Empathic and Numerate Giving:

The Joint Effects of Images and Charity Evaluations

Abstract

Helping behaviors are often driven by emotional reactions to the suffering of particular individuals, but these behaviors do not seem to be upregulated when many people need help. In this paper we consider if these reactions are also "innumerate" to information about how charities spend their money. Across six experiments we examined how images of identified victims interact with information about charity efficiency (money toward program) and effectiveness (program outcome). We further examined if the images primarily get people to donate (yes/no), while efficiency/effectiveness might provide a tuning mechanism for how much to give. Results showed that images influenced the propensity to donate and induced participants donate their full bonuses, indicating heuristic effects. Efficiency and effectiveness information had no effects on donations.

Keywords: Prosocial behaviors, identified victims, dual-process perspectives, empathy, deliberation, efficiency, effective altruism

Introduction

Reacting emotionally to someone else's suffering, accompanied by an urge to alleviate it, can be a potent force behind helping behaviors (e.g, Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Dovidio, Piliavin, Schroeder, & Penner, 2012). Some scholars have argued, however, that such emotions can ultimately do more harm than good. For instance, Bloom (2016) argued that "empathy is a spotlight focusing on certain people in the here and now […] It is innumerate, favoring the one over the many […] If our concern is driven by thoughts of the suffering of specific individuals, then it sets up a perverse situation in which the suffering of one can matter more than the suffering of a thousand" (pp. 9 & 89).

A proposed cure for these perversities follows from Enlightenment philosophy: Give people better information to guide their helping behavior, and encourage them to think rationally, rather than following their gut feelings (e.g., Bloom, 2016; Singer, 2015). In this paper we take a step back from normative arguments about what people *should do*, to consider an empirical question: what do donors *actually do* when facing empathy-invoking appeals and information that invites logical deliberation? We examine this question by differentiating mental processes that are spontaneous (empathic responses) from ones that are more deliberate (evaluating the efficiency or effectiveness of a charity).

The Innumerate (but Generalizable) Features of Empathy

The description of empathy as innumerate fits the notion of an emotional heuristic (e.g., Slovic, Finucane, Peters, & MacGregor, 2007). Although some definitions and aspects of empathy may involve deliberation (e.g. perspective-taking; Davis, 1983), we focus on the emotional reactions associated with an urge to relieve the suffering of someone else (see also Batson et al., 1981; Singer & Klimecki, 2014). In this sense, empathy is fast and spontaneous,

and also evident in species with limited analytic abilities (Preston & de Waal, 2002). Like other spontaneous mental processes, empathic reactions are prone to cognitive biases (Bloom, 2016).

Perhaps the clearest bias is that empathy for a *particular* person's distress leaves one insensitive to the *number* of people that can be helped. There is strong evidence that people offer more aid to specific, identifiable victims than anonymous, statistical victims (called the *identified victim effect*; see e.g., Kogut & Ritov, 2005; Lee & Feeley, 2016; Small, Loewenstein, & Slovic, 2007). However, empathy toward one person may still benefit other people sharing the identified victim's situation. Similar to Bloom's (2016) analogy of a spotlight, we ask whether empathy is like a laser beam directed at one person only, or alternatively, like a diffuse flashlight focused on one person but partially highlighting others as well.

Identified victim effects clearly benefit the highlighted individuals (for a meta-analysis, see Lee & Feeley, 2016), but benefits for others remain unclear. For instance, Small et al. (2007) described how "any money that you donate will go to Rokia [the identified victim]" (p. 152), while Kogut and Ritov (2005) asked whether participants "were willing to contribute money to save the victim(s) lives" (p. 160). Two studies focused on donations not earmarked for the identified victim have generated mixed results (see Erlandsson, Björklund, and Bäckström, 2015; Lesner & Rasmussen, 2014). Those studies also involved hypothetical giving, or relied entirely on previous donors as participants, which complicates the generalizability of the findings (see also next heading).

The notion that empathy is innumerate also informs discussions about rational and effective helping behaviors. If empathy is innumerate it should not only be insensitive to the numbers of victims, but to *any* numerical information – such as the proportion of a charity's

revenue that goes to its programs (henceforth efficiency), and the ultimate outcomes these programs yield (henceforth effectiveness).

Charity Efficiency and Effectiveness

Effectiveness (versus efficiency) is a more direct indicator of the positive impact of a donation, but it is also harder to quantify (Caviola, Faulmüller, Everett, Savulescu, & Kahane, 2014; Singer, 2015). Efficiency can be calculated based on tax records of revenues and overhead costs, and several websites rate charities based on this information (e.g., Charity Navigator and GuideStar). However, a donor wishing to do the most good should also consider the indirect benefits of "inefficient" charity spending (e.g. fundraisers increasing a charity's revenue). Furthermore, new ("marginal") donations may generate different results as earlier ones (see e.g., Steinberg & Morris, 2010). Thus, some scholars argue that efficiency-oriented donors typically focus on the wrong arithmetic (e.g., Singer, 2015; Steinberg, 1986). Nevertheless, efficiency and effectiveness evaluations both involve numerical thinking, and both are informative (if correctly specified) about the impact per dollar donated *when everything else is equal*. Thus, a numerate donor who cares about impact should consider both types of information when other factors are kept constant. But do they?

