a better measure of how much participants liked the children in the video and felt that they were portrayed in a positive way. Therefore, although we include *portrayal* in the following analysis, the more accurate measures of *similarity* are the first three variables.

Since WV is a larger, more established and better known organization relative to MH, any analysis we conduct must take into account these important differences. For example, although participants are randomized into the four treatment and control groups, students that take part in the experiment may have more previous experience with WV than MH. If this previous knowledge influences their feelings towards the organization or the amount donated, it would bias our results. In order to control for this, we ask several questions about whether participants had viewed the videos previously, and how familiar they were with the organization before watching the video. In general, participants were not very familiar with either organization before participating in the experiment. Responses range from 1 ("not at all familiar") to 5 ("extremely familiar"), and no group had a mean response of greater than 1.43. However, participants were slightly more familiar with WV than MH, as demonstrated in Graph 1.[4]

Furthermore, these differences in previous knowledge appear to influence feelings towards the treatments, as we can see by comparing the controls. Graph 2 compares means between the four groups. Since we are comparing the groups based on categorical variables, we perform Pearson's chi-squared tests. Several statistically significant differences occur between controls: MH Control participants were more inspired than WV Control participants, yet they also felt more manipulated. This provides some support for donor fatigue: if participants already knew about WV and its mission, they might not be as influenced viewing a presentation about the organization since it is not new information. Indeed, WV Control feelings are lower than MH Control in all three categories presented, although there were no statistically significant differ-

---

[4] Note that throughout the paper confidence intervals in the graphs are based on normal distributions; however, we use various tests for our specific p-values depending on whether the data is normally distributed, ordinal or categorical. In general, we use Pearson's chi-squared tests for comparing categorical variables and Mann–Whitney–Wilcoxon rank-sum tests for non-parametric tests.

Graph 2: Elicited Emotions by Experimental Group
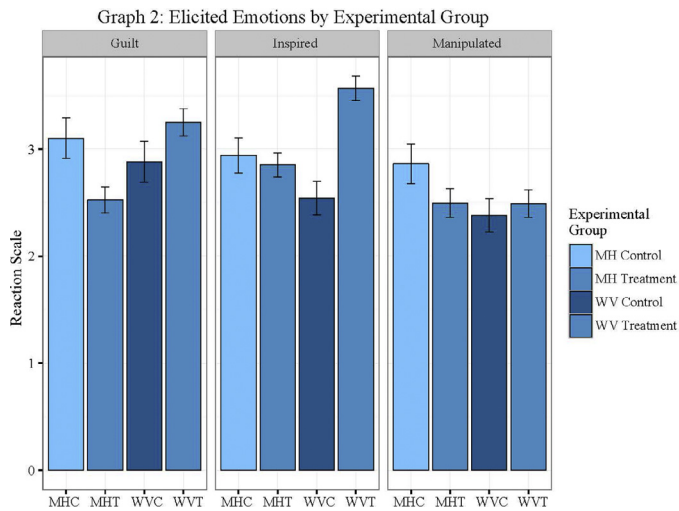
Graph 2. Elicited emotions by experimental group.

Graph 3: Elicited Feelings of Similarity
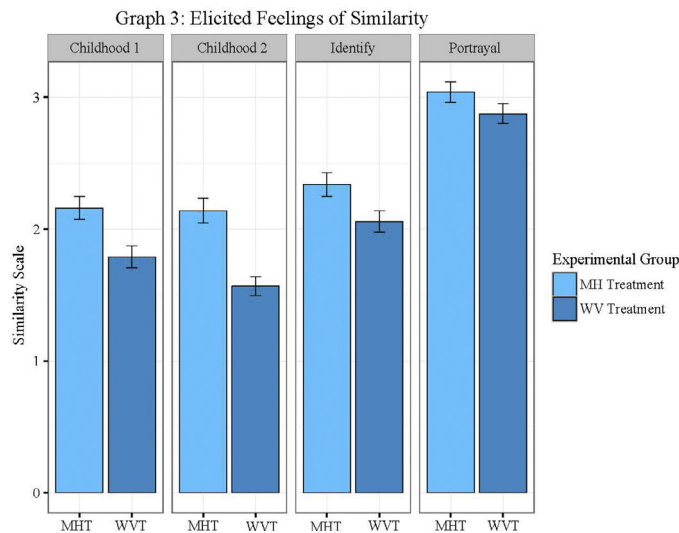
Graph 3. Elicited feelings of similarity.

ences in *guilt*. As explained in more detail below, our regression analysis controls for these differences in previous knowledge by using a difference-in-differences (DID) approach and adding a control variable that represents participants' familiarity with the organization before the experiment. For now, we continue to evaluate the differences in groups' responses with the understanding that there may be some bias from previous knowledge which we control for in subsequent analysis.

Comparing the two treatments, as expected, WV participants experienced more feelings of guilt and inspiration relative to MH; however, there were no statistically significant differences in perceptions of *manipulation* between the two groups. This initial analysis provides support for hypotheses DH2 and DH4 related to guilt and inspiration, but not DH3 related to manipulation.

Regarding the *similarity* variables, since the treatments include videos with children while the controls only include a presentation with images, music and narration, we could only confidently ask the *similarity* questions to participants who viewed the videos (i.e., participants in the two treatments). Therefore, much of the analysis of these variables is a simple comparison of treatments and does not include observations from the controls. As we see in Graph 3, MH Treatment participants experienced more feelings of *similarity* than WV participants in all four categories. These differ-

ences have p-values of 0.101 or lower in the first three categories, and 0.401 for *portrayal*, which is not surprising given our intuition that *portrayal* may be measuring something slightly different that the 'similarity principle'. The results provide initial indications that the MH video elicited more feelings of *similarity* relative to WV, supporting Hypothesis DH1.

Turning to the regression analysis, we control for *female, foreign, international news* (frequency of following international news), *charity* (frequency of charitable giving), *religious* (frequency of attendance of religious events and activities), *mother's* and *father's education*, and *familiarity*. The last variable reflects the extent to which participants were familiar with MH or WV before the experiment, and attempts to control for the formerly mentioned differences in this previous knowledge. *Age* and *student loan debt* were initially included as controls but since *age* has little variation and neither variable is significant or influences the results, they were subsequently removed from the regressions.

The regressions are all ordinary least squares (OLS) with heteroskedastic-robust (White) standard errors (listed in parentheses). Throughout the paper, the main dependent variables are either responses to questions with Likert scales ranging from 1 ("lowest value") to 5 ("highest value"), binary (0 or 1) variables for whether a participant donated (*donated*), or a dollar amount ranging from $0 to $20 which represents the amount donated (*donation amount*). As a robustness check, all of the regressions in the paper are also implemented using non-linear methods (ordered probit, probit and logit regressions). Since the results are almost identical and do not alter the main findings, we omit the non-linear regression tables for concision.

Our initial econometric approach is to simply separate the data into individuals who experienced the MH treatment or MH control ("MH Participants"), and those that experienced the WV treatment or WV control ("WV Participants"). We then run regressions on each subgroup for our variables of interest, allowing us to directly compare MH treatment participants with MH control participants, and WV treatment participants with WV control participants. By this method, we can determine whether the treatments are associated with higher donations and various motivations while holding the organization constant.

