<u>Social Psychology</u>

Seeing Is Giving: The Role of Visual Identifiability in Online Donations—Evidence From a Large-Scale Field Study

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Theories of donation decisions, particularly those addressing beneficiary effects, have attracted scholarly interest for decades. However, most studies have been conducted in settings where visual cues (e.g., photos of recipients) correspond to the actual number of beneficiaries. In this study, we analyze a large dataset of real-world fundraising campaigns from an online donation platform to test predictions from prevailing theories of charitable giving. We focus on the effects of visual cues alone, independent of the actual number of beneficiaries, as is typical in online appeals. Specifically, we examine whether including a photo featuring a human recipient (vs. a non-human image) increases prosocial engagement (visual identifiability), and whether campaigns with a photo of a single identified individual attract more donations than those with a photo of multiple identified individuals (visual singularity). We find evidence supporting the visual identifiable victim effect, but not the visual singularity effect. These findings clarify how laboratory-based insights into donation decisions extend to real-world fundraising contexts and have practical implications for individuals and organizations seeking to optimize fundraising campaigns.

1. Introduction

Charitable giving is one of the most common forms of prosocial behaviors. In the US alone, charitable giving reached a record $592 billion in 2024 (Giving USA, 2025). Perhaps the fastest growing form of donations, especially by individual donors, are the ones done through digital platforms. Such online donations persistently grow at an annual rate of ~10%, reaching a record $46 billion in 2021 (Nonprofits Source, 2024). Donation decisions have received much interest in the scientific literature, where researchers have studied various topics such as the effects of overhead costs (Caviola et al., 2014; Gneezy et al., 2014), social information about other donors (Morvinski et al., 2022; Shang & Croson, 2009), the donation recipient's physical appearance (Cryder et al., 2017) and social group (Dovidio et al., 1997; Levine & Thompson, 2004), and the characteristics of the situation that triggered the need for donation (Bartels, 2006; Carroll et al., 2011; Epstein, 2006; Evangelidis & Van den Bergh, 2013; Morvinski, 2022).

Among the various factors shaping donation decisions, researchers have devoted particular attention to beneficiary effects (for a review, see Erlandsson et al., 2023), and especially the identifiability and singularity of the donation re-cipient. Some researchers have studied whether identified victims receive more donations than unidentified or statistical victims (Kogut & Ritov, 2005a, 2005b; Small et al., 2007), while others have investigated whether the number of recipients influences donation decisions (Baron, 1997; Fischhoff et al., 1993; Hsee & Rottenstreich, 2004; Kahneman et al., 1999; Kogut & Ritov, 2005a). A consistent conclusion emerging from this body of research is that acts of altruism are more likely when the victim is identifiable and evokes a sense of personal connection. Therefore, donations increase when the donation target is an identified individual with whom donors can relate and empathize (Kogut & Ritov, 2005a). Despite the many studies demonstrating the effects of donation target identifiability and singularity, most examine the characteristics of the donation target itself, rather than how it is presented. That is, these studies typically ask participants to donate either to a single child or to a group of several children, presenting them with a corresponding photo of one child or several children. While understanding the effects of identifiability and singularity on giving is theoretically important, the number of beneficiaries in real-world donation appeals is usually fixed (i.e., a campaign targets either a single child or several children). Thus, for a given fundraising cause,

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fundraisers can vary only the textual and visual presentation of the donation target(s), but not their count. This is especially true for online donation platforms, where the visual content displayed on the campaign's webpage often does not match the actual beneficiaries of the donation.

Here, we study whether, and how, the effect of visual representation of the donation target on donation decisions aligns with expectations derived from the above theories. In other words, we study whether the identified victim and singularity effects emerge even when they appear only in the visual stimulus of the donation appeal, while controlling for the actual number of donation recipients. We term these *visual identifiability* and *visual singularity*. Because most online fundraising campaigns include visual stimuli, and these stimuli—unlike the actual donation target—are easily manipulable, this research question has not only meaningful theoretical implications but also practical relevance for the design of more effective fundraising appeals.

1.1. The Identifiable Victim Effect

When donating money, people show a greater willingness to donate to identified victims compared to unidentified or statistical victims, a phenomenon known as the identifiable victim effect (Jenni & Loewenstein, 1997; Kogut & Ritov, 2005a, 2005b; Small et al., 2007). This effect is especially strong when the individual is identified through a photo (Perrine & Heather, 2000), particularly when the donation target is a child (Burt & Strongman, 2005; Lee & Feeley, 2016). Crucially, the effect is limited to situations involving a single individual. Identifying victims in a group does not significantly influence donation decisions (Kogut & Ritov, 2005b; Lee & Feeley, 2016).

Why do people donate more to identified victims, especially when identification includes a photo? Studies have shown that identified victims evoke stronger emotional arousal in potential donors (Genevsky et al., 2013). Additionally, identified victims are easier to empathize with, which reduces the psychological distance between the donor and the recipient (Small, 2015), and in turn, increases the donor's perceived responsibility to help (Kogut & Ritov, 2011). A recent study even found that identifying farm animals by name and face increased the ambivalence of regular meat consumers towards meat consumption (Cohen Ben-Arye & Halali, 2024). Moreover, even when the donation target was held constant (e.g., children's village in Mozambique), lab participants donated more money and experienced greater emotional arousal when an identified child was presented, especially when a photo of the child was also included (Erlandsson et al., 2015). Finally, whereas most studies demonstrating the identifiable victim effect use a separate evaluation mode (i.e., between-subject design), the effect also emerges in a joint evaluation mode (a within-subject design), but only when the numbers of people receiving help is equal (Erlandsson, 2021). That is, the effect emerges not only in a separate evaluation, where each participant is exposed to a single campaign either with or without an identifiable victim, but also in joint evaluation, where participants are presented with multiple campaigns, both with and without an identifiable victim, and can easily compare them. Because joint evaluation is a core feature of online donation platforms' architecture and interface design, where multiple campaigns are presented side by side and the target typically remains constant, findings from lab studies (Erlandsson, 2021; Erlandsson et al., 2015) suggest that the identifiable victim effect should also emerge in real-world online donation contexts.

1.2. The Singularity Effect

As noted earlier, empathy and connectedness often lead to higher donations levels. However, people often find it easier to empathize with, identify with, and feel connected to a single individual than to a group of people (Gordon-Hecker et al., 2024; Västfjäll et al., 2014). Numerous laboratory studies have repeatedly shown that the identifiable victim effect is stronger for individual recipients than for groups (Dickert et al., 2011; Kogut & Ritov, 2005b; Lee & Feeley, 2016; see Butts et al., 2019; Saeri et al., 2023, for recent reviews and meta-analyses).

The difficulty in identifying with a group of individuals gives rise to a phenomenon known as the singularity effect: people tend to donate more to a single identified recipient than to a group of recipients (Kogut & Ritov, 2005b; Slovic et al., 2017). The singularity effect has also been shown to generalize to contexts beyond victimhood or suffering. For example, people are more likely to lend money to, or invest in, small businesses run by a single entrepreneur rather than a group of entrepreneurs (Dai & Zhang, 2019; Galak et al., 2011). This bias stems from the inability of a group to evoke the emotional responses necessary to promote giving intentions (Dickert et al., 2012, 2015; Erlandsson et al., 2015; Loewenstein & Small, 2007; Slovic, 2007; Small et al., 2007; Västfjäll & Slovic, 2013). Several studies attempting to reverse the singularity effect found that deliberative thinking indeed attenuated the effect, but primarily by reducing donations to a single victim, rather than by increasing donations to a group of victims (Moche et al., 2022; Small et al., 2007). Importantly, unlike the identifiable victim effect, the singularity effect emerges only in separate evaluation, not in joint evaluation (Kogut & Ritov, 2005b). This suggests that when people can directly compare donation options, they tend to choose the one that helps more people.