The empirical findings are mixed. While several correlational studies suggest that more efficient charities receive more donations (for a review, see Bekkers & Wiepking, 2011), this association could be due to confounds, such as the size and familiarity of a charity. Big charities often have smaller overhead costs (e.g., Bowman, 2006), and there are many reasons why they generate more donations. Some work further suggests that changes in charity ratings lead to changes in charity revenues (e.g., Gordon, Knock, & Neely, 2009; Yörük, 2016), but it is unclear

if this is driven by efficiency evaluations per se. For instance, people might respond to the number of stars given to a charity without deeply considering what these stars represent.

Some lab experiments provide evidence that people favor efficient charities in forced choice questions, especially when the contrasts are very clear (0% vs 50% overhead; Gneezy, Keenan, & Gneezy, 2014). Yet, other studies suggest that people attend to efficiency information as a potential excuse for not to donate (Exley, 2016), and beliefs about effectiveness are colored by subjective preferences (Berman, Barasch, Levine, & Small, 2018). Further evidence suggests that people give based on a subjective sense of making a difference (e.g., when they can help a charity across the finish line with a fundraising goal; Cryder, Loewenstein, & Scheines, 2013; Cryder, Loewenstein, & Seltman, 2013) rather than based on objective metrics of charity efficiency or effectiveness.

Field experiments suggest that overall, donors do not contribute more when they are informed (versus not informed) about either charity efficiency (Parsons, 2007), or effectiveness (Karlan & Wood, 2017). While Karlan and Wood (2017) did find that those who had previously donated large amounts gave more when they received effectiveness information (and Parsons found similar effects for efficiency and prior donors), the reason for this effect is unclear. For example, large/frequent donors may experience a greater pressure to donate in light of *any* new positive information. Indeed, the compliance literature suggests that people who have already committed to buy something are more easily persuaded in a later stage to pay more for the same product (see e.g., Cialdini & Goldstein, 2004; Cialdini & Griskevicius, 2010). There is little reason to believe that donors, unlike regular buyers of products, are immune to compliance pressures.

Still, people might use more deliberate thinking when deciding how *much* to give, (thus being susceptible to information about charity efficiency/effectiveness) as compared to when deciding *whether* to donate. This may be particularly the case for regular large donors, who may not dwell on deciding *whether* to donate again. From this perspective, major donors might not be more dispositioned toward effective giving (as interpreted by Karlan & Wood, 2017). Rather, small irregular donors may be pre-occupied with a pre-requisite, potentially more emotion-laden question: Should I support this cause at all?

Interactions between Empathic Emotions and Deliberation

We further considered whether combining an empathy-induction with efficiency/ effectiveness information leads to greater donations than the empathy-induction on its own. In fact, the literature indicates a potential for a "negative" interaction, in which a rational appeal interferes with the spontaneous empathic reaction and leads to less donations than an empathic appeal alone (Small et al., 2007). Other research further suggests that people are prosocial and cooperative when they make more spontaneous decisions, and conversely, act more self-serving when they ponder more on their decisions (e.g., Rand et al., 2012; Rand, 2016; but see also Tinghög et al., 2013).

This research raises an unresolved question: Does the empathy-disruption occur for any deliberation, or only for certain types of deliberation? For instance, spending cognitive resources on a task that is irrelevant for charitable giving may create a backlash for empathy-driven giving (see Small et al., 2007, study 4), but deliberating on charity effectiveness may not do so.

The Current Studies

Our research addresses a series of unsettled questions about the role of spontaneous empathy and deliberate thinking in charitable giving. When people are empathically moved to

help a particular individual, they consider if their actions will have the desired effect or not (i.e. effect information facilitates empathically motivated help; e.g., Sibicky, Schroeder, & Dovidio, 1995). However, it remains unclear whether effects of empathy on donations also depend on information about how efficiently/effectively charities spend their money. This information may amplify empathy-based giving (as triggered by images of particular victims) – a "*positive" interaction* (similar to the findings for interpersonal helping behaviors). On the other hand an evaluation of efficiency/effectiveness information may disrupt emotionally-induced generosity – a "*negative" interaction* (similar to findings by Small et al., 2007, suggesting that analytic thinking decreases donations to identified victims). Empathy and efficiency/effectiveness information may also operate independently, showing *no interaction*.