However, this approach does not directly compare MH and WV treatments, nor does it control for participants' previous knowledge of the organizations. Therefore, in order to obtain a clean treatment effect between MH and WV, while controlling for initial differences between the controls, we also use a difference-in-differences (DID) approach throughout the paper. That is, we estimate:

$$D_i = \mu + \gamma X_i + \theta F_i + \delta MH_i + \beta T_i + \rho (MH_i \times T_i) + \varepsilon_i \qquad (1)$$

where D_i is the dependent variable representing Likert scales of feelings of participant i, a binary variable for whether participants donated a positive amount (linear probability), or a dollar amount ($0 - $20); X_i is a vector of demographic and other control variables; F_i represents the *familiarity* control variable; MH_i is a dummy variable for Mama Hope; and T_i is a dummy variable for the Treatment. The treatment effect (ρ) is the coefficient on *MH Treatment* in the tables and represents the difference between the treatments minus the difference between the controls, thereby controlling for any initial differences in participants' previous knowledge of MH or WV. In other words, it represents: (*MH Treatment – WV Treatment*) – (*MH Control – WV Control*). The following table summarizes the DID specification and how to interpret the coefficients:

Table 1
Design hypotheses: estimated treatment effects on feelings.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Difference-in-differences		MH participants		WV participants		MH & WV treatment participants		
	Inspired	*Guilt*	*Inspired*	*Guilt*	*Inspired*	*Guilt*	*Childhood*	*Identify*	*Portrayal*
MH control	0.389*	0.314							
	(0.232)	(0.243)							
Treatment	1.071***	0.416*							
	(0.191)	(0.218)							
MH treatment	-0.744***	-0.747***	0.000	-0.597***			0.406***	0.243*	0.195*
	(0.157)	(0.187)	(0.203)	(0.209)			(0.122)	(0.129)	(0.106)
WV treatment					1.072***	0.411*			
					(0.190)	(0.220)			
Female	0.143	0.456***	-0.030	0.563***	0.354*	0.366	-0.049	-0.061	0.134
	(0.138)	(0.154)	(0.191)	(0.204)	(0.196)	(0.228)	(0.126)	(0.128)	(0.113)
Constant	1.334***	2.805***	1.456**	2.235***	1.475**	3.332***	1.444***	1.602***	2.582***
	(0.437)	(0.493)	(0.578)	(0.671)	(0.578)	(0.669)	(0.437)	(0.422)	(0.370)
Observations	305	305	151	151	154	154	205	205	205
R-squared	0.161	0.146	0.051	0.208	0.274	0.089	0.091	0.057	0.050

Notes. Robust standard errors in parentheses. Significance levels: *** p< 0.01, ** p< 0.05, * p< 0.1. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*

Coefficient	Statistical Equation	Interpretation
μ	$= E[D_i\|MH = 0, T = 0]$	WVC
δ	$= E[D_i\|MH = 1, T = 0] - E[D_i\|MH = 0, T = 0]$	MHC – WVC
β	$= E[D_i\|MH = 0, T = 1] - E[D_i\|MH = 0, T = 0]$	WVT – WVC
ρ	$= (E[D_i\|MH = 1, T = 1] - E[D_i\|MH = 0, T = 1])$	(MHT – WVT) – (MHC – WVC)
	$- (E[D_i\|MH = 1, T = 0] - E[D_i\|MH = 0, T = 0])$	

Table 1 shows the results of the initial set of regressions with *inspired* and *guilt* as the main dependent variables in regressions 1 – 6. (We also conduct a similar analysis with *manipulated* as the dependent variable but—as implied above—find no differences between treatment and control groups, or between treatments, and we therefore omit the results for concision.) Regressions 7 – 9 explore the effect of the experiment on feelings of similarity and include *childhood, identify* and *portrayal* as the main dependent variables. Since *childhood 1* and *childhood 2* are highly correlated and provide similar results, we only use *childhood 1* in our regressions and name it simply "*childhood.*" Regressions 3 – 4 compare only MH Treatment participants with MH Control participants, and Regressions 5 – 6 do the same with WV participants. These latter regressions are clean comparisons of the effect of the experiment on only those participants that were asked to donate to one particular organization. Thus, they isolate the individual WV Treatment and MH Treatment effects. Finally, Regressions 7 – 9 directly compare MH Treatment and WV Treatment groups (without including the controls) in order to analyze the impact of the program on feelings of similarity. As mentioned, in these latter regressions we only compare the treatments as we do not have *similarity* survey responses for the controls. Therefore, we cannot use the DID approach, but we still control for previous knowledge of the organizations by including the *familiarity* variable.

The coefficient estimates on *MH Treatment* in the DID regressions (1 – 2) in Table 1 confirm that MH Treatment participants felt significantly less *guilt* and less *inspired* relative to WV Treatment participants. Furthermore, regressions 3 – 6 demonstrate that MH Treatment participants felt less *guilt* relative to MH Control participants, and WV Treatment participants were both more *inspired* and felt more *guilt* than WV Control participants. These findings provide further support for DH2 and DH4. Finally, regressions 7 – 9 show that MH Treatment participants felt significantly more feelings of *similarity* relative to WV Treatment on all three measures, providing support for DH1. Nonetheless, one also notices some important heterogeneity: females felt consistently higher levels of guilt relative to males. We further explore this topic later in the paper.
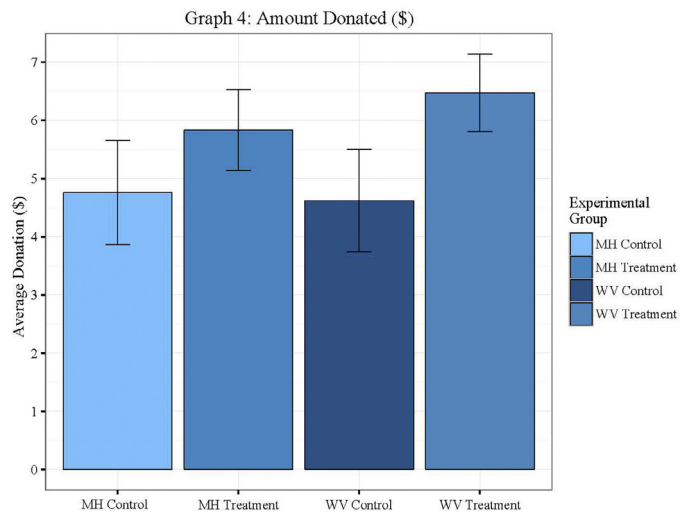
Graph 4. Amount donated ($).

This initial examination of the experimental design confirms hypotheses DH1 on similarity, DH2 on guilt and DH4 on inspiration, but not DH3 on manipulation. We now turn to an analysis of donation behavior.

3.2. Behavioral results

As Graph 4 demonstrates, the mean donation was highest among the WV Treatment participants at $6.47 followed by MH Treatment at $5.78, and the two controls at $4.76 (MH) and $4.62 (WV). This represents donation sizes of roughly 23% to 32% of the earned income from the experiment, which is comparable to other similar studies (Eckel and Grossman, 1996; Small and Lowenstein, 2003; Carpenter et al., 2008; Aguiar et al., 2008; Fong et al., 2011; Camerer, 2003). As there is only a negligible and insignificant difference between MH Control and WV Control donation amounts, we combine the two control groups and compare this "Combined Control" with MH and WV Treatments in Graph 5. Here we see that WV elicited significantly more donations than the Combined Control, but there were no statistically significant differences between the treatments, or between MH Treatment and the Combined Control.[5] Therefore, we can only confirm BH1 for the WV

---

[5] We reject the null hypothesis of normality for *donations* and *donated amount*. (See Graph A.1 for the distribution of donations). Therefore, we use non-parametric

Table 2
Behavioral outcomes: estimated treatment effects on donations.

	(1) Difference-in-difference		(3) MH participants		(5) WV participants	
	Don. amount	Donated	Don. amount	Donated	Don. amount	Donated
MH control	0.180	0.054				
	(1.314)	(0.103)				
Treatment	2.076*	0.151*				
	(1.102)	(0.085)				
MH treatment	-0.583	-0.010	1.343	0.090		
	(0.965)	(0.068)	(1.149)	(0.088)		
WV treatment					2.274**	0.159*
					(1.135)	(0.086)
Female	1.003	0.134**	0.946	0.159*	1.154	0.114
	(0.844)	(0.062)	(1.209)	(0.088)	(1.188)	(0.090)
Constant	0.756	0.120	2.883	0.408	4.328	0.079
	(2.626)	(0.198)	(3.345)	(0.270)	(3.497)	(0.257)
Observations	305	305	151	151	154	154
R-squared	0.057	0.045	0.024	0.048	0.129	0.075

Notes. Robust standard errors in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education*.
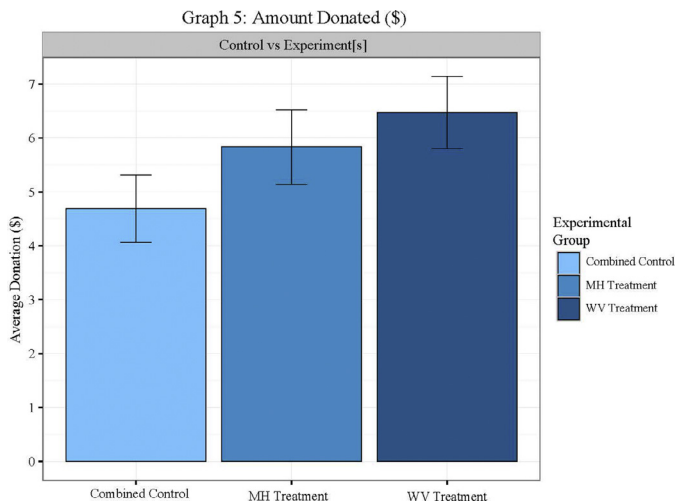
Graph 5. Amount donated ($).