Some studies have examined whether the singularity effect influences online real-world decisions, often yielding mixed results. While some studies find decisions regarding lending money through Kiva or funding projects on Kickstarter, are sometimes influenced by the singularity effect (e.g., Dai & Zhang, 2019; Galak et al., 2011), altruistic online donations appear to be less susceptible to it (Meier, 2025; Wang et al., 2024). The difference may stem from the fact that in platforms such as Kiva or Kickstarter, the recipient, such as a borrower or entrepreneur, is often a single individual. However, in altruistic donations, especially those made through online platforms, the recipient is not necessarily a single individual, and may instead be an organization or institution.

1.3. The Unique Effect of Visual Cues

As noted earlier, most studies on the identifiable victim and singularity effects have matched the visual stimuli (i.e., photos of the donation recipients) to the actual number of beneficiaries. Online donation campaigns typically include visual elements, and a recent systematic review, which included hundreds of studies, revealed that these visual elements are among the most effective strategies to boost charitable giving (Saeri et al., 2023). Hence, the question of whether the visual stimuli alone, irrespective of the actual number of beneficiaries, can influence donation decisions, holds significant theoretical and practical implications.

Recent studies offer initial attempts to address this question (Meier, 2025; Wang et al., 2024). For example, Meier (2025) analyzed approximately 28,000 online donation campaigns, and found that contrary to the theoretical predictions (e.g., Slovic, 2007), there was no evidence of scope insensitivity. That is, contrary to classic findings (e.g., Boyle et al., 1994) which suggest that donors' decisions are insensitive to the number of people affected by the donation, Meier (2025) found that donations increased as the number of people shown in the campaign photo increased. The author suggests that this is because in online donation platforms such as GoFundMe, potential donors evaluate campaigns jointly, rather than separately. These findings triggered renewed interest in understanding how visual presentation and platform architecture influence charitable behavior in real-world settings.

In the current study, we extend previous findings in two key ways. First, whereas prior studies examined the overall effect of the number of people in the photo on donations, our study takes a different approach by isolating the underlying psychological mechanisms of identifiability and singularity. Specifically, we examine whether these mechanisms operate on online donation platforms based solely on visual cues. Second, we analyze a much larger dataset of over one million real-world donation solicitation campaigns, which offers greater statistical power and enhances external validity. Given that online fundraising platforms routinely use visual content to solicit donations, understanding how visual identifiability and singularity influence donor behavior has important implications for platform design, nonprofit strategy, and effective fundraising practices.

1.4. The Current Research

To study the effects of visual identifiability and visual singularity on donation decisions, we analyzed a large-scale real-world dataset from DonorsChoose, a popular crowd-sourced donation platform for schoolchildren, consisting of 5.5 million donation decisions made to over one million fundraising campaigns, totaling over $156 million in chari-table contributions. We disentangle the visual information in the campaign ad from the actual donation information by controlling for the number of donation recipients, and examine the unique effects of identifiability and singularity conveyed through visual information. We focus on whether the beneficiaries are identified in the photo accompanying the fundraising campaign, rather than on the actual number of beneficiaries associated with the campaign. Additionally, as a preliminary test for the existence of any visual effect, we leveraged the fact that adding a photo to the campaigns was optional, to examine whether the inclusion of any photo influenced campaign success.

2. Methods and Materials

2.1. Data

We constructed our donation dataset by merging two sources of information. First, under a signed NDA, DonorsChoose provided us with information on over 2.5 million completed fundraising campaigns and 13.6 million individual donations associated with those campaigns. Campaign information included the fundraising goal, number of students affected by the fundraising campaign, class grade (PreK-2, 3-5, 6-8, 9-12), school state, type of resource needed (e.g., books, art supply, trips etc.). Most importantly, because the company data consisted of completed fundraising campaigns, it also indicated whether each campaign reached its fundraising target, the ultimate measure of campaign success, which in most related field studies, is typically inferred from other characteristics of ongoing campaigns (e.g., average donation or number of donors). Second, because DonorsChoose did not share with us the pictures associated with the campaigns, we obtained permission to scrape their website for information on 1.6 million randomly selected campaigns, including links to the accompanying photos (if any). We then matched the collected data to the data received from DonorsChoose based on the campaign's key features available in both datasets (i.e., title, description, goal amount, school state, class grade, and number of students affected). We successfully matched 1,036,466 fundraising campaigns for which we obtained both information from DonorsChoose and links to the accompanying photos. Many campaigns received no donations at all, which may signal low credibility, worthiness, or attainability, thereby reducing potential donors' motivation to give (Bracha et al., 2011; List & Lucking-Reiley, 2002). To avoid this confounding influence, the regression analyses excluded 161,757 campaigns that received zero donations. In Appendix C, we report the results obtained when all campaigns are included. Finally, because DonorsChoose only allows campaigns four months to reach their goal, we excluded campaigns that lasted more than

four months, as these were probably a result of recording errors. Hence, for our final sample, we analyzed 846,121 fundraising campaigns[1]. These campaigns represent 5,540,201 donations pledged between April 2013 and February 2020, totaling $155,220,318.

2.2. Analytical Approach

Campaigns on DonorsChoose are typically initiated by a teacher. When a teacher initiates a campaign, they describe all the project's information including requested items, sum of money needed, the intended use, and more. Additionally, the teacher includes a brief free-text description of the planned project and the students involved. Finally, the teacher may choose to include a photo on the campaign page. Importantly, when analyzing the photos associated with the campaigns, we found that they vary in the number of children they identify (see below). Hence, for our main predictor variable, we defined the number of identified human faces in a campaign photo for each campaign using facial recognition software.

Whereas most of the campaigns (98.0%) included photos, there was a large variation in what was featured in the photos. Some photos featured schoolchildren facing the camera, some featured schoolchildren facing other directions, and others showed classrooms with no children, either with or without inanimate objects. We used two face-detection software packages—Python 3.9.5, *OpenCV* library version 4.5.2, and Python 3.9.5 *face-recognition* library version 1.2.3—to count the number of human faces in each photo. We note that these software packages count human faces but not people. Thus, children looking away from the camera, for example, were less likely to be counted (see Appendix A in the supplemental materials for examples of photos in which human faces were not detected). Overall, *OpenCV* and *face-recognition* libraries detected faces in 35.4% and 32.5% of the photos, respectively. Faces were detected by at least one of the software packages in 41.1% of the photos in our dataset. Both software packages used for face counting were unable to process 21,574 photos, presumably due to unusual image characteristics or incompatible file formats. Campaigns containing these photos were excluded from the face-detection analyses but retained in the photo-inclusion analyses. To test the performance of the software, we compared their counts to a human-count of 2,000 randomly selected photos from our dataset, performed by research assistants. The correlations were $r = .71$ and $r = .63$ ($ps < .001$) for OpenCV and face-recognition, respectively, indicating that the software packages were fairly accurate at identifying the number of human faces in the photos. The correlation slightly improved ($r = .72$, $p < .001$) when comparing the human-count to the maximum count

of faces detected by the two software packages. Presumably, this is due to both software packages failures to detect faces in some photos, making the maximum number of detected faces the most reliable count. We, therefore, use the maximum count of faces based on both software packages as our measure of the number of human faces per photo. Figure 1 shows the distribution of detected faces in our dataset. Importantly, all the results remained virtually the same when using either one of the face-detection software packages' counts, separately.