We also examined hypotheses about the respective main effects (in addition to the interactions). Whereas conventional wisdom suggests that images of identified victims generates help toward many others in the same situation (see also Slovic, Västfjäll, Erlandsson, & Gregory, 2017), some have argued otherwise (Bloom, 2016; Lesner & Rasmussen, 2014). We predicted that victim images increase donations, particularly by increasing the willingness to donate anything (versus nothing), pushing participants past the initial hurdle to "do something". This would be consistent with an innumerate and heuristic nature of emotionally-driven prosociality (Bloom, 2016; Slovic, 2010).

To the extent that efficiency/effectiveness information increases donations, it seems reasonable that this would instead impact *amounts* given. To test these different effects, we first estimated the effects of our treatments on donation incidence (donating: yes/no), and secondly on non-zero amounts (i.e. two outcomes equivalent to those estimated in a two-part model; see Humphreys, 2013; see also supplementary materials for alternative modeling strategies).

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Methods

Participants

Except for study 6, all experiments involved participants from Amazon Mechanical Turk. We recruited Americans with a hit approval rating of 98% or higher and 100 hits or less. The latter restriction aimed to assure they were somewhat naïve about psychological experimentation Respondents were excluded if they failed simple attention checks (e.g., "to monitor quality, please respond with a seven for this item"). There were two such screening questions in studies 1-4; study 5 had one; study 6 used a different kind of attention check.

Study 6 was involved (mainly student) members of a study pool at a British university, invited to complete an online Omnibus survey (see https://osf.io/cvrn4 for pre-registration). Here we measured attentiveness by asking participants to recall the global regions that one of the charities operated (Latin America and Africa). The results reported below focuses on participants who recalled at least one of these regions. In the supplementary materials we also report results for the full sample. Results are similar for each of these subsets.

Based on these inclusion and exclusion criteria the final sample sizes were 398, 614, 611, 608, 433, and 319 in Studies 1-6, respectively (variation tracking design complexity). The percentage of women varied between 57 and 64%, the median age across all studies was 23-30 years (SDs from 9.55 to 12.05). In Study 1, 2, 3, and 5, participants received $1.50 as a baseline payment, whereas those in the slightly longer Study 4 received $2. Baseline payments could not be donated within the study. In addition, participants were offered a bonus payment, or entered into a raffle, from which they could donate (main dependent variable). Studies 1 and 2 involved a

bonus of $3, Studies 3 and 4 involved a raffle for $50 (1:25 odds in Study 3 and 1:100 in Study 4). Study 5 had a bonus of $5. Study 6 involved a raffle for one of 20 Amazon £50 gift cards (odds of winning not disclosed, roughly 1:20 ex-post).

We aimed to have around 100 participants per experimental cell. The experiments were originally designed to examine effects of victim imagery and efficiency information for the whole range of donation amounts, and powered accordingly. In ordinary least-squares regression, we would have a power of .80 for detecting a weak effect ($\Delta R^2 = .02$) in a 2×2 between-subject design with 400 participants, or .93 in a 2×3 design with 600 participants (estimated in GPower 3.1; Faul, Erdfelder, Lang, & Buchner, 2007). Taking all main and interactions into account, the power would have been .65 and .76. Given that the realized distribution of donations was trimodal (most people giving nothing, half, or everything), we updated some analytic procedures, leading to lower ex-post power for some analyses. For example, analyzing mid-range donation amounts (roughly normally distributed), and setting aside the minimum and maximum donations, the actual power to detect a small effect, given the current Ns, would be $>.70$ for one predictor and $>.45$ for all five predictors in the 2×3 design (all other analyses had better power). To get better estimates of effect sizes and confidence intervals we also conducted mini meta-analyses (see Goh, Hall, & Rosenthal, 2016).

Designs

All studies involved a manipulation of a victim image (versus no image), crossed with a manipulation of efficiency or effectiveness information. Study 1 used a 2 (Victim image: Yes/No) $\times$ 2 (Positive efficiency information: Yes/No) between-subject design. In Study 2 and 3, we extended the second factor to three levels three levels: positive, negative, or no efficiency information – resulting in a 2×3 between-subject design. Study 4 used a 2 (Image: Yes/No) $\times$ 3

(Efficiency evaluation: Early /No /Late comparison) between-subject design (see procedure for rationale). Study 5 employed the same 2×2 design as in Study 1, but we manipulated information about effectiveness instead of efficiency. Study 6 involved a conjoint evaluation of the effectiveness of two charities, but was otherwise similar to Study 5.

Procedures and Materials

This section provides a brief overview. More details are provided in the supplementary materials. The first four experiments focused on the civil war in Syria, and participants in all conditions were initially shown a news headline about the humanitarian crisis in the country (Gladstone, 2016). We presented this information (and asked about their familiarity with such news) to establish a baseline problem description, and to increase the baseline level of concern across all conditions for the charity operation. For the image manipulation we used a highly publicized picture of an injured boy in an ambulance, following an airstrike. A brief caption from the Guardian included the boy's name (see Nott, 2016), hence introducing an identified victim (see also Kogut & Ritov, 2005).