Treatment, and it appears that WV elicited more donations relative to the controls than MH, contradicting BH2.

As before, we use regression analysis with the previously mentioned control variables to further analyze donation behavior. Table 2 shows the initial regression results. We use various methods to attempt to isolate the treatment effects: difference-in-differences (DID) regressions using only MH participants, and regressions using only WV participants. Regressions 1 – 2 display the DID results and show no difference in *donation amount* or the probability of giving between MH and WV Treatments. Regressions 1 – 2 and 5 – 6 demonstrate a positive effect of the experiment on WV Treatment participants; these students gave, on average a little over $2 more than WV Control participants, and were approximately 15 to 16 percentage points more likely to donate. The MH Treatment effects in regressions 3 – 4 are not significant, but the coefficients are in the expected direction (positive). Nonetheless, they are both less significant and smaller than the WV Treatment effects.

These results again confirm the positive effect of the WV Treatment on donations, but not the MH Treatment. In fact, it appears that WV Treatment elicited, on average, higher donations and a larger probability of donating relative to the controls than the MH

Treatment (although the differences between MH and WV treatments are not statistically significant). Furthermore, there continue to be interesting differences between males and females: the coefficients on *female* are positive in all six regressions, and statistically significant in two.

3.3. Motivations for donating

Why did WV Treatment participants donate more than any other group? And which feelings are associated with the frequency and likelihood of giving? We first explore these questions by comparing responses of the reasons participants gave for donating between treatment groups, and between the treatment groups and the controls (Table A.2). Since this analysis only includes donors (participants who gave some positive amount), the sample sizes are significantly smaller; therefore, we combine control groups into the Combined Control and maintain caution in our interpretation of the results.

Among the donors, WV Treatment participants felt they could trust the organization more than MH Treatment participants. When comparing MH Treatment participants with Combined Control participants, the MH Treatment group agreed significantly more with the statement: "The people in the video appear to be just like me and I sometimes need help." This is similarly true when comparing WV Treatment and Combined Control participants. Therefore, we have some initial sense that *similarity* positively influences both MH and WV donors. However, WV Treatment participants felt more connected with the people in the video, and that they could trust the organization more than the Combined Control, an outcome that we do not find when comparing MH Treatment and Combined Control participants. However, as mentioned, since this analysis only includes participants that donated some positive amount, there is selection bias and we cannot be too confident in these simple comparisons.[6]

We further explore these questions in the regressions presented in Table 3. These regressions separate MH and WV participants and add the explanatory variables *guilt, similarity* and *portrayal* to the previous controls in order to attempt to explain the motivations for participants' donations. Note that many explanatory variables were attempted in this analysis—including *happy, entertained, manipulated, inspired, guilt, childhood, identify* and *portrayal*—but not all were included in the final regressions in Table 3. This is be-

---

tests (Mann–Whitney–Wilcoxon rank-sum test) to compare donations between each group.

[6] For a detailed discussion of such biases, see Angrist and Pischke's *Mostly Harmless Econometrics* chapter "Good Cop, Bad COP: Conditional-on-positive effects."

Table 3
Estimated influence of similarity on donations by treatment group.

	(1) MH participants	(2)	(3) WV participants	(4)
	Don. amount	Donated	Don. amount	Donated
Female	1.574	0.138	3.422***	0.156
	(1.449)	(0.102)	(1.053)	(0.100)
Guilt	1.112*	0.046	0.735	0.052
	(0.665)	(0.044)	(0.557)	(0.034)
Similarity	1.744**	0.139**	1.017	0.088
	(0.773)	(0.059)	(0.890)	(0.066)
Portrayal	-0.561	0.007	1.417*	0.125*
	(1.189)	(0.077)	(0.742)	(0.064)
Constant	-2.703	-0.406	-14.50***	-0.657**
	(5.363)	(0.333)	(4.040)	(0.319)
Observations	101	101	104	104
R-squared	0.132	0.157	0.258	0.173

Notes. Robust standard errors in parentheses. Significance levels: *** p< 0.01, ** p< 0.05, * p< 0.1. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education*.

cause many of the variables are highly correlated and created multicollinearity issues in efforts to examine a similarity effect. Furthermore, since the *similarity* variables are all highly correlated with each other—except for *portrayal*— we decided to simply use *identify* as our main *similarity* variable. This is indicated by the independent variable labeled "*similarity*" in the tables.

With this concise specification, a clear pattern emerges: *guilt* is positive in all four regressions as is *similarity*. This indicates that *guilt* and *similarity* are positively associated with giving for both MH and WV participants. However, *similarity* is significant in both MH regressions but not in the WV regressions, indicating that it is a more important determinant of donations for MH participants. Furthermore, *portrayal* is positive and significant for WV participants but negative or zero and not significant for MH participants. This may indicate that, as hypothesized, there is more heterogeneity in perception among viewers of guilt-appeals relative to other appeals. In other words, some may be discouraged by how the children are portrayed in the guilt-appeal and donate less (i.e., feel "donor fatigue"), while others may not be negatively affected by the guilt-appeal, feel empathy with the children, and donate more.

Finally, *female* continues to be positive in all regressions, and highly significant in Regression 3. This further points to important differences in donation behavior between males and females. We finish our analysis with a more in-depth exploration of this key source of heterogeneity.

3.4. Gender differences

Under many experimental conditions, women demonstrate more altruistic and socially oriented behavior relative to men (Eckel and Grossman, 1998; Andreoni and Vesterlund, 2001; Eckel and Grossman, 2008; Engel, 2011; Brañas-Garza et al., 2016). For example, two standard dictator game experiments by Bolton and Katon (1995) and Eckel and Grossman (1998) show that the average amounts given by females were greater than by males. Furthermore, Andreoni and Vesterlund (2001) implement a modified dictator game experiment in which dictators make allocation decisions for eight different choice sets, with a subject's payoff determined randomly from the decisions made. They find that women gave away significantly more than men, although women's donations varied little with the relative price of giving, while men's donations were more responsive. The authors conclude that men are more likely to be either perfectly selfish or perfectly selfless, whereas women tend to be "equalitarians" who prefer to share evenly (Eckel and Grossman, 1998; Andreoni and Vesterlund, 2001). Finally, in a more recent study that sheds light on gen-
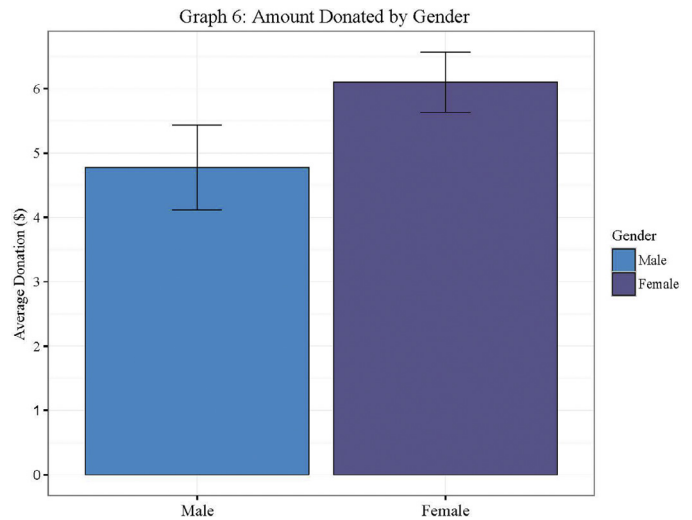
Graph 6. Amount donated by gender.
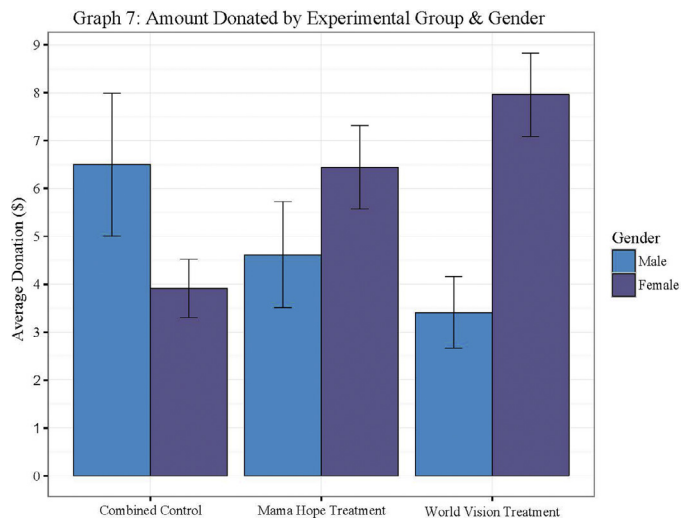
Graph 7. Amount donated by experimental group & gender.