The donation information obtained from DonorsChoose distinguishes among three types of donors: citizens (i.e., ordinary donors, henceforth "individuals"), teachers, and organizations. These distinctions are important because teachers and organizations may have different motivations for donating than individual donors. For example, some teachers contribute to their own projects to attract additional donations (e.g., seed contributions), while organizations are more likely to support schools in their local community. Thus, teachers and organizations may not be influenced by campaign's visual cues, such as the identifiability of the donation recipients, to the extent that individual donors do. We therefore restricted the main analyses to campaigns with individual donations, excluding those funded exclusively by teachers and/or organizations (i.e., campaigns receiving no individual donations). For completeness, Table 1 presents summary statistics for donations pledged by donor type.

To assess donor willingness to donate to a campaign, we used four success metrics extracted from our dataset. To account for other campaign-related factors that could influence giving, we included a comprehensive set of control variables in mixed-effects regression analyses. Below, we describe all variables used in the study, beginning with the four primary outcome measures, followed by their main predictors, and the control variables.

2.3. Dependent Variables

The campaign's success was measured using four metrics. First, and most straightforward, was whether the campaign reached its fundraising goal (i.e., succeeded). As mentioned above, this is the most important outcome for any donation solicitation campaign. Second, we examined whether visual identifiability and singularity influenced a campaign's completion time, as more attractive campaigns are expected to reach their targets more quickly. These two variables were estimated at the campaign level. Third, to gain a more fine-tuned understanding of the effects of visual identifiability and singularity, we examined donor behavior at individual level by assessing two additional metrics: the number of donors and the average donation per

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1 We note that some analyses include fewer observations. This is either due to technical issues related to incomplete data (e.g., the two software packages used to count faces could not successfully process the photos in 34,129 campaigns due to the photos' characteristics) or due to the authors' decision to exclude cases irrelevant to the investigation of visual effects. Specifically, 174,473 campaigns with no individual donations (i.e., those funded exclusively by other schoolteachers and/or organizations) were excluded from the main visual effects analyses, as explained below.
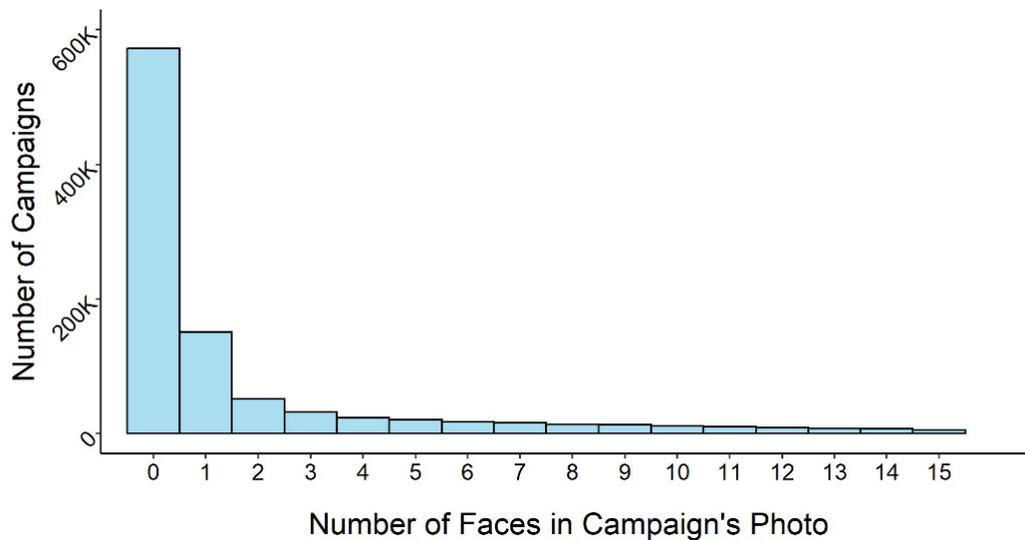
Figure 1. Distribution of the number of faces in DonorsChoose campaigns' photos

Note. Campaigns whose photos include more than 15 faces represent less than 1% of the sample and are excluded from the plot.

Table 1. Donation Amount Summary Statistics

Donor Type	Average	SD	Median	Number of Donations
Individuals	$102.41	198.17	$52.90	2,618,689
Teachers	$68.61	255.89	$30.40	1,268,232
Organizations	$240.05	585.94	$73.41	1,653,280
All donors	$183.45	462.69	$67.88	5,540,201

Note. Outliers are included in the raw statistics: Campaigns that reached their campaign target in a period exceeding four months were not included.

campaign. These two individual-level metrics were collected for all campaigns (i.e., both for campaigns who reached their goal and those that did not). It is important to note that our success metrics are likely correlated; for example, a campaign that receives higher average donations is also likely to reach its goal more quickly. However, gaining insight not only into whether campaigns that use visual identifiability or singularity are more successful, but also into why they succeed, is particularly valuable. Specifically, determining whether the effect is driven by an increase in the number of donors, by higher average donations, or by both can help clarify the mechanisms underlying campaign effectiveness. Below, we provide further details on each dependent variable.

Success rate: Our primary dependent variable is the probability that the campaign will reach its fundraising goal. The DonorsChoose platform uses an all-or-nothing donation system, meaning that if a campaign is not fully funded within four months of posting, all donations are returned to the donor's account. However, when a campaign reaches its funding goal, DonorsChoose purchases the requested supplies and ships them directly to the teacher. As such, fundraising campaigns on DonorsChoose either succeed or fail, enabling us to compare success rates across different campaign characteristics. In our dataset, 67.7% of the campaigns were fully funded (i.e., succeeded). However,

this proportion increases to 80.6% when we exclude campaigns that received no donations from any donor type.

Completion time: A second dependent variable is campaign completion time ($M = 60.1$, $SD = 49.8$). In line with Dai and Zhang (2019), we reason that campaigns that are better at eliciting prosocial tendencies may also reach their fundraising goal more quickly. As such, we used the time elapsed (in days) from the campaign's launch on the DonorsChoose platform to the date it reached its goal as an additional dependent variable. This variable was calculated only for successful campaigns, defined as those that reached their fundraising goal within four months of launch and included at least one individual donor.

Average donation: Because our dataset includes all individual donations for each campaign, we were able to calculate not only each campaign's overall success, but also its average donation amount. For all analyses, the average donation was log-transformed to adjust for the right-skewed nature of this variable (skewness = 40.26, kurtosis = 6,443.47). Finally, outliers were defined as campaigns with an individual average donation greater than 2.5 standard deviations above the overall mean ($598.25) and were excluded from the analyses examining the effect on the average donation amount. We report the results when including outlier campaigns in Appendix C.

Number of Donors: The fourth dependent variable is the number of individual donors per campaign ($M = 3.09$, SD

= 4.18)[2]. Although the average donation is largely dependent on this measure, analyzing the number of donors allows us to distinguish between effects that influence the donation amount among individuals who have already decided to give, and effects that influence the number of individuals who chose to donate. Note that, due to the nature of the dataset, we can measure the total number of donors, but not the likelihood that a given individual will donate. Outliers, defined as campaigns with a number of individual donors greater than 2.5 standard deviations above the overall mean, were excluded from the analyses examining the effect on the number of donors. Repeating these analyses without excluding outliers did not change the overall pattern of the results (Appendix C).