We asked participants to describe their spontaneous reactions to seeing the image. Common responses were "sad," horrified," "heartbreaking," and "poor child." While some of these reactions appear more like personal distress than empathy, these emotions are not mutually exclusive (e.g., Dovidio, Allen, & Schroeder, 1990). Further, personal distress tends to predict avoidance of the situation when that option is available (e.g., by simply closing the survey), whereas empathy is directly associated with wanting to help (e.g., donating; see also Dovidio et al., 2012). Thus, to the extent that the image leads to donations, empathy is likely involved.

We further manipulated information about efficiency with ratings from Charity Navigator (charitynavigator.org), which rates charities' financial health and accountability/transparency.

The financial score represents an efficiency metric based on measures such as "percentage of total expenses dedicated to the charity's operations." We thus manipulated participants' access to positive efficiency evaluations, presented in a realistic and ecologically valid format. Experiments 2 and 3 further included a negative information manipulation, presenting news that aid programs had been suspended when U.N. convoys were attacked (Cunningham, DeYoung, & Roth 2016), implying that donated money would not be put toward any program in Syria at that time-point.

In Study 4 the efficiency information involved a conjoint evaluation of two charities, one with high efficiency (see charitynavigator.org/index.cfm?bay=search.history&orgid=4438 [2016, June report]) and the other having mediocre efficiency (see charitynavigator.org/index.cfm?bay=search.summary&orgid=8166 [2016, June report]). The conjoint presentation was motivated by the notion that some information is difficult to evaluate on its own, but becomes meaningful in relation to some comparative standard (Hsee, Loewenstein, Blount, & Bazerman, 1999; see also Caviola et al., 2014). Here we aimed to measure whether people would pay more attention to efficiency if they could directly compare charities based on this metric. The other Charity Navigator dimension, accountability/ transparency, was rated similarly for both charities. Thus, here we could also rule out any impact of information about accountability/transparency on donations. The charities were presented side-by-side, with a randomized left-right assignment. We also manipulated when participants received the efficiency information – before or after an initial commitment to donate (see below for more procedure details).

In Study 5 we focused on information about outcome effectiveness, instead of (internal) charity efficiency. Participants either read a text about the effectiveness of the Polio Eradication Initiative, including positive conclusions from an economic cost-benefit analysis (see Tebbens et

al., 2010), or a control text describing the spread and detection of Polio (no mention of effectiveness). Here the image manipulation focused on a young girl paralyzed from Polio (see https://www.flickr.com/photos/91311153@N02/8290596191).

Study 6 focused on charity outcome effectiveness for helping blind individuals (similar to an example given by Singer, 2015). Like study 4, it also involved a conjoint evaluation of two charities. The effectiveness information described how the lifetime cost for a guide dog is around £55,000 (cost-ineffective charity), as compared to estimates of £75 to avert 10-50 years of serious debilitation from river blindness (cost-effective charity). The image depicted a blind teenage girl (https://www.flickr.com/photos/communityeyehealth/5492473278).

In all studies, except the last one, participants were asked if they would be willing to donate (yes/no) before being asked about actual donations (in study 6, participants chose one charity, if any, instead of the yes/no question about donating at all). We varied the timing of the commitment question, that is, the information seen before/after it (but before actual donation choices) across the studies to test different hypotheses about how images interact with efficiency information at different stages of the donation decision-making process (see also supplementary materials). More systematic follow-up studies on the order effects (not reported here, due to different focus) showed no systematic order effects.

The primary outcome of interest was how much participants decided to donate. Answers were given on a slider scale, and these had 1c increments for the $3 and $5 bonuses, and $1 increments for the $50/£50 raffles (see *Participants* for details about the payments). Decisions were consequential. Participants in Studies 1-3 were told that donations were going to the Syria Fund of Save the Children (and the efficiency information also specified the charity name). The two charities in Study 4 were not named, and participants in the efficiency comparison conditions

chose one of them based on a display of their Charity Navigator ratings. Participants in Study 5

learned that donations would go to the Polio Eradication Initiative. In study 6, participants first

chose between supporting Guide Dogs UK or the river-blindness program of the Carter Center,

or neither, and then on an amount to give (if any).

Studies ended with a brief personality and value survey, followed by demographics and

debriefing. The survey included measures of, for instance, empathic concern (Davis, 1983), and

intellect (DeYoung, Quilty, & Peterson, 2007). These two variables were tested as moderators for

the experimental effects. However, we found no reliable moderation effects and we report no

results for these variables (analytic scripts and results are open to request). The experimental

manipulations in Study 6 occurred at the end a larger survey, collecting a wide range of

demographic and attitudinal measures (see supplementary materials).

Results

We first examined the experimental effects in ANOVAs, including null-donations. There

was a significant main effect of the image manipulation in 4 of 6 studies. There were no main

effects of efficiency or effectiveness manipulations, and no significant interactions (see Table 1).