der stereotypes, Brañas-Garza et al. (2016) use a dictator game to demonstrate that women are both more altruistic than men and are also expected to be more generous than men, although women are not quite as generous as people anticipate.

In general, experimental and survey studies tend to show that women have stronger pro-social values than men, including concern and responsibility for others (Beutel and Marini, 1995), religious values (De Vaus and McAllister, 1987; Miller and Hofman, 1995), and empathic concern (Davis, 1994; Einolf, 2011; Eisenberg et al., 1983; Verhaert and Van de Poel, 2011), which is generally defined as an other-oriented emotional response elicited by and congruent with the perceived welfare of someone in need (Batson, 2014). Some believe that empathic concern can be traced back to early primate evolution and developed simultaneously with parental care (Romero et al., 2010). If this is the case, it may be a particularly powerful influence in our study as the MH and WV videos prominently feature children, which may trigger maternal instincts.

Our findings support this hypothesis: females donated significantly more than males with average donations of $6.10 compared with $4.78 (p-value of 0.043). Furthermore, Graph 7 demonstrates how the treatments had the opposite effect on women compared with men. Females donated significantly less than males in the neutral Combined Control, but their donations were greater in MH and WV Treatments, with a much larger difference in WV Treat-

Table 4
Estimated treatment effects on general feelings by gender.

	(1)	(2)	(3)	(4)	(5)	(6)
	Males: difference-in-differences			Females: difference-in-differences		
	Inspired	*Guilt*	*Manipulated*	*Inspired*	*Guilt*	*Manipulated*
MH control	0.213	0.134	-0.495	0.438	0.426	-0.513*
	(0.392)	(0.396)	(0.447)	(0.291)	(0.292)	(0.277)
Treatment	0.785**	0.807**	-0.102	1.227***	0.224	0.100
	(0.315)	(0.366)	(0.464)	(0.236)	(0.270)	(0.241)
MH treatment	-0.175	-0.984***	0.623*	-1.051***	-0.608**	-0.507**
	(0.265)	(0.319)	(0.357)	(0.194)	(0.234)	(0.231)
Constant	1.272	2.360***	1.534	1.467***	3.414***	2.187***
	(0.795)	(0.858)	(1.027)	(0.544)	(0.618)	(0.574)
Observations	98	98	98	207	207	207
R-squared	0.148	0.189	0.105	0.195	0.128	0.101

Notes. Robust standard errors in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*

ment. On the other hand, males donated the most in the Combined Control, with fewer average donations in MH Treatment and even fewer in WV Treatment. In fact, although males donate, on average, 40% more than females in the Combined Control ($6.50 versus $3.91), in the WV Treatment female donations are over twice as large as male donations ($7.96 vs. $3.41)! In some sense, male donations appear to decrease the more emotionally engaging the presentation, whereas the opposite is true for women. The findings indicate that males and females have very different responses to charitable appeals, particularly guilt appeals. Therefore, combining both genders in the same regressions with only a control variable to distinguish them may attenuate the results. Hence, our subsequent analysis replicates most of the earlier estimation specifications while separating males and females.

As before, we perform a series of regressions with various emotions as the dependent variables but now we separate the sample by gender in order to test for gender differences. First, as in Table 1, we test whether the experiment generated various emotions. As before, the main treatment effect for MH relative to WV is represented by the coefficient on *MH Treatment.* One important gender difference is that, for males, the MH video elicited significantly higher feelings of similarity relative to the WV video; whereas, this difference does not exist for females (see Table A.3). However, this is not surprising given that the main protagonists of the MH video are males (the African boy and Arnold Schwarzanegger), and males likely relate more to the action film that is highlighted in the MH video. Table 4 displays the results of the DID regressions with *inspired, guilt* and *manipulated* as the dependent variables. Generally speaking, the treatment effects for males and females point in the same direction except for the *manipulated* regressions (3 and 6). Here we see stark differences for males and females: males felt more manipulated by the MH Treatment than the WV Treatment (significant at the 90% confidence level); whereas, females felt more manipulated by the WV Treatment (significant at the 95% confidence level).

To examine the influence of the gender effect on donations, we run the same regressions from Table 2 but now with interactions between *female* and the various treatments (Table A.4). This identifies the differential impact of gender on donations in each of the treatments. In the DID regressions, all of the coefficients on the interaction terms for *female*MH* and *female*WV* are positive, and the term for *female*WV* in Regression 1 is statistically significant. The WV interaction term is larger in magnitude and much more significant than the interaction for the MH treatment, indicating a stronger gender effect for WV participants. Furthermore, the *female*treatment* is large and highly significant in Regression 1. When separating MH and WV participants, *female*treatment* is

positive and significant in both regressions with WV participants, but is not significant in the regressions with MH participants.

Next, we again separate males and females completely and re-run the DID regressions with donations as the outcome of interest. Table 5 displays the results. No statistically significant coefficients occur for *MH Treatment,* indicating no gender differences in giving between the two treatments. However, there is a very large gender effect when comparing WV Treatment participants to the WV Control group: there are negative coefficients on *treatment* for males (with Regression 1 significant at the 95% confidence level), and highly significant and positive coefficients on *treatment* for females. Therefore, the WV Treatment seems to have a negative effect on the donation behavior of males but a positive influence on females. For males, the average effect of being in the WV Treatment relative to the control is *negative* $5.56; whereas, for women the effect is *positive* $4.64. This indicates that the overall estimated gender difference in the WV Treatment effect between males and females is approximately $10 in average donations! Furthermore, the linear probability regressions (2 and 4) indicate that women in the WV Treatment are estimated to donate 24.3 percentage points more often than in the WV Control; whereas, men in the WV Treatment are estimated to donate 13.2 percentage points *less* often than in the control (although the latter coefficient is not statistically significant). It appears that guilt appeals may be effective on women but dissuade donations among men. (Note that in order to test for a similar gender effect among MH participants, we performed the same regressions with WV Control and WV Treatment instead of the MH dummy variables but find no statistically significant coefficients on *treatment*).

Finally, we add a series of independent variables to attempt to explain these differences in giving between males and females. The regressions in Table 6 include the same independent variables as Table 3 (*similarity, portrayal* and *guilt*). As before, this compares WV and MH Treatment groups. We see that the coefficients in all four regressions for the three variables are positive, with three of the four *similarity* coefficients statistically significant. This continues to demonstrate the importance of *similarity* in explaining donation behavior, particularly among males where both coefficients are significant at the 95% confidence level. Furthermore, the coefficients on *guilt* and *portrayal* are positive in all four regressions. However, there is no clear pattern of differences between males and females that might explain the large differences in donations.