2.4. Predicting Variables

Identifiability: To explore the effects of identifiability, we coded campaigns accompanied by a photo that included at least one identified human face (i.e., schoolchild) as 1, and campaigns accompanied by a photo that included no identified human face as 0. We then tested the influence of identifiability on each of the corresponding dependent variables.

Singularity: To explore the effects of singularity we coded campaigns accompanied by a photo with a single identified child (i.e., singular) as 1, and campaigns accompanied by a photo with multiple identified children (i.e., non-singular) as 0. Note this distinction is independent of the actual number of beneficiaries. Hence, we test the unique effect of the number of identified children in the accompanying photo on each corresponding dependent variable.

2.5. Control Variables

The following fixed-effects variables were included in the regression analyses: campaign goal (i.e., amount of money requested), number of class students affected by the campaign, length (i.e., number of words) of the campaign title and description, category of the items for which funding was requested (e.g., books, art supplies, food, musical instruments), class grade, school state, year, and month. Many teachers (n = 164,829) in our dataset ran multiple fundraising campaigns for their class. We accounted for this information by including random effects for each teacher, as well as for the ordinal position of the campaign within the sequence of campaigns submitted by the teacher.

Considering that emotional appeals, positive or negative, may play a key role in attracting donations on fundraising platforms (Rhue & Robert, 2018), we applied computational text analysis to measure the extent to which positive or negative sentiment was expressed in each campaign's description. Specifically, we used the NRC Emotion Lexicon (Mohammad & Turney, 2013) to calculate the emotional polarity of the concatenated campaign title and description by classifying each word as positive, negative, or neutral, according to the NRC dictionary. We then created an unbounded polarity score, calculated as the difference between the number of positive and negative words and adjusted for the total number of words. In addition to the polarity score, the NRC lexicon enables assessing the intensity of specific emotions expressed in the text, using a similar mapping as above (i.e., each emotion is associated with a list of related words in the dictionary). As such, in our analyses we also controlled for specific negative (sadness, fear, anger, and disgust) and positive (anticipation, joy, trust, and surprise) emotional appeals.

For all analyses, we employed mixed-effects models with the campaign's number of class students affected, title length, description length, category of the requested items, class grade, school state, emotional polarity score, individual emotional appeals (i.e., sadness, fear, anger, disgust, anticipation, joy, trust, and surprise), year, and month as fixed effects, and teacher as well as the campaign's ordinal position within each teacher as random effects. Binary outcome variable models were fitted using logit link functions in the lme4 R package, and results were transformed into odds ratios. Finally, results from the analyses of log-transformed dependent variables were back-transformed for ease of interpretation.

3. Results

Before examining the potential effects of visual identifiability and singularity associated with campaign photos, we first confirmed that including any photo in the campaign increased its success. Overall, we found a strong positive effect of photo inclusion on campaign success rate, driven primarily by an increase in the number of donors (See Appendix B). This finding is consistent with numerous studies showing positive effects of photo inclusion in various contexts, such as online reviews (e.g., Li et al., 2022), Airbnb (e.g., Zhang et al., 2022), and restaurant success (e.g., Oliveira & Casais, 2018). For brevity, and because this is not the focal point of the current research, detailed analysis is provided in the supplemental materials.

3.1. The Visual Identifiable Victim Effect

To examine the effect of visual identifiability, we compared all four success metrics between campaigns featuring at least one identified human face and campaigns that included photos, but no human face identified.

Success rate / Completion time: Compared to campaigns with no identified children (n = 379,135), those featuring one or more identified children (n = 265,969) were associated with a higher likelihood of reaching their funding goal (81.5% vs. 82.3%, $\chi^2(1)$ = 68.15, *p* < .001). A mixed-effects

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2 Because campaigns can also attract other donor types (i.e., organizations and teachers), the average total number of donors per campaign is 6.55 (SD = 9.49).

Table 2. Visual Identifiable Victim Effects - Regression Results

	Success Rate	Completion Time	Avg. Donation	No. of Donors
	Model A	Model B	Model C	Model D
Intercept	3.070*** (.084)	2.685*** (.057)	3.864*** (.027)	-.733*** (.024)
Is identified	.046*** (.008)	-.036*** (.006)	.010*** (.003)	.019*** (.002)
Goal	-.001*** (.0000)	.0002*** (.0000)	.0000** (.0000)	-.0001*** (.0000)
Students affected	-.0003*** (.00002)	.0002*** (.00002)	-.0001*** (.00001)	.0001*** (.0000)
Words in title	.001* (.0004)	.001*** (.0003)	-.0003* (.0001)	.002*** (.0002)
Words in description	.001*** (.00006)	-.0002*** (.00004)	.0001** (.00002)	.0003*** (.0000)
Sentiment score	-.111*** (.011)	.075*** (.008)	-.017*** (.004)	.0196*** (.005)
Anger	-.071 (.049)	.045 (.031)	.022 (.015)	.057*** (.012)
Anticipation	.021 (.022)	-.002 (.014)	.014 (.007)	-.009 (.006)
Disgust	-.028 (.066)	.043 (.041)	-.056** (.020)	.161*** (.027)
Fear	.214*** (.046)	-.240*** (.029)	.041** (.014)	-.034** (.020)
Joy	.082*** (.024)	-.040* (.016)	-.050*** (.008)	.009 (.006)
Sadness	.097** (.034)	.106*** (.022)	.112*** (.011)	.008 (.009)
Surprise	.091** (.034)	-.152*** (.022)	-.019 (.011)	.037*** (.009)
Trust	.104*** (.017)	-.048*** (.011)	.060*** (.005)	-.035*** (.005)
N	645,103	527,738	633,864	628,961
BIC	562,163.7	2,025,813	1,635,752	1,374,616

Note. Standard errors are presented in parentheses alongside parameter estimates. The dependent variables in Models B-D are transformed using the natural logarithm. All regressions include fixed effects for class grade level, needs category, school state, month, and year, and random effects for teacher ID and for campaign ordinal position within each teacher. Significance levels: *$p < .05$; **$p < .01$; ***$p < .001$.

logit model of the final campaign status at the end of the allotted fundraising period, predicted by whether the campaign included identified children, revealed a significant and positive effect of identifiability ($B = 0.046$, $z = 5.91$, $p < .001$, $OR = 1.05$; Table 2, Model A). In addition, conditional on reaching their goal, campaigns with photos identifying schoolchildren reached their fundraising target more quickly than those without identified children ($M_{Identify} = 34.67$, $M_{Not\text{-}identify} = 35.50$, $t(527,736) = 6.07$, $p < .001$). A linear mixed-effects model of the (log-transformed) number of days to achieve the campaign goal onto whether the campaign's photo identified children confirmed the above results, as the coefficient for identifiability was negative and significant ($B = -0.036$, $t = -6.38$, $p < .001$; Table 2, Model B).

Average donation / Number of donors: Consistent with the previous results, including photos that identified (vs. did not identify) at least one child increased the average donation ($M_{Identified} = 86.01$, $M_{Unidentified} = 84.97$, $t(633,863) = 4.20$, $p < .001$) and attracted more donors ($M_{Identified} = 3.47$, $M_{Unidentified} = 3.45$, $t(628,960) = 3.55$, $p < .001$). Regression models confirmed these results: A linear mixed-effects model with the log-transformed average donation entered as the dependent variable, predicted by whether the campaign identified the donation recipients, revealed a positive and significant effect of identifiability ($B = 0.010$, $t = 3.78$, $p < .001$; Table 2, Model C). Accordingly, the same model with the log-transformed number of campaign donors as the dependent variable revealed similar results ($B = 0.019$, $t = 8.06$, $p < .001$; see Table 2, Model D).