We further conducted a mini meta-analysis (Goh et al., 2016) for the image and

efficiency/effectiveness effects, and their interactions. Here we used a regression framework, and

point-biserial correlations as effect sizes, as in the main analyses. Given the experimental design,

and matching the ANOVAs, we used effect coding (+/-0.5). The meta-analysis included positive

efficiency/effectiveness only (as we only had negative information in two studies), and in study 4

we used the average effect of early and late presentation. This analysis indicated a robust effect of

the image manipulation, but no reliable influence of efficiency/effectiveness, and no significant

interaction between these factors (see Figure 1 and right-hand column in Table 1).

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Table 1. *Analysis of Variance Results for Experimental Effects of Empathy-Inducing Imagery and Efficiency/ Effectiveness Information on Donations (including zeros).*

	Study						Meta-analytic effect
	1	2	3	4	5	6	r_{pb} [CI]
Empathy-inducing image							
F	8.56	2.46	7.62	11.70	5.95	1.28	.09 [.06,.13]
p	.004	.117	.006	.001	.015	.259	<.001
η_p^2	.021	.004	.012	.019	.014	.004	
Bayes factor$_{10}$ [a]	6.39	0.30	13.91	23.67	1.86	0.23[c]	
Efficiency (/effectiveness)							
F	0.02	0.54	0.11	2.08	0.01	0.79	-.03 [-.06,.01]
p	.878	.583	.893	.126	.945	.372	.169
η_p^2	<.001	.002	<.001	.007	<.001	.003	
Bayes factor$_{10}$	0.11	0.03	0.07	0.12	0.11	0.18	
Image × efficiency (/effectiveness)							
F	1.15	2.02	0.10	0.76	0.07	1.77	-.03 [-.06,.01]
p	.283	.133	.905	.469	.792	.184	.170
η_p^2	.003	.007	<.001	.003	<.001	.006	
Bayes factor$_{10}$ [b]	0.28	0.22	0.04	0.07	0.16	0.38	

Note. r_{pb} = point-biserial correlation.
[a] Estimated in JASP using a non-informative prior (default).
[b] Comparing interaction + main effects to main effects only.
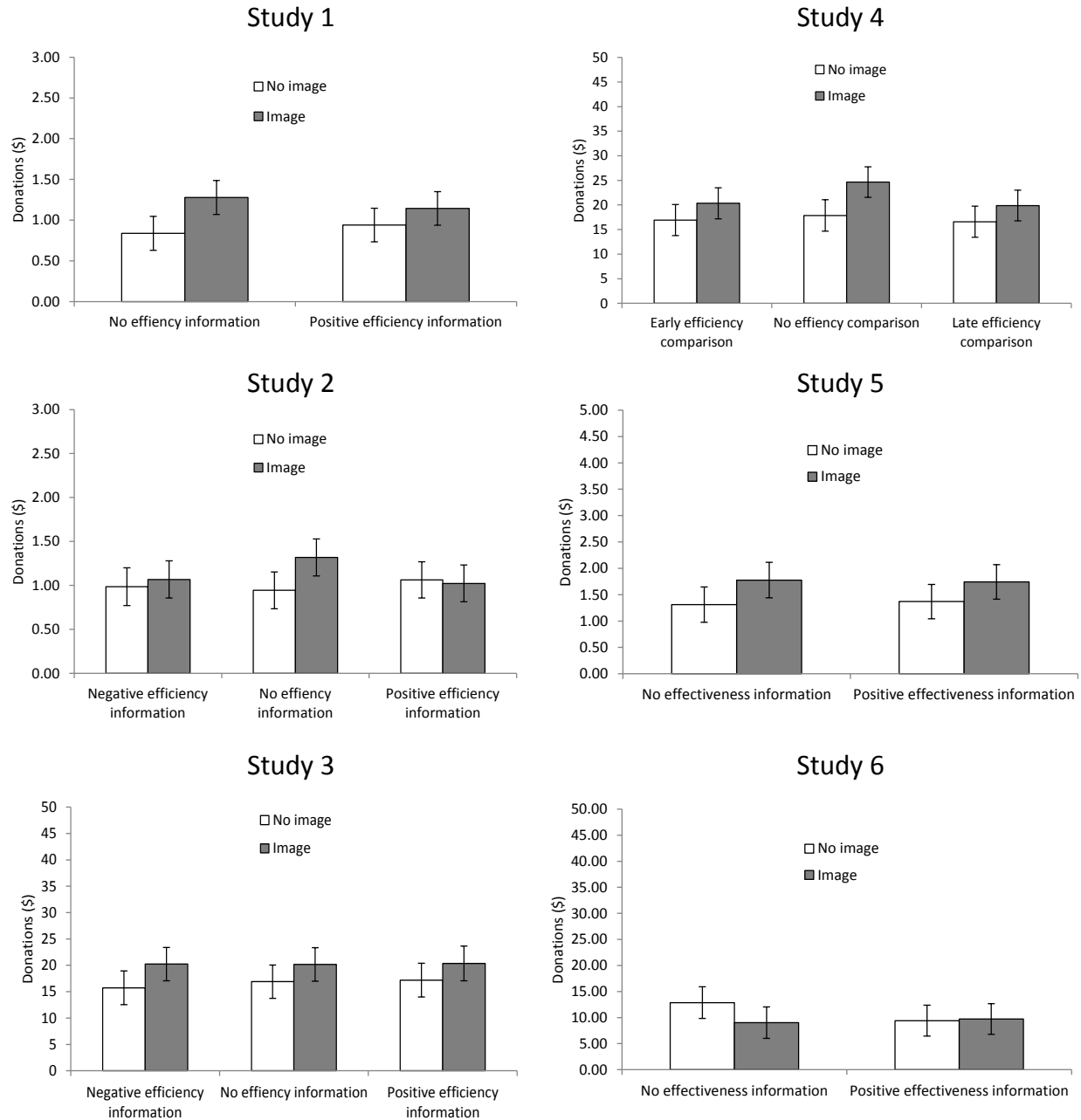[c] Effect in unanticipated direction.