One potential explanation for the gender treatment effect is that females are more prominently featured in the WV video, which includes girls sharing their personal stories of struggle and a female narrator. Therefore, we might expect that females in the WV treatment group that identify more with the children in the video donated more. However, we attempted to test for this effect

Table 5
Estimated treatment effects by gender.

| | (1) | (2) | (3) | (4) |
| | Males: difference-in-differences | | Females: difference-in-differences | |
	Don. dmount	Donated	Don. dmount	Donated
MH control	-3.984	-0.205	1.092	0.134
	(2.977)	(0.204)	(1.314)	(0.121)
Treatment	-5.561**	-0.132	4.643***	0.243**
	(2.525)	(0.174)	(1.102)	(0.096)
MH treatment	1.189	0.071	-1.567	-0.053
	(1.193)	(0.128)	(1.273)	(0.080)
Constant	4.457	0.265	-1.288	0.189
	(4.629)	(0.374)	(2.764)	(0.226)
Observations	98	98	207	207
R-squared	0.217	0.055	0.101	0.066

Notes. Robust standard errors in parentheses. Significance levels: *** p< 0.01, ** p< 0.05, * p< 0.1. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*

Table 6
Estimated treatment effects by gender: similarity variables.

| | (1) | (2) | (3) | (4) |
| | Males: MH & WV treatment participants | | Females: MH & WV treatment participants | |
	Don. amount	Donated	Don. amount	Donated
MH treatment	0.113	0.007	-1.147	-0.034
	(1.220)	(0.134)	(1.341)	(0.080)
Guilt	0.048	0.065	1.059*	0.036
	(0.467)	(0.042)	(0.540)	(0.030)
Similarity	1.422**	0.218***	1.291*	0.069
	(0.593)	(0.068)	(0.715)	(0.051)
Portrayal	1.158	0.078	0.209	0.059
	(0.860)	(0.081)	(0.892)	(0.060)
Constant	-8.257**	-0.991**	-5.821	-0.102
	(3.904)	(0.373)	(4.528)	(0.302)
Observations	68	68	137	137
R-squared	0.345	0.286	0.130	0.096

Notes. Robust standard errors in parentheses. Significance levels: *** p< 0.01, ** p< 0.05, * p< 0.1. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*

by adding a *female*similarity* interaction term to the regressions in Table 3 and found that all four coefficients in the regressions for both MH and WV treatment groups were in fact negative. Therefore, if anything, a feeling of similarity among women decreased donations in both MH and WV treatment groups and, therefore, it appears unlikely that the strong female presence in the WV video was a factor in explaining the differences in male and female giving.

In order to utilize our full sample—including the controls—and explore other explanatory variables, we drop *similarity* and *portrayal* and include *entertained, inspired, manipulated* and *connected*. Since this analysis now includes the controls, we return to our DID framework and also separate the sample by gender. The results are displayed in Table 7. Interestingly, there are no statistically significant coefficients on *entertained* or *inspired*. *Connected* and *guilt* are both positive in all four regressions and significant in half of them. It appears that feelings of guilt and connection are associated with greater donations for both males and females, although this is not terribly surprising. Nonetheless, when comparing males' and females' reasons for donating (Table A.2), women were significantly more likely to agree with the statement "I would feel guilty if I spent the money on something else without giving something," and we know from Table 1 that in general women felt more guilt than men. Therefore, although *guilt* is a significant determinant of giving for both males and females, more females were made to feel guilty by the treatments. There were no such differences in feelings of connection.

The one variable that appears to have the most potential to explain differences in giving between males and females is *manipulated.* In the regressions in Table 7 the coefficients on *manipulated*

are negative in both male regressions yet positive in both female regressions. Furthermore, the coefficient in Regression 2 is highly significant (the coefficients with females are not). In other words, it appears that feeling manipulated after watching the video decreases the frequency and amount of donations among men, but has either a positive or no effect on women. It may be that if men are less motivated by empathic concern for others, they are more likely to be irritated by a feeling that a charitable appeal is manipulative and reduce their donations accordingly. This supports the hypothesis that some potential donors may become "immune" to guilt appeals (Dalton et al., 2008; Cotte et al., 2005; Wiepking, 2008), and perhaps even dissuaded by them, but only among men. Nonetheless, the regressions still leave much of the difference between male and female giving unexplained, as three out of the four coefficients on *treatment* continue to be statistically significant even with the added explanatory variables. This appears to be a fruitful area of future research.

4. Conclusion

The experimental evidence supports the underlying theoretical or experimental design framework (DH 1–2 and 4): the MH Treatment elicited higher relative feelings of similarity while participants in the WV Treatment experienced more guilt and inspiration. Furthermore, donations by both MH and WV treatment participants were motivated by similarity and guilt. However, perceptions were more important among WV treatment participants, who donated less if they did not like how the children in the video were portrayed. This result suggests possible donor fatigue among WV participants. Although both treatments were associated

Table 7
Estimated treatment effects by gender: feeling variables.

	(1)	(2)	(3)	(4)
	Males: difference-in-differences		Females: difference-in-differences	
	Don. amount	Donated	Don. amount	Donated
MH control	-3.144	-0.127	0.147	0.080
	(2.871)	(0.190)	(1.307)	(0.120)
Treatment	-5.289**	-0.155	3.633***	0.169*
	(2.399)	(0.169)	(1.169)	(0.099)
MH treatment	0.839	0.128	-1.039	-0.050
	(1.385)	(0.154)	(1.513)	(0.096)
Entertained	-0.105	-0.022	0.337	0.031
	(0.640)	(0.058)	(0.526)	(0.036)
Guilt	0.659	0.100**	0.977**	0.032
	(0.583)	(0.042)	(0.454)	(0.028)
Inspired	0.187	0.028	0.267	-0.017
	(0.740)	(0.064)	(0.527)	(0.036)
Manipulated	-0.624	-0.109***	0.522	0.019
	(0.474)	(0.039)	(0.406)	(0.028)
Connected	1.292*	0.017	0.399	0.0777**
	(0.728)	(0.060)	(0.561)	(0.037)
Constant	1.987	0.303	-7.928***	-0.117
	(5.221)	(0.378)	(2.929)	(0.241)
Observations	98	98	207	207
R-squared	0.303	0.198	0.168	0.116

Notes. Robust standard errors in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education*. Independent variable *Manipulative* represents response to the question: "Overall, I felt the video was manipulative". Options: "Strongly disagree," "Disagree", "Agree", "Strongly Agree".

with higher average donations relative to the controls, only the WV charitable appeal had a statistically significant treatment effect across the whole sample. Nonetheless, the difference in average donations between treatments is not statistically significant, so we cannot confirm or discard BH2. However, BH1 appears to hold only for the guilt-appeal treatment.

The findings also suggest that males and females react very differently to distinct charitable appeals: while both males and females are motivated by feelings of *guilt* and *similarity*, males appear to favor more straightforward appeals that simply provide information, while females seem to donate more when the appeal is emotionally engaging. Furthermore, males were discouraged from donating if they felt that the video was manipulative. Although further research is needed, previous studies suggest that these differences may be due to females' greater tendency to engage in pro-social behavior due to empathic concern relative to males (Bekkers and Wiepking, 2010), which may make them less prone to being discouraged by feelings of manipulation.

Whatever the explanation, the strong differential effect of gender on donation behavior has implications for both theory and practice. Models of altruism and pro-social behavior need to consider potential gender differences. Furthermore, in practice, charitable organizations need to think closely about their target populations; as demonstrated, the wrong type of appeal could strongly discourage donations among certain sub-populations relative to a straightforward appeal that simply shares information. Generally speaking, guilt appeals remain an effective strategy for eliciting donations among women, while simply sharing the facts without attempting to elicit emotion may be a more effective approach among men. Discriminating among these groups in general appeals could be challenging, yet organizations may very well know what proportion of their target donor population is male or female and can strategize accordingly. Fundraisers might also do well to consider the gender of potential donors when designing targeted mailings or e-mails, phone-call scripts, and other individualized strategies.

Since this study was conducted with a sample of undergraduate students that are, on average, younger, more educated

and with less disposable income than the general population (Bekkers, 2007), it is important for future research of similarity- and guilt-based charitable appeals to include more representative samples. Furthermore, the videos chosen here are just one example of similarity- and guilt-based appeals; future studies could attempt to use other videos that share similar characteristics, or other approaches for eliciting donations altogether, such as letters, phone calls, pictures, e-mails, and other common fundraising strategies. Non-profit organizations are in a great position to experiment with various approaches that could easily tease out the best strategies and improve donations over time, especially if they have a large sample of donors.