Taken together, the results suggest that visual identifiability positively influences giving, regardless of the actual number of donation recipients. Consistent with the standard identifiable victim effect, even when the campaign photos do not reflect the true number of beneficiaries, real-world donation appeals that visually identify any recipients are more likely to succeed, reach their goals faster, and receive larger contributions from more donors. The positive effect of visual identifiability on giving persisted even after accounting for other predictors of giving, such as the campaign's goal amount, actual number of beneficiaries, and the length and emotional tone of the campaign description. These results suggest that visual identifiability alone is sufficient to serve as a potent cue for donor engagement, potentially by evoking empathy, strengthening perceived connection to the beneficiaries, or enhancing perceptions of campaign credibility. This finding underscores the critical role of visual framing in real-world fundraising.

3.2. The Visual Singularity Effect

Next, we examine the effect of visual singularity by comparing campaigns that feature a photo of a single identified child with those that feature a photo of multiple identified children, irrespective of the actual number of beneficiaries.

Success rate / Completion time: 81.9% of the campaigns that identified a single child (n = 100,435) and 82.5% of the campaigns that identified multiple children (n = 165,534) reached their goal within the allotted period. Although these proportions differed significantly from each other ($\chi^2(1) = 13.19$, $p < .001$), the effect size was negligible. A

Table 3. Visual Singularity Effects - Regression Results

	Success Rate	Completion Time	Avg. Donation	No. of Donors
	Model A	Model B	Model C	Model D
Intercept	2.488*** (.101)	2.685*** (.092)	3.878*** (.047)	-.084 (.039)***
Is single	-.032** (.012)	.021* (.009)	-.006 (.004)	-.014*** (.004)
Goal	-.0009*** (.0000)	.0002*** (.0000)	.0000* (.0000)	-.0000*** (.0000)
Students affected	-.0002*** (.0000)	.0002*** (.0000)	-.0001*** (.0000)	-.0000 (.0000)
Words in title	-.0007 (.0007)	.0016*** (.0005)	-.0003 (.0002)	.002*** (.0002)
Words in description	.0007*** (.0001)	-.0002** (.0001)	.0001* (.00003)	.0004*** (.0000)
Sentiment score	-.136*** (.018)	.077*** (.012)	-.021*** (.006)	.012*** (.005)
Anger	-.077 (.077)	.046 (.047)	.005 (.024)	-.059** (.020)
Anticipation	.033 (.034)	-.008 (.022)	.007 (.011)	-.009 (.009)
Disgust	-.029 (.102)	-.013 (.064)	-.055 (.032)	.150*** (.026)
Fear	.222** (.071)	-.024*** (.044)	.039 (.022)	-.053** (.018)
Joy	.122** (.038)	-.025 (.025)	-.056*** (.012)	.006 (.001)
Sadness	.026 (.054)	.121*** (.035)	.096*** (.017)	.033* (.014)
Surprise	.129* (.054)	-.169*** (.035)	-.011 (.017)	.030* (.014)
Trust	.127*** (.026)	-.052** (.017)	.069*** (.008)	-.032*** (.007)
N	265,968	218,840	261,960	260,109
BIC	29,289.1	840,721.3	680,630.3	574,388

Note. Standard errors are presented in parentheses alongside parameter estimates. The dependent variables in Models B-D are transformed using the natural logarithm. All regressions include fixed effects for class grade level, needs category, school state, month, and year, and random effects for teacher ID and for campaign ordinal position within each teacher. Significance levels: *$p < .05$; **$p < .01$; ***$p < .001$.

more rigorous analysis did not change the result. A mixed-effects logit model of the campaign status at the end of the allocated period, predicted by whether the campaign identified single or multiple donation recipients, yielded similar results. Campaigns featuring photos that identified a single child were less likely to reach their fundraising goal than those featuring photos that identified multiple children ($B = -0.032$, $z = -2.61$, $p = .009$, $OR = 0.97$; Table 3, Model A). Moreover, among campaigns that reached their fundraising goals, those featuring a photo identifying multiple children reached their goal slightly faster than those featuring a photo identifying a single child ($M_{Singular} = 34.88$, $M_{Non-singular} = 34.54$, t(218,838) = 2.01, $p = .037$). A linear mixed-effects model of the (log-transformed) number of days taken to reach the goal, predicted by whether the campaign's photo identified a single child or multiple children, confirmed the above results: the coefficient for singularity was positive, indicating a longer time to reach the goal, and statistically significant ($B = 0.021$, $t = 2.34$, $p = .019$; Table 3, Model B).

Average donation / Number of donors: Independent-samples t-tests indicated no significant differences between campaigns identifying a single child and those identifying multiple children, either in average donation amount ($M_{Singular} = 86.98$, $M_{Non-singular} = 87.60$, t(261,959) = -.194, $p = .846$) or in the number of donors per campaign ($M_{Singular} = 3.54$, $M_{Non-singular} = 3.53$, t(260,108) = 1.46, $p = .144$). As before, we assessed these effects more rigorously using linear mixed-effects models, with the (log-transformed) average donations and the (log-transformed) number of campaign donors as the dependent variables, and whether the

campaign identified single or multiple donation recipients as the key predictor. The first model revealed that singularity had no significant effect on average donation ($B = -0.006$, $t = -1.46$, $p = .145$; Table 3, Model C). The second model, however, showed a significant negative effect of singularity on the number of donors, such that campaigns identifying a single child attracted fewer donors than those identifying multiple children ($B = -0.014$, $t = -3.75$, $p < .001$; Table 3, Model D).

Although by small margins, visually identifying multiple (vs. a single) donation recipients in the donation appeal was associated with a higher success rate, a shorter goal completion period, and a greater number of campaign donors. That is, not only did we fail to observe results consistent with the standard singularity effect, but visual singularity was actually associated with poorer campaign performance, albeit by a relatively small margin. Importantly, these results do not necessarily contradict prior empirical evidence suggesting that appeals for a single identified child can be more effective, because in our dataset all campaigns had multiple actual recipients (i.e., an entire school class); only the number of visually identified children varies. Taken together, our results suggest that the effect of visual singularity may differ from that of standard singularity in real-world fundraising contexts where the actual number of beneficiaries is fixed, and where photos serve as supplementary cues rather than definitive indicators of the number of recipients.

4. General Discussion

In this work, we leverage a large-scale real-world dataset and a comprehensive set of outcome measures to examine the effects of visual identifiability and visual singularity on real-world donation decisions, where campaign photos do not typically reflect the true number of beneficiaries. Our analysis of more than 5.5 million donation decisions replicated laboratory findings on the identifiable victim effect, indicating that identifiability through photos plays a central role in fostering prosocial behavior. Compared to campaigns that do not visually identify donation recipients, those featuring photos identifying children, regardless of the number, were associated with higher success rates, shorter completion time, larger average donations, and more donors. These results align with previous laboratory research on the impact of photo inclusion (Erlandsson et al., 2015) and extend it to large-scale field data. Thus, beyond the expected positive effect of photos as non-textual cues, confirmed in our preliminary analysis, using them to visually identify donation recipients appears to further amplify prosocial engagement.