Figure 1. Graphs show average donations (/prospective donations from raffle winnings) in each study as a function of efficiency/effectiveness and an image of an identified victim. Error bars represent 95% CIs.

Predicting Donation Incidence and Amounts Given. To test if images impact the decision whether to donate or not, while efficiency information impacts the amount given, we conducted logistic regression analyses for the first decision (no [0], yes [1]), followed by regressions on the non-zero amounts.

We also ran linear regressions on mid-range donations, setting aside a spike of maximum donation responses (12-17% in each study. Our rationale: donating everything may seem like a heuristic, emotional decision, whereas mid-range donations may have been most influenced by deliberation (about efficiency/ effectiveness).

We recognize that such "conditional on positive" estimates are imperfect (Lee, 2009): if a manipulation impacts donation incidence then its effects on non-zero amounts becomes difficult to interpret (see supplementary materials for alternative analyses addressing this issue). Still, we included separate analysis of non-zero and mid-range amounts because they can be synthesized in meta-analysis, based on the same regression framework used for the initial ANOVA results. All effects on donation incidence and given amounts are presented in Table 2, along with meta-analytic estimates.

Although varying in terms of significance, the overall evidence suggests that victim images influenced the decision whether to donate, as well as amounts given (see meta-analytic effects, as well as Lee-bounded estimates in the supplementary materials). However, there were no significant image effects on mid-range amounts.

Efficiency/ effectiveness did not have a statistically significant influence on any of the outcomes (although confidence intervals were rather wide). However, in study 2, efficiency interacted with the image for donated amounts, including mid-range donations. In particular, information about efficiency/effectiveness suppressed amounts given compared to the image

alone. There were similar but insignificant effects in Study 1 and 4 (see Figure 1) and this

interaction was significant in the meta-analysis (although this should be interpreted with caution,

see discussion).

Table 2. *Logistic and Linear Regression Analyses for Effects of Victim Imagery and Efficiency/Effectiveness Information on Decisions to Donate (No/Yes) and Amounts Given.*