Finally, it is important for experiments and other studies of altruism and pro-social behavior to think closely about how to examine gender differences. While gender is almost always included as a control variable, the findings here point to major differences that go beyond merely shifting intercepts. Pro-social behavior may need to be modeled distinctly for males and females based on differences in underlying motivations. However, more research should be conducted to determine why these differences exist. Are females more motivated by empathic concern? Is this effect still present when children's welfare is not involved? Do males consistently react more negatively to feelings of manipulation? How do males and females react to manipulation that is not detected? Experiments could be designed to further explore these and related questions.

Submission declaration

The authors hereby declare that the results of the experiment have not been published previously, except as an online working paper through the University of Wisconsin-Madison's Department of Agricultural and Applied Economics.[7] This was necessary as we referenced the results in a grant application for a follow-up study. Furthermore, the manuscript is not currently under consideration for publication elsewhere and, if accepted, it will not be

---

published elsewhere, including electronically in the same form. All authors approve publication of the final paper and agree to adhere to all guidelines of the Journal of Behavioral and Experimental Economics.

Appendix A

Tables A.1–A.4.

Table A.1
Randomization checks.

MH treatment vs. WV treatment

Variables	Mean MHT	Obs. MHT	Mean WVT	Obs. WVT	Min	Max	P-Value
Age	20.60	102	20.48	104	18	47	0.741
Female	0.667	102	0.673	104	0	1	0.922
Foreign born	0.275	102	0.250	104	0	1	0.689
Education Level	2.931	102	3.010	104	1	7	0.423
Student Loan Debt	$20,206	96	$15,184	103	$0	$250,000	0.240
International News	2.853	102	2.615	104	1	6	0.667
Time Outside United States	4.161	87	3.905	84	1	6	0.344
Religious Attendance	4.137	102	3.788	104	1	5	0.119
Happiness	3.637	102	3.663	104	2	5	0.509

MH treatment vs. MH control

Variables	Mean MHT	Obs. MHT	Mean MHC	Obs. MHC	Min	Max	P-Value
Age	20.60	102	20.36	50	18	47	0.623
Female	0.667	102	0.660	50	0	1	0.935
Foreign born	0.275	102	0.300	50	0	1	0.743
Education Level	2.931	102	2.940	50	1	7	0.544
Student Loan Debt	$20,206	96	$8579	48	$0	$250,000	0.041**
International News	2.853	102	2.560	50	1	6	0.597
Time Outside United States	4.161	87	4.105	38	1	6	0.344
Religious Attendance	4.137	102	3.900	50	1	5	0.332
Happiness	3.637	102	3.620	50	2	5	0.934

WV treatment vs. WV control

Variables	Mean WVT	Obs. WVT	Mean WVC	Obs. WVC	Min	Max	P-Value
Age	20.48	104	20.22	50	18	47	0.396
Female	0.673	104	0.740	50	0	1	0.398
Foreign born	0.250	104	0.240	50	0	1	0.893
Education Level	3.010	104	2.760	50	1	7	0.177
Student Loan Debt	$15,184	103	$9394	47	$0	$250,000	0.124
International News	2.615	104	2.640	50	1	6	0.404
Time Outside United States	3.905	84	3.783	46	1	6	0.941
Religious Attendance	3.788	104	3.680	50	1	5	0.248
Happiness	3.663	104	3.680	50	2	5	0.041**

MH control vs. WV control

Variables	Mean MHC	Obs. MHC	Mean WVC	Obs. WVC	Min	Max	P-Value
Age	20.36	50	20.22	50	18	47	0.707
Female	0.660	50	0.740	50	0	1	0.383
Foreign born	0.300	50	0.240	50	0	1	0.499
Education Level	2.940	50	2.760	50	1	7	0.840
Student Loan Debt	$8579	48	$9394	47	$0	$250,000	0.836
International News	2.560	50	2.640	50	1	6	0.287
Time Outside United States	4.105	38	3.783	46	1	6	0.250
Religious Attendance	3.900	50	3.680	50	1	5	0.882
Happiness	3.620	50	3.680	50	2	5	0.190

Notes. P-values represent _t_-tests of equality of means for numerical variables and Pearson's chi-squared tests for categorical variables.

Table A.2
Reason for giving: "why did you donate to MH/WV?" (Agree = 2; Disagree = 1).

MH treatment vs. WV treatment

Variables	Mean MHT	Obs. MHT	Mean WVT	Obs. WVT	P-Value
The people in Africa need the money more than me	1.970	67	1.943	70	0.435
I felt connected with the people in the video.	1.672	67	1.729	70	0.467
I felt I could trust the organization that made the video.	1.761	67	1.886	70	0.055**
The people in the video appear to be just like me and I sometimes need help.	1.537	67	1.514	70	0.787
I would feel guilty if I spent the money on something else without giving something.	1.731	67	1.843	70	0.110
I could relate to the people in the video.	1.448	67	1.343	70	0.209
The video was entertaining	1.627	67	1.371	70	0.003***

MH treatment vs. Combined control

Variables	Mean MHT	Obs. MHT	Mean CC	Obs. CC	P-Value
The people in Africa need the money more than me	1.970	67	1.966	29	0.905
I felt connected with the people in the video.	1.672	67	1.517	29	0.151
I felt I could trust the organization that made the video.	1.761	67	1.621	29	0.160
The people in the video appear to be just like me and I sometimes need help.	1.537	67	1.276	29	0.018**
I would feel guilty if I spent the money on something else without giving something.	1.731	67	1.793	29	0.521
I could relate to the people in the video.	1.448	67	1.276	29	0.114
The video was entertaining	1.627	67	1.103	29	0.000***

WV treatment vs. Combined control

Variables	Mean WVT	Obs. WVT	Mean CC	Obs. CC	P-Value
The people in Africa need the money more than me	1.943	70	1.966	29	0.639
I felt connected with the people in the video.	1.729	70	1.517	29	0.042**
I felt I could trust the organization that made the video.	1.886	70	1.621	29	0.002***
The people in the video appear to be just like me and I sometimes need help.	1.514	70	1.276	29	0.030**
I would feel guilty if I spent the money on something else without giving something.	1.843	70	1.793	29	0.550
I could relate to the people in the video.	1.343	70	1.276	29	0.517
The video was entertaining	1.371	70	1.103	29	0.008***

Male vs. Female

Variables	Mean Male	Obs. Male	Mean Female	Obs. Female	P-Value
The people in Africa need the money more than me	1.935	46	1.967	120	0.360
I felt connected with the people in the video.	1.630	46	1.683	120	0.517
I felt I could trust the organization that made the video.	1.804	46	1.783	120	0.766
The people in the video appear to be just like me and I sometimes need help.	1.478	46	1.483	120	0.953
I would feel guilty if I spent the money on something else without giving something.	1.543	46	1.883	120	0.000***
I could relate to the people in the video.	1.435	46	1.350	120	0.312
The video was entertaining	1.435	46	1.425	120	0.909

Notes. P-values represent Pearson's chi-squared tests.

Table A.3
Estimated treatment tffects on similarity feelings by gender.

	(1)	(2)	(3)	(4)	(5)	(6)
	Males: difference-in-differences			Females: difference-in-differences		
	Similarity	Identify	Portrayal	Similarity	Identify	Portrayal
MH treatment	0.725***	0.500**	0.509***	0.228	0.0867	0.0369
	(0.216)	(0.217)	(0.179)	(0.149)	(0.163)	(0.134)
Constant	1.279	1.313*	2.310***	1.476***	1.621***	2.827***
	(0.772)	(0.690)	(0.719)	(0.523)	(0.519)	(0.417)
Observations	68	68	68	137	137	137
R-squared	0.216	0.155	0.130	0.063	0.052	0.028

Notes. Robust standard errors in parentheses. Significance levels: *** p < 0.01, ** p < 0.05, * p < 0.1. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*

Table A.4
Estimated gender treatment effects: female*treatment interactions.