On the contrary, our findings did not show a visual singularity effect. In fact, not only did presenting a single (vs. multiple) child in the accompanying photo fail to increase prosocial engagement, but, consistent with recent findings (Meier, 2025; Wang et al., 2024), our data actually point in the opposite direction. Identifying multiple donation recipients was associated with a slightly higher likelihood of reaching the goal, shorter completion time, and a larger number of donors. However, this does not necessarily contradict the traditional singularity effect, because in our data the *actual* number of beneficiaries was held constant while only the photo varied. One possible explanation is that, unlike most laboratory studies, where participants evaluate donation appeals in isolation, in real-world online contexts, potential donors often view multiple campaigns side by side, resembling joint evaluation. In such settings, photos featuring multiple identified children may create a stronger impression of group need or a broader perceived impact (for a recent review, see Aizawa, 2025), thereby increasing prosocial engagement.

Another explanation might be that in lab studies people may sometimes assume that helping one person is less costly, and that therefore their donation is more impactful, than helping numerous victims. In our data, however, the donation target was always the entire class, and we controlled for the number of children in the class .Indeed, we observed a negative association between class size and campaign success, consistent with the notion that people donate less when the number of beneficiaries increases (Cameron & Payne, 2011; Hagman et al., 2022). In terms of visual singularity, the efficacy of one's donation is the same both when a single child is identified and when multiple children are identified. Further, in our data, the higher success rate for campaigns identifying multiple (vs. single) children appears to stem from their ability to attract more donors rather than from securing larger average donations. Charitable donation often requires at least some degree of identification with and empathy towards the recipient (Small, 2015). However, people's empathy is typically directed towards an individual, and not towards a group (Gordon-Hecker et al., 2024). To attract donors, campaigns should clearly identify a beneficiary (e.g., through photos) to whom donors can relate and empathize. Featuring more children in the photo increases the likelihood that a potential donor will form an emotional attachment to a particular child, fostering empathy and thereby increasing the likelihood of a donation.

Although not the primary focus of this investigation, our analysis also revealed an effect for the sentiment expressed in the donation appeal's text. Prior research has found that emotional appeals in donation solicitation can influence giving, but findings remain inconclusive as to which sentiment is more effective. Whereas some studies have shown that negative affect is more effective at eliciting donations (Bagozzi & Moore, 1994; Erlandsson et al., 2018; Small & Verrochi, 2009; Urbonavicius et al., 2019), others have found the opposite pattern, with positive sentiment proving more effective (Cavanaugh et al., 2015; Kemp et al., 2013; Liang et al., 2016). Further, a recent empirical study found that fundraising campaign descriptions with either positive or negative sentiment raised more money than those with neutral descriptions (Rhue & Robert, 2018). Another study suggested that combining positive (hope) and negative (sadness) emotional appeals may be the most effective strategy for increasing giving (Homer, 2021). Here, we extend this literature by showing that in the context of educational needs, positive sentiment is negatively associated with both campaign success and average donation. That is, our analysis suggests that fundraisers may be more effective using negative textual cues rather than positive ones in their appeals.

Taken together, our findings contribute to the growing body of research on beneficiary effects in donation decisions. We extend previous work by showing that, whereas visual singularity does not appear to influence donations on online platforms (as also suggested by Meier, 2025), visual identifiability does.

Our study also carries clear and important practical implications. As charitable organizations and individual fundraisers increasingly replace traditional fundraising strategies with online donation solicitation, they can leverage our findings to boost engagement with their initiatives. While previous research has shown that altering the information about donation recipients can influence giving, such changes can at times be difficult to implement and, in some cases, even ethically questionable. However, our findings suggest that altering information about the recipients is unnecessary; prosocial engagement can be increased simply by carefully crafting the visual information presented to potential donors on the platform. Thus, we offer fundraisers and charitable organizations a practical, easily implementable tool for enhancing engagement with their initiatives.

4.1. Limitations

As with most behavioral research projects, particularly those relying on field data, the current investigation is not without limitations. First, our analysis focuses exclusively on donations within a single domain: contributions to public school children. While the effects examined in this study are grounded in psychological theories of prosocial behavior, the magnitude of these effects may differ across domains. In fact, most of the effects we observed were relatively small in magnitude. While educational fundraising campaigns, such as those on the DonorsChoose platform, are widely regarded as highly important, they may be perceived as less emotionally engaging than other donation decision contexts involving life-and-death situations. Because the effects examined here are rooted in the affective system (Erlandsson et al., 2015; Kogut & Ritov, 2005b; Slovic et al., 2017; Västfjäll et al., 2014), it is plausible that they would be more pronounced in highly emotionally arousing contexts. Therefore, data from more emotionally engaging contexts, such as humanitarian crisis or memorials, may reveal larger effects.

We acknowledge that face-detection may not capture all forms of identifiability, and that additional predictive information could exist within the analyzed photos, the campaign description, and beyond the control variables included in our models, factors that were not accounted for in this study. For example, a campaign might explicitly name students in the accompanying text, without featuring them in photos, which could still render the victims identifiable to donors. Future studies could assess the degree of identifiability conveyed by donation recipients through textual and non-textual cues, and examine the relative influence of these cues on prosocial behavior. Such an analysis may not only improve the predictive power of identifiability, but also yield larger effect sizes by accounting for more information. We note that, due to ethical considerations, we did not download the campaign photos but instead applied the face-counting packages while scraping the campaign information. Conducting additional photo analyses was beyond the scope of this study and would have placed an unnecessary, and likely unauthorized, load on the DonorsChoose website, given the large number of campaign photos. Finally, as with most field data analyses, our results are conditional on giving, as we cannot observe individuals who were exposed to the campaigns but chose not to donate.

5. Conclusion

This study demonstrates that visually identifying beneficiaries enhances donor engagement, even when the photo does not reflect the actual number of recipients. At the same time, we find no evidence that visually isolating a single beneficiary improves a donation campaign's success, suggesting that visual singularity may operate differently in real fundraising environments than in controlled laboratory settings. These findings offer a straightforward takeaway for fundraisers: thoughtful visual storytelling can make a meaningful difference in motivating donations.

References

Aizawa, Y. (2025). Effects of Perceived Donation Efficacy on Donor Behavior: Review and Future Research Agenda. *Quarterly Journal of Marketing*, *45*(3), 246–251. https://doi.org/10.7222/marketing.2025.029

Bagozzi, R. P., & Moore, D. J. (1994). Public service advertisements: Emotions and empathy guide prosocial behavior. *Journal of Marketing*, *58*(1), 56–70. https://doi.org/10.1177/002224299405800105

Baron, J. (1997). Biases in the quantitative measurement of values for public decisions. *Psychological Bulletin*, *122*(1), 72–88. https://doi.org/10.1037/0033-2909.122.1.72

Bartels, D. M. (2006). Proportion dominance: The generality and variability of favoring relative savings over absolute savings. *Organizational Behavior and Human Decision Processes*, *100*(1), 76–95. https://doi.org/10.1016/j.obhdp.2005.10.004

Boyle, K. J., Desvousges, W. H., Johnson, F. R., Dunford, R. W., & Hudson, S. P. (1994). An investigation of part-whole biases in contingent-valuation studies. *Journal of Environmental Economics and Management*, *27*(1), 64–83. https://doi.org/10.1006/jeem.1994.1026

Bracha, A., Menietti, M., & Vesterlund, L. (2011). Seeds to succeed?: Sequential giving to public projects. *Journal of Public Economics*, *95*(5–6), 416–427. https://doi.org/10.1016/j.jpubeco.2010.10.007

Burt, C. D., & Strongman, K. (2005). Use of images in charity advertising: Improving donations and compliance rates. *International Journal of Organizational Behavior*, *8*(8), 571–580.