	Donation: Yes/No			Donation amount (positive donations only)			Donation amount (Mid-range)		
	B [CI]	OR	p	B [CI]	r_{pb}	p	B [CI]	r_{pb}	p
Experiment 1									
Victim image	0.43 [0.02, 0.87]	1.54	.04	0.25 [0.01, 0.49]	.13	.04	0.09 [-0.08, 0.27]	.07	.33
Positive efficiency	-0.19 [-0.61, 0.22]	0.83	.38	0.09 [-0.15, 0.32]	.04	.46	0.11 [-0.07, 0.28]	.09	.23
Image × Pos. efficiency	-0.21 [-1.08, 0.65]	0.81	.62	-0.26 [-0.73, 0.23]	-.07	.29	-0.12 [-0.47, 0.24]	-.05	.52
Experiment 2									
Victim image	0.11 [-0.23, 0.45]	1.11	.52	0.13 [-0.05, 0.31]	.08	.16	0.04 [-0.09, 0.18]	.04	.53
Positive efficiency	-0.17 [-0.65, 0.32]	0.85	.48	0.02 [-0.24, 0.28]	.01	.86	0.05 [-0.15, 0.24]	.00	.62
Negative efficiency	-0.25 [-0.73, 0.23]	0.78	.31	0.01 [-0.26, 0.28]	.01	.94	-0.13 [-0.32, 0.06]	-.06	.18
Image × Pos. efficiency	0.09 [-0.83, 1.04]	1.09	.85	-0.58 [-1.11, -0.06]	-.17	.03	-0.43 [-0.83,-0.05]	-.16	.03
Image × Neg. efficiency	0.29 [-0.68, 1.27]	1.33	.55	-0.31 [-0.84, 0.24]	-.14	.25	-0.06 [-0.46, 0.33]	-.10	.76
Experiment 3 ($50 raffle)									
Victim image	0.32 [-0.07, 0.76]	1.38	.11	3.11 [0.30, 5.82]	.10	.02	1.18 [-1.03, 3.26]	.05	.28
Positive efficiency	-0.26 [-0.81, 0.33]	0.77	.37	2.00 [-1.92, 6.02]	.03	.31	-0.36 [-3.74, 2.86]	-.02	.82
Negative efficiency	0.12 [-0.46, 0.73]	1.12	.69	-1.58 [-5.21, 2.07]	-.01	.42	-0.56 [-3.33, 2.41]	-.03	.71
Image × Pos. efficiency	-0.05 [-1.19, 1.09]	0.95	.93	-1.02 [-9.03, 6.82]	-.02	.80	-1.35 [-7.80, 4.89]	-.03	.67
Image × Neg. efficiency	0.55 [-0.61, 1.73]	1.72	.35	-0.10 [-7.54, 7.25]	-.01	.98	0.16 [-5.51, 5.64]	-.01	.96
Experiment 4 ($50 raffle)									
Victim image	0.31 [-0.10, 0.75]	1.37	.13	4.31 [1.74, 6.86]	.14	.00	1.38 [-0.60, 3.34]	.06	.17
Early efficiency comp.	0.24 [-0.35, 0.91]	1.27	.43	-2.72 [-6.26, 0.96]	-.08	.15	-0.68 [-3.32, 1.92]	-.03	.62
Later efficiency comp.	-0.54 [-1.11, 0.01]	0.58	.06	-0.23 [-4.16, 3.56]	-.05	.90	-0.37 [-3.29, 2.45]	-.03	.80
Image × Early efficiency	0.86 [-0.28, 2.23]	2.37	.15	-6.35 [-13.53, 0.63]	-.08	.09	-4.14 [-9.43, 1.22]	-.08	.14

Image × Later efficiency	-0.79 [-1.97, 0.34]	0.45	.16	0.99 [-6.65, 8.46]	-.04	.79	0.54 [-5.31, 6.19]	-.03	.85
Experiment 5									
Victim image	0.54 [0.16, 0.94]	1.71	.01	0.11 [-0.28, 0.48]	.03	.60	-0.07 [-0.39, 0.24]	-.04	.65
Effectiveness	-0.07 [-0.46, 0.31]	0.94	.74	0.13 [-0.25, 0.53]	.03	.51	-0.16 [-0.47, 0.14]	-.08	.32
Image × Effectiveness	0.41 [-0.35, 1.19]	1.50	.30	-0.66 [-1.45, 0.12]	-.10	.10	-0.30 [-0.92, 0.34]	-.07	.36
Experiment 6									
Victim image	-0.09 [-0.54, 0.35]	0.92	.70	-2.40 [-6.58, 1.85]	-.09	.25	-2.52 [-5.43, 0.41]	-.13	.10
Effectiveness	0.01 [-0.44, 0.45]	1.01	.98	-2.41 [-6.53, 1.64]	-.09	.25	-2.61 [-5.54, 0.38]	-.13	.09
Image × Effectiveness	0.16 [-0.77, 1.06]	1.18	.72	5.97 [-2.25, 14.08]	.10	.16	5.42 [-0.37, 11.26]	.13	.07
Meta-analytic effects									
Victim image	OR_{mean} = 1.28 [1.10, 1.50]		.002	$r_{pb\ mean}$ = .09 [.04,.13]		<.001	$r_{pb\ mean}$ = .02 [-.02,.07]		.32
Efficiency /Effectiveness (+)	OR_{mean} = 0.86 [0.73, 1.03]		.09	$r_{pb\ mean}$ = .00 [-.04,.05]		.85	$r_{pb\ mean}$ = -.02 [-.07,.02]		.32
Image × Effectiveness (+)	OR_{mean} = 1.06 [0.88, 1.29]		.52	$r_{pb\ mean}$ = -.07 [-.11,-.02]		.003	$r_{pb\ mean}$ = -.05 [-.10,.00]		.04

Note. We used effect coding (+/- .5) to estimate the main effects of victim images and efficiency/ effectiveness information. "No information" was the reference category in the studies with two efficiency manipulations (e.g., positive and negative), and we specified one image interaction for each efficiency variable. Meta-analytic effects for efficiency/effectiveness are based on contrasts between positive versus no information only (negative information was examined in two studies only). Effects of early and late presentations of efficiency information were averaged in Study 4 in these those analyses. CIs in each study are based on bootstrapping with 5,000 samples.