	(1)	(2)	(3)	(4)	(5)	(6)
	Difference-in-Differences		MH Participants		WV Participants	
	Don. amount	*Donated*	*Don. amount*	*Donated*	*Don. amount*	*Donated*
MH control	-0.278	0.038				
	(1.285)	(0.104)				
Treatment	-3.430*	-0.008				
	(1.858)	(0.146)				
MH treatment	0.058	-0.006	-2.159	0.042		
	(1.325)	(0.130)	(2.254)	(0.176)		
WV treatment					-4.929*	-0.130
					(2.529)	(0.177)
Female	-3.107*	0.041	-0.971	0.205	-5.719**	-0.152
	(1.651)	(0.116)	(2.100)	(0.158)	(2.518)	(0.169)
Female*MH	0.146	0.018	-0.149	0.009	0.449	0.025
	(0.280)	(0.020)	(0.495)	(0.034)	(0.332)	(0.026)
Female*WV	4.916**	0.094				
	(2.129)	(0.154)				
Female*treatment	7.195***	0.188	3.119	-0.052	9.589***	0.367*
	(1.994)	(0.155)	(2.503)	(0.190)	(2.732)	(0.197)
Constant	1.067	0.112	3.234	0.284	-1.181	0.005
	(2.820)	(0.215)	(3.673)	(0.315)	(3.716)	(0.272)
Observations	305	305	151	151	154	154
R-squared	0.108	0.060	0.054	0.065	0.218	0.103

Notes. Robust standard errors in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We omit the following control variables from the table: *Foreign, Familiarity, International News, Charity, Religious, Mother's Education* and *Father's Education.*
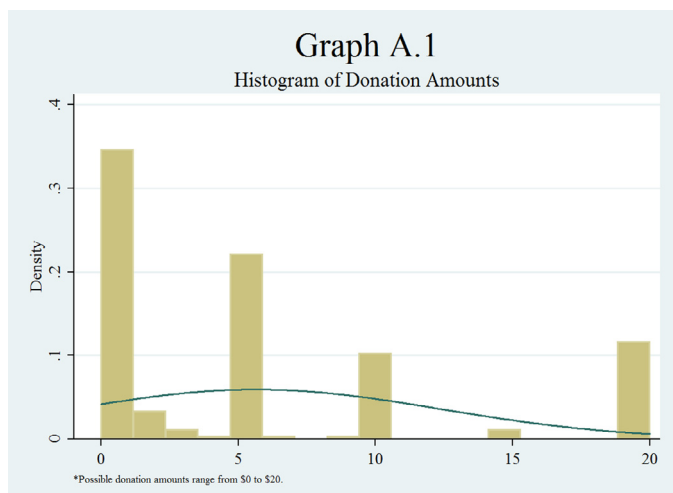
Graph A.1. Histogram of donation amounts.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.socec.2017.02.004.

References

Aguiar, F., Brañas-Garza, P., Miller, L.M., 2008. Moral distance in dictator games. Judgement Decis. Mak. 3 (4), 344–354.

Aldashev, G., Verdier, T., 2010. Goodwill bazaar: NGO competition and giving to development. J. Develop. Econ. 91 (1), 48–63.

Andreoni, J., 1989. Giving with impure altruism: applications to charity and ricardian equivalence. J. Polit. Econ. 97 (6), 1447–1458.

Andreoni, J., 1990. Impure altruism and donations to public goods: a theory of warm-glow giving. Econ. J. 100 (401), 464–477.

Andreoni, J., Vesterlund, L., 2001. Which is the fair sex? Gender differences in altruism. Q. J. Econ. 293–312.

Ashraf, N., 2013. Rx: human nature. Harv. Bus. Rev. 91 (4), 119–123.

Ashraf, N., Bandiera, O., Jack, B.K., 2014. No margin, no mission? A field experiment on incentives for public service delivery. J. Public Econ. 120, 1–17.

Basil, D.Z., Ridgway, N.M., Basil, M.D., 2008. Guilt and giving: a process model of empathy and efficacy. Psychol. Market. 25 (1), 1–23.

Batson, D.C., Duncan, B.D., Ackerman, P., Buckley, T., Birch, K., 1981. Is empathic emotion a source of altruistic motivation? J. Pers. Soc. Psychol. 40 (2), 290–302.

Batson, C.D., 2014. The altruism question: Toward a social-psychological answer. Psychology Press.

Bekkers, R., 2007, December. Measuring altruistic behavior in surveys: the all-or-nothing dictator game. In: Survey Research Methods, Vol. 1. University of Groningen, pp. 139–144.

Bekkers, R., Wiepking, P., 2010. A literature review of empirical studies of philanthropy: eight mechanisms that drive charitable giving. Nonprofit Voluntary Sect. Q.

Bekkers, R., 2010. George gives to geology Jane: The name letter effect and incidental similarity cues in fundraising. Int. J. Nonprofit Voluntary Sect. Market. 15 (2), 172–180.

Beutel, A.M., Marini, M.M., 1995. Gender and values. Am. Sociol. Rev. 436–448.

Bickman, L., Kamzan, M., 1973. The effect of race and need on helping behavior. J. Soc. Psychol. 89, 73–77.

Bolton, G.E., Katok, E., 1995. An experimental test for gender differences in beneficent behavior. Econ. Lett. 48 (3), 287–292.

Bolton, G.E., Katok, E., 1998. An experimental test of the crowding out hypothesis: the nature of beneficent behavior. J. Econ. Behav. Organ. 37 (3), 315–331.

Brañas-Garza, P., 2006. Poverty in dictator games: awakening solidarity. J. Econ. Behav. Organ. 60 (3), 306–320.

Brañas-Garza, P., 2007. Promoting helping behavior with framing in dictator games. J. Econ. Psychol. 28 (4), 477–486.

Brañas-Garza, P., Capraro, V., Rascon, E., 2016. Gender differences in altruism: expectations, actual behaviour and accuracy of beliefs. Actual Behav. Accuracy Beliefs.

Brennan, L, Binney, W., 2010. Fear, guilt, and shame appeals in social marketing. J. Bus. Res. 63 (2), 140–146.

Brief, A.P., Motowidlo, S.J., 1986. Prosocial organizational behaviors. Acad. Manage. Rev. 11 (4), 710–725.

Burnett, M.S., Lunsford, D.A., 1994. Conceptualizing guilt in the consumer decision making process. J Consumer Market. 11, 33–43.

Camerer, C., 2003. Behavioral Game Theory: Experiments in Strategic Interaction. Princeton University Press.

Carpenter, J., Connolly, C., Myers, C.K., 2008. Altruistic behavior in a representative dictator experiment. Exp. Econ. 11 (3), 282–298.

Charness, G., Rabin, M., 2002. Understanding social preferences with simple tests. Q. J. Econ. 117 (3), 817–869.

Cherry, T.L., Frykblom, P., Shogren, J.F., 2002. Hardnose the dictator. Am. Econ. Rev. 92 (4), 1218–1221.

Cherry, T.L., Shogren, J.F., 2008. Self-interest, sympathy and the origin of endowments. Econ. Lett. 101 (1), 69–72.

Chun-Tuan, C., 2011. Guilt appeals in cause-related marketing. Int. J. Advertising 30 (4), 587–616.

Cotte, J., Coulter, R.H., Moore, M., 2005. Enhancing or disrupting guilt: the role of ad credibility and perceived manipulative intent. J. Bus. Res. 58 (3), 361–368.

Coulter, R.H., Pinto, M.B., 1995. Guilt appeals in advertisinig: what are their effects? J. Appl. Psychol. 80 (6), 697–705.

Dahl, D.W., Honea, H., Manchanda, R.V., 2003. The nature of self-reported guilt in consumption contexts. Market. Lett. 14 (3), 159–171.

Dalton, S., Madden, H., Chamberlain, K., Carr, S., Lyons, A.C., 2008. It's gotten a bit old, charity': Young adults in New Zealand talk about poverty, charitable giving and aid appeals. J. Community Appl. Soc. Psychol. 18, 492–504.

Davis, M.H., 1994. Empathy: A Social Psychological Approach. Westview Press.