Butts, M. M., Lunt, D. C., Freling, T. L., & Gabriel, A. S. (2019). Helping one or helping many? A theoretical integration and meta-analytic review of the compassion fade literature. *Organizational Behavior and Human Decision Processes*, *151*, 16–33. https://doi.org/10.1016/j.obhdp.2018.12.006

Cameron, C. D., & Payne, B. K. (2011). Escaping affect: how motivated emotion regulation creates insensitivity to mass suffering. *Journal of Personality and Social Psychology*, *100*(1), 1–15. https://doi.org/10.1037/a0021643

Carroll, L. S., White, M. P., & Pahl, S. (2011). The impact of excess choice on deferment of decisions to volunteer. *Judgment and Decision Making*, *6*(7), 629–637. https://doi.org/10.1017/S1930297500002667

Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. (2015). Feeling love and doing more for distant others: Specific positive emotions differentially affect prosocial consumption. *Journal of Marketing Research*, *52*(5), 657–673. https://doi.org/10.1509/jmr.10.0219

Caviola, L., Faulmüller, N., Everett, J. A., Savulescu, J., & Kahane, G. (2014). The evaluability bias in charitable giving: Saving administration costs or saving lives? *Judgment and Decision Making*, *9*(4), 303–315. https://doi.org/10.1017/S1930297500006185

Cohen Ben-Arye, R., & Halali, E. (2024). Giving farm animals a name and a face: Eliciting animal advocacy among omnivores using the identifiable victim effect. *Journal of Environmental Psychology*, *93*, 102193. https://doi.org/10.1016/j.jenvp.2023.102193

Cryder, C., Botti, S., & Simonyan, Y. (2017). The charity beauty premium: Satisfying donors' "want" versus "should" desires. *Journal of Marketing Research*, *54*(4), 605–618. https://doi.org/10.1509/jmr.14.0658

Dai, H., & Zhang, D. J. (2019). Prosocial goal pursuit in crowdfunding: Evidence from Kickstarter. *Journal of Marketing Research*, *56*(3), 498–517. https://doi.org/10.1177/0022243718821697

Dickert, S., Kleber, J., Peters, E., & Slovic, P. (2011). Numeracy as a precursor to pro-social behavior: The impact of numeracy and presentation format on the cognitive mechanisms underlying donation decisions. *Judgment and Decision Making*, *6*(7), 638–650. https://doi.org/10.1017/S1930297500002679

Dickert, S., Västfjäll, D., Kleber, J., & Slovic, P. (2012). Valuations of human lives: normative expectations and psychological mechanisms of (ir)rationality. *Synthese*, *189*, 95–105. https://doi.org/10.1007/s11229-012-0137-4

Dickert, S., Västfjäll, D., Kleber, J., & Slovic, P. (2015). Scope insensitivity: The limits of intuitive valuation of human lives in public policy. *Journal of Applied Research in Memory and Cognition*, *4*(3), 248–255. https://doi.org/10.1016/j.jarmac.2014.09.002

Dovidio, J. F., Gaertner, S. L., Validzic, A., Matoka, K., Johnson, B., & Frazier, S. (1997). Extending the benefits of recategorization: Evaluations, self-disclosure, and helping. *Journal of Experimental Social Psychology*, *33*(4), 401–420. https://doi.org/10.1006/jesp.1997.1327

Epstein, K. (2006). Crisis mentality: Why sudden emergencies attract more funds than do chronic conditions, and how nonprofits can change that. *Stanford Social Innovation Review*, *4*, 48–57.

Erlandsson, A. (2021). Seven (weak and strong) helping effects systematically tested in separate evaluation, joint evaluation and forced choice. *Judgment and Decision Making*, *16*(5), 1113–1154. https://doi.org/10.1017/S1930297500008378

Erlandsson, A., Björklund, F., & Bäckström, M. (2015). Emotional reactions, perceived impact, and perceived responsibility mediate the identifiable victim effect, proportion dominance effect, and in-group effect respectively. *Organizational Behavior and Human Decision Processes*, *127*, 1–14. https://doi.org/10.1016/j.obhdp.2014.11.003

Erlandsson, A., Dickert, S., Moche, H., Västfjäll, D., & Chapman, C. (2023). Beneficiary effects in prosocial decision making: Understanding unequal valuations of lives. *European Review of Social Psychology*, 1–48.

Erlandsson, A., Nilsson, A., & Västfjäll, D. (2018). Attitudes and donation behavior when reading positive and negative charity appeals. *Journal of Nonprofit & Public Sector Marketing*, *30*(4), 444–474. https://doi.org/10.1080/10495142.2018.1452828

Evangelidis, I., & Van den Bergh, B. (2013). The number of fatalities drives disaster aid: Increasing sensitivity to people in need. *Psychological Science*, *24*(11), 2226–2234. https://doi.org/10.1177/0956797613490748

Fischhoff, B., Quadrel, M. J., Kamlet, M., Loewenstein, G., Dawes, R., Fischbeck, P., ... Stroh, P. (1993). Embedding effects: stimulus representation and response mode. *Journal of Risk and Uncertainty*, *6*, 211–234. https://doi.org/10.1007/BF01072612

Galak, J., Small, D., & Stephen, A. T. (2011). Microfinance decision making: A field study of prosocial lending. *Journal of Marketing Research*, *48*(SPL), S130–S137. https://doi.org/10.1509/jmkr.48.SPL.S130

Genevsky, A., Västfjäll, D., Slovic, P., & Knutson, B. (2013). Neural underpinnings of the identifiable victim effect: Affect shifts preferences for giving. *Journal of Neuroscience*, *33*(43), 17188–17196. https://doi.org/10.1523/JNEUROSCI.2348-13.2013

Giving USA. (2025, June 21). *Giving USA 2025: U.S. charitable giving grew to $592.50 billion in 2024, lifted by stock market gains*. https://givingusa.org/giving-usa-2025-u-s-charitable-giving-grew-to-592-50-billion-in-2024-lifted-by-stock-market-gains/

Gneezy, U., Keenan, E. A., & Gneezy, A. (2014). Avoiding overhead aversion in charity. *Science*, *346*(6209), 632–635.