Discussion

Based on recent debates about empathy, efficiency, and effectiveness in charitable giving (e.g., Bloom, 2016; Gneezy et al., 2014; Singer, 2015), we examined how these factors relate to each other: Are donations triggered by a single victim innumerate in the sense that they are unaffected by how charities spend their money? Does the availability of efficiency/effectiveness information disrupt or facilitate spontaneous giving due to victim images? Is the decision *whether* to donate spontaneous and emotionally driven? Does efficiency and effectiveness play a greater role in deciding on an amount to give?

Our results suggest that donations based on images of particular victims are not up-regulated by information that the charity was efficient or effective. This finding aligns with arguments that empathic helping is innumerate (Bloom, 2016) and not underpinned by logical deliberation (see also Slovic, 2010), at least not in the same way as interpersonal helping behaviors. There is evidence that empathically-moved people care about the impact of their aid to particular individuals (e.g., Sibicky et al., 1995), but that does not seem to translate into a concern for the effectiveness of charities. In fact, some of our studies suggested a "deliberation backlash" on empathic giving (see also Small et al., 2007). However, these interactions should be interpreted with caution, as our mixed results and Bayesian analyses suggest they are highly compatible with the null hypothesis (no interaction effect).

In general, images of identified victims increased the propensity to donate to people sharing that person's situation, independently of variations in the presentation of charity efficiency/effectiveness. This suggests that the induced empathy acted as a wide-angle lamp and not a narrow spotlight, benefitting not only the single victim but also many others in a similar situation. This is not a surprising finding (see also Slovic et al., 2017), but it is relevant for the question of whether empathy is fundamentally parochial (Bloom, 2016). This further supports the idea that emotions operate in a heuristic manner (Slovic et al., 2007). An image of single victims might be thought of as the on/off switch, while lacking a function for tuning how much to give.

We predicted that information about efficiency or effectiveness (on its own) would provide a tuning mechanism for amounts to give. However, we found no positive effects at all of providing people with information about charity efficiency or effectiveness, with reasonably tight confidence intervals on this null effect in our meta-analyses (similar results were also obtained with other analytic strategies, see supplementary materials). This clashes somewhat with previous

work; others have manipulated similar factors and found effects. However, previous studies with "successful" manipulations involved hypothetical donations, forced choices between charities, and/or fairly extreme contrasts in efficiency or effectiveness (see e.g., Caviola et al., 2014; Gneezy et al., 2014). We used naturalistic stimuli, real charity evaluations, and actual donation decisions. In these regards, our experiments are closer to the field experiments on this topic, which have also failed to find any overall effects of providing information about charity efficiency (Parsons, 2007) or effectiveness (Karlan & Wood, 2017). Taken together, this suggests that there might be circumstances when some people make decisions based on efficiency or effectiveness, but that these may not be overly common in real life. In our data, the Bayesian analysis strongly favors that interpretation as well.

This would suggest that organizations like GiveWell, ImpactMatters, and The Life You Can Save – which aim to maximize the impact of giving – might struggle to market charity effectiveness/efficiency to a mass audience, and may have more appeal to small groups of large donors (see also Karlan & Wood, 2017). High capacity donors may be driven by other motives than modal donors (see Levin, Levitt, & List, 2016), but more research is needed to determine if they care intrinsically more about effectiveness. Aside from facing greater compliance pressure, they may also consider effectiveness for reputational reasons: A person donating $5 to an ineffective charity is unlikely to pay a reputational cost, but a person donating $1,000,000 may look thoughtless and careless.

Implications and Future Work

Considering individual variation, all of our effect sizes were small. More work could be done to map that variation, and to identify who might respond more strongly to information about efficiency or effectiveness, and for what reasons. Individual variation aside, the identified victim

images had a substantial effect on total donation amounts – money that was not earmarked for the identified victim. In fact, those who were exposed to an identified victim often donated roughly 25% more than those who were not (see Figure 1). Thus, unless one can demonstrate alternative means to generate the same donation amounts, or show that donations raised without emotional appeals still do more good with a smaller revenue, it would seem counter-productive (not to say irrational) to discourage empathic giving (Bloom, 2016). It would seem more fruitful to harvest people's empathic impulses *and* try to direct their efforts to more effective causes.

Redirecting amounts raised based on empathy is a distinct strategy compared to trying to either convince people to give larger amounts or to give in "smarter" ways. More broadly, just because a behavior can be defined as "more rational" does not mean that deliberation is the key to encouraging it. Anti-smoking campaigns work to encourage a rational choice, but they are not solely based on numbers and philosophical argumentation. In fact, these campaigns use a range of "dumbed down" strategies, including emotion-evoking imagery (e.g., Durkin, Brennan, & Wakefield, 2012; Farrelly et al., 2012). Effective altruists could learn from such pragmatism, and research in social psychology and marketing could offer guidance about how to approach donors to maximize the impact of their charitable giving. We hope that the current research provides a step in this direction.

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