De Vaus, D., McAllister, I., 1987. Gender differences in religion: a test of the structural location theory. Am. Sociol. Rev. 472–481.

Eckel, C.C., Grossman, P.J., 1996. Altruism in anonymous dictator games. Games Econ. Behav. 16 (2), 181–191.

Eckel, C.C., Grossman, P.J., 1998. Are women less selfish than men?: Evidence from dictator experiments. Econ. J. 108 (448), 726–735.

Eckel, C.C., Grossman, P.J., 2008. Differences in the economic decisions of men and women: experimental evidence. Handb. Exp. Econ. Results 1, 509–519.

Eckel, C.C., Grossman, P.J., Johnston, R.M., 2005. An experimental test of the crowding out hypothesis. . Public Econ. 89 (8), 1543–1560.

Einolf, C.J., 2011. Gender differences in the correlates of volunteering and charitable giving. Nonprofit Voluntary Sect. Q. 40 (6), 1092–1112.

Eisenberg, N., Lennon, R., Roth, K., 1983. Prosocial development: a longitudinal study. Dev. Psychol. 19 (6), 846.

Engel, C., 2011. Dictator games: a meta study. Exp. Econ. 14 (4), 583–610.

Etang, A., Fielding, D., Knowles, S., 2012. Giving to Africa and perceptions of poverty. J. Econ. Psychol. 33 (4), 819–832.

Fong, C.M., Luttmer, E.F., 2011. Do fairness and race matter in generosity? Evidence from a nationally representative charity experiment. J. Public Econ. 95 (5), 372–394.

Gaertner, S., Bickman, L., 1971. Effects of race on the elicitation of helping behavior: the wrong number technique. J. Pers. Soc. Psychol. 20 (2), 218.

Goodman, M.D., Gareis, K.C., 1993. The influence of status on decisions to help. J. Soc. Psychol. 133 (1), 23–31.

Guéguen, N., 2003. Fund-raising on the Web: The effect of an electronic Door-in-the-Face technique on compliance to a request. Cyber Psychol. Behav. 6 (2), 189–193.

Guéguen, N., Pichot, N., Dreff, G., 2005. Similarity and helping behavior on the web: the impact of the convergence of surnames between a solicitor and a subject in a request made by E-Mail. J. Appl. Soc. Psychol. 35 (2), 423–429.

Hensley, W.E., 1981. The effects of attire, location, and sex on aiding behavior: a similarity explanation. J. Nonverbal Behav. 6 (1), 3–11.

Hoffman, M.L., 1982. Development of prosocial motivation: Empathy and guilt. The development of prosocial behavior 281, 313.

Huhmann, B.A., Brotherton, T.P., 1997. A content analysis of guilt appeals in popular magazine advertisements. J. Advertising 26 (2), 35–45.

Imas, A., 2014. Working for the "warm glow": on the benefits and limits of prosocial incentives. J. Public Econ. 114, 14–18.

Karabenick, S.A., Lerner, R.M., Beecher, M.D., 1975. Helping behavior and attitude congruence toward capital punishment. J. Soc. Psychol. 96 (2), 295–296.

Keasey, C., Keasey, C., 1971, April. Straight and hip peace petitioners. Meeting of the Eastern Psychological Association.

List, J.A., Price, M.K., 2009. The role of social connections in charitable fundraising: evidence from a natural field experiment. J. Econ. Behav. Organ. 69 (2), 160–169.

Merchant, A., Ford, J.B., Sargeant, A., 2010. Charitable organizations' storytelling influence on donors' emotions and intentions. J. Bus. Res. 63 (7), 754–762.

Miller, A.S., Hoffmann, J.P., 1995. Risk and religion: an explanation of gender differences in religiosity. J. Sci. Study Relig. 63–75.

Nelson, R.A., 2009. Effects of Similarity and Tourist Status on Prosocial Behavior: A Field Study in Spain. Western Washington University.

Oveis, C., Horberg, E.J., Keltner, D., 2010. Compassion, pride, and social intuitions of self-other similarity. J. Pers. Soc. Psychol. 98 (4), 618.

Palfrey, T.R., Prisbrey, J.E., 1997. Anomalous behavior in public goods experiments: how much and why? Am. Econ. Rev. 829–846.

Park, J.H., Schaller, M., 2005. Does attitude similarity serve as a heuristic cue for kinship? Evidence of an implicit cognitive association. Evol. Hum. Behav. 26 (2), 158–170.

Pelligra, V., Stanca, L., 2013. To give or not to give? Equity, efficiency and altruistic behavior in an artefactual field experiment. J. Socio-Econ. 46, 1–9.

Renner, S., Lindenmeier, J., Tscheulin, D.K., Drevs, F., 2013. Guilt appeals and prosocial behavior: an experimental analysis of the effects of anticipatory versus reactive guilt appeals on the effectiveness of blood donor appeals. J. Nonprofit Public Sect. Market. 25 (3), 237–255.

Romero, T., Castellanos, M.A., de Waal, F.B., 2010. Consolation as possible expression of sympathetic concern among chimpanzees. Proc. Natl Acad. Sci. 107 (27), 12110–12115.

Rotemberg, J.J., 2009. Attitude-dependent altruism, turnout and voting. Public Choice 140 (1-2), 223–244.

Rotemberg, J.J., 2014. Charitable giving when altruism and similarity are linked. J. Public Econ. 114 (C), 36–49.

Ruth, J.A., Faber, R.J., 1988. Guilt: an overlooked advertising appeal. In: The American Academy of Advertising Proceedings. Austin, Texas. American Academy of Advertising, pp. 83–89.

Small, D.A., Loewenstein, G., 2003. Helping a victim or helping the victim: altruism and identifiability. J. Risk Uncertain. 26 (1), 5–16.

Stürmer, S., Snyder, M., Kropp, A., Siem, B., 2006. Empathy-motivated helping: the moderating role of group membership. Pers. Soc. Psychol. Bull. 32 (7), 943–956.

Suedfeld, P., Bochner, S., Wnek, D., 1972. Helper-sufferer similarity and a specific request for help: bystander intervention during a peace demonstration. J. Appl. Soc. Psychol. 2 (1), 17–23.

Sutter, J., 2013. Africa doesn't need our "pity". CNN Opinion Retrieved from http://www.cnn.com/2013/03/14/opinion/sutter-stop-the-pity/.

Verhaert, G.A., Van den Poel, D., 2011. Empathy as added value in predicting donation behavior. J. Bus. Res. 64 (12), 1288–1295.

Wiepking, P., 2008. For the Love of Mankind: A Sociological Study on Charitable Giving.

Wiepking, P., Bekkers, R., 2012. Who gives? A literature review of predictors of charitable giving. Part Two: gender, family composition and income. Voluntary Sect. Rev. 3 (2), 217–245.

Jordan van Rijn is a third-year Ph.D. student in Agricultural and Applied Economics at the University of Wisconsin-Madison. His research focuses on behavioral and development economics. Specifically, Jordan uses experimental and econometric methods to study financial inclusion in developing countries, and the psychological and behavioral determinants of charitable giving. Before beginning his doctoral studies, he worked as a Senior Microfinance Loan Officer for Accion in New Mexico, and as a Research Associate for ideas42 in Colombia. He holds master's degrees in Agricultural and Applied Economics (University of Wisconsin-Madison) and International Affairs (University of California-San Diego).

Bradford L. Barham is a full professor in the Department of Agricultural and Applied Economics at the University of Wisconsin-Madison, where he has been on the faculty since 1987. He received his Ph.D. in Economics from Stanford University and focuses his research and teaching on development economics. Brad also conducts considerable research and outreach on themes related to economic and environmental performance of US agriculture.

Reka Sundaram-Stukel received her Ph.D. in development economics from the University of Wisconsin-Madison in 2005 and is currently a health economist at the Wisconsin Department of Public Health. Reka's research spans a variety of topics in applied economics including credit and land markets, rural enterprises in developing countries, cooperative businesses, and health outcomes in the U.S. She is currently involved in four projects: the economics of opioid-related hospital charge; insurance and mental health; behavioral outcomes in Wisconsin; and Hepatitis C surveillance in Wisconsin. Previously, she worked as a consultant for the World Bank and World Council of Credit Unions.