Gordon-Hecker, T., Yaniv, I., Perry, A., & Choshen-Hillel, S. (2024). Empathy for the pain of others: sensitivity to the individual, not to the collective. *Journal of Experimental Social Psychology*, *110*, 104561. https://doi.org/10.1016/j.jesp.2023.104561

Hagman, W., Tinghög, G., Dickert, S., Slovic, P., & Västfjäll, D. (2022). Motivated down-regulation of emotion and compassion collapse revisited. *Frontiers in Psychology*, *13*, 801150. https://doi.org/10.3389/fpsyg.2022.801150

Homer, P. M. (2021). When sadness and hope work to motivate charitable giving. *Journal of Business Research*, *133*, 420–431. https://doi.org/10.1016/j.jbusres.2021.05.018

Hsee, C. K., & Rottenstreich, Y. (2004). Music, pandas, and muggers: On the affective psychology of value. *Journal of Experimental Psychology: General*, *133*, 23–30. https://doi.org/10.1037/0096-3445.133.1.23

Jenni, K., & Loewenstein, G. (1997). Explaining the identifiable victim effect. *Journal of Risk and Uncertainty*, *14*, 235–257. https://doi.org/10.1023/A:1007740225484

Kahneman, D., Ritov, I., & Schkade, D. A. (1999). Economic preferences or attitude expressions? An analysis of dollar responses to public issues. *Journal of Risk and Uncertainty*, *19*, 203–235. https://doi.org/10.1023/A:1007835629236

Kemp, E., Kennett-Hensel, P. A., & Kees, J. (2013). Pulling on the heartstrings: Examining the effects of emotions and gender in persuasive appeals. *Journal of Advertising*, *42*(1), 69–79. https://doi.org/10.1080/00913367.2012.749084

Kogut, T., & Ritov, I. (2005a). The "'identified victim'" effect: An identified group, or just a single individual? *Journal of Behavioral Decision Making*, *18*(3), 157–167. https://doi.org/10.1002/bdm.492

Kogut, T., & Ritov, I. (2005b). The singularity effect of identified victims in separate and joint evaluations. *Organizational Behavior and Human Decision Processes*, *97*(2), 106–116. https://doi.org/10.1016/j.obhdp.2005.02.003

Kogut, T., & Ritov, I. (2011). The identifiable victim effect: Causes and boundary conditions. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 133–145).

Lee, S., & Feeley, T. H. (2016). The identifiable victim effect: A meta-analytic review. *Social Influence*, *11*(3), 199–215. https://doi.org/10.1080/15534510.2016.1216891

Levine, M., & Thompson, K. (2004). Identity, place, and bystander intervention: Social categories and helping after natural disasters. *Journal of Social Psychology*, *144*(3), 229–245. https://doi.org/10.3200/SOCP.144.3.229-245

Li, H., Ji, H., Liu, H., Cai, D., & Gao, H. (2022). Is a picture worth a thousand words? Understanding the role of review photo sentiment and text-photo sentiment disparity using deep learning algorithms. *Tourism Management*, *92*, 104559. https://doi.org/10.1016/j.tourman.2022.104559

Liang, J., Chen, Z., & Lei, J. (2016). Inspire me to donate: The use of strength emotion in donation appeals. *Journal of Consumer Psychology*, *26*(2), 283–288. https://doi.org/10.1016/j.jcps.2015.09.001

List, J. A., & Lucking-Reiley, D. (2002). The effects of seed money and refunds on charitable giving: Experimental evidence from a university capital campaign. *Journal of Political Economy*, *110*(1), 215–233. https://doi.org/10.1086/324392

Loewenstein, G., & Small, D. A. (2007). The scarecrow and the tin man: The vicissitudes of human sympathy and caring. *Review of General Psychology*, *11*(2), 112–126. https://doi.org/10.1037/1089-2680.11.2.112

Meier, D. S. (2025). Compassion for all: Real-world online donations contradict compassion fade. *Nonprofit and Voluntary Sector Quarterly*, *54*(2), 267–301. https://doi.org/10.1177/08997640241255707

Moche, H., Gordon-Hecker, T., Kogut, T., & Västfjäll, D. (2022). Thinking, good and bad? Deliberative thinking and the singularity effect in charitable giving. *Judgment and Decision Making*, *17*(1), 14–30. https://doi.org/10.1017/S1930297500009001

Mohammad, S. M., & Turney, P. D. (2013). Crowdsourcing a word–emotion association lexicon. *Computational Intelligence*, *29*(3), 436–465. https://doi.org/10.1111/j.1467-8640.2012.00460.x

Morvinski, C. (2022). The effect of unavailable donation opportunities on donation choice. *Marketing Letters*, *33*(1), 45–60. https://doi.org/10.1007/s11002-021-09613-4

Morvinski, C., Lupoli, M. J., & Amir, O. (2022). Social information decreases giving in late-stage fundraising campaigns. *PLOS One*, *17*(12), e0278391. https://doi.org/10.1371/journal.pone.0278391

Nonprofits Source. (2024). *The Ultimate List Of Charitable Giving Statistics For 2024*. https://nonprofitssource.com/online-giving-statistics/

Oliveira, B., & Casais, B. (2018). The importance of user-generated photos in restaurant selection. *Journal of Hospitality and Tourism Technology*, *10*(1), 2–14. https://doi.org/10.1108/JHTT-11-2017-0130

Perrine, R. M., & Heather, S. (2000). Effects of picture and even-a-penny-will-help appeals on anonymous donations to charity. *Psychological Reports*, *86*(2), 551–559. https://doi.org/10.2466/pr0.2000.86.2.551

Rhue, L., & Robert, L. P. (2018). Emotional delivery in pro-social crowdfunding success. In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 1–6). https://doi.org/10.1145/3170427.3188534

Saeri, A. K., Slattery, P., Lee, J., Houlden, T., Farr, N., Gelber, R. L., … Zorker, M. (2023). What works to increase charitable donations? A meta-review with meta-meta-analysis. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *34*(3), 626–642. https://doi.org/10.1007/s11266-022-00499-y

Shang, J., & Croson, R. (2009). A field experiment in charitable contribution: The impact of social information on the voluntary provision of public goods. *Economic Journal*, *119*(540), 1422–1439. https://doi.org/10.1111/j.1468-0297.2009.02267.x

Slovic, P. (2007). "If I look at the mass I will never act": Psychic numbing and genocide. *Judgment and Decision Making*, *2*(2), 79–95. https://doi.org/10.1017/S1930297500000061

Slovic, P., Västfjäll, D., Erlandsson, A., & Gregory, R. (2017). Iconic photographs and the ebb and flow of empathic response to humanitarian disasters. *Proceedings of the National Academy of Sciences*, *114*(4), 640–644. https://doi.org/10.1073/pnas.1613977114

Small, D. A. (2015). On the psychology of the identifiable victim effect. In I. G. Cohen, N. Daniels, & N. Eyal (Eds.), *Identified vs. statistical lives: An interdisciplinary perspective* (pp. 13–23). Oxford University Press.

Small, D. A., Loewenstein, G., & Slovic, P. (2007). Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims. *Organizational Behavior and Human Decision Processes*, *102*(2), 143–153. https://doi.org/10.1016/j.obhdp.2006.01.005

Small, D. A., & Verrochi, N. M. (2009). The face of need: Facial emotion expression on charity advertisements. *Journal of Marketing Research*, *46*(6), 777–787. https://doi.org/10.1509/jmkr.46.6.777

Urbonavicius, S., Adomaviciute, K., Urbutyte, I., & Cherian, J. (2019). Donation to charity and purchase of cause-related products: The influence of existential guilt and experience. *Journal of Consumer Behavior*, *18*(2), 89–96. https://doi.org/10.1002/cb.1749

Västfjäll, D., & Slovic, P. (2013). Cognition and emotion in judgment and decision-making. In M. D. Robinson, E. R. Watkins, & E. Harmon-Jones (Eds.), *Handbook of Cognition and Emotion* (pp. 252–271). The Guilford Press.

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

Wang, R., Xu, H., & Zhang, X. (2024). Impact of Image Content on Medical Crowdfunding Success: A Machine Learning Approach. *Journal of Medical Internet Research*, *26*, e58617. https://doi.org/10.2196/58617

Zhang, S., Lee, D., Singh, P. V., & Srinivasan, K. (2022). What makes a good image? Airbnb demand analytics leveraging interpretable image features. *Management Science*, *68*(8), 5644–5666. https://doi.org/10.1287/mnsc.2021.4175